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# **Recommending AzMERIT Performance Standards**

**English Language Arts Grades 3-11**

**Math Grades 3-8, Algebra I, Geometry,  
and Algebra II**

**Technical Report**

September 14, 2015

Arizona Assessments  
Summer 2015 Standard Setting

Recommending Performance Standards for Arizona's  
Measurement of Educational Readiness to Inform  
Teaching (AzMERIT)

ELA Grades 3-11

Math Grades 3-8, Algebra I, Geometry, and Algebra II

Technical Report

September 14, 2015\*

**\*A draft version of this report was provided to the State Board of Education on June 27, 2015. This final version includes a correction to Figure 2, added text regarding the adoption of final performance standards, a revision of Appendix I, and the addition of Appendix Q.**

Prepared by American Institutes for Research (AIR) in collaboration with the  
Arizona Department of Education

## TABLE OF CONTENTS

Introduction .....	1
Performance Standards and Validity of Test Score Interpretations .....	1
Overview of Standard Setting Approach .....	5
Workshop Design .....	5
Workshop Location .....	7
Workshop Staffing .....	7
Workshop Panelists .....	7
Higher Education Panel .....	8
Workshop Training .....	10
Standard Setting Materials and Procedures .....	12
Performance Level Descriptors .....	12
Ordered Item Booklet .....	13
AzMERIT Bookmark Placement .....	15
Benchmark Information .....	17
Panelist Feedback and Impact Data .....	18
Vertical Articulation .....	19
Workshop Evaluation .....	20
Recommended Performance Standards and Impact Data .....	21
Evaluation of the Standard Setting Workshop .....	28
Panelist Evaluation of Standard Setting Workshop .....	28
Independent Observer Review of Standard Setting Workshop .....	29
Adoption of Final Performance Standards .....	30
References .....	31
Appendix A – Workshop Agendas .....	A-1
Appendix B – Composition of Panels .....	B-1
Appendix C – Training Presentations .....	C-1
Appendix D – Performance Level Descriptors .....	D-1

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Appendix E – Test Blueprints .....	E-1
Appendix F – Summary of Ordered Item Booklets .....	F-1
Appendix G – OIB Item Data Plots .....	G-1
Appendix H –Bookmark Placement Readiness Forms .....	H-1
Appendix I – Investigation of Equating Student Scores Across AzMERIT Test Administration Modes .....	I-1
Appendix J – AzMERIT Vertical Linking Study .....	J-1
Appendix K – Panelist Evaluation Forms.....	K-1
Appendix L – Recommend Performance Standards by Round .....	L-1
Appendix M – Convergence of Bookmarks across Rounds .....	M-1
Appendix N – Estimated Percentage of Students at Each Performance Level for Panelist Recommended Performance Standards, Overall and by Gender and Ethnicity .....	N-1
Appendix O – Summary of Panelist Evaluations.....	O-1
Appendix P – Independent Observer Report to State Board of Education .....	P-1
Appendix Q – State Board of Education Review and Adoption of Standards .....	P-1



## Introduction

In 2010, Arizona adopted new academic content standards in English language arts (ELA) and math. The Arizona College and Career Ready Standards are designed to ensure that students across grades are receiving the instruction they need to be on track for college and career by the time they graduate. In spring 2015, the Arizona Department of Education (ADE) administered for the first time Arizona's Measurement of Educational Readiness to Inform Teaching (AzMERIT) to assess proficiency on the new Arizona College and Career Ready Standards. The AzMERIT measures English language arts in grades 3-11, and math in grades 3-8 and following completion of high school coursework in Algebra I, Geometry, and Algebra II.

The AzMERIT is a series of fixed form assessments that are intended to be administered online, although the assessment is offered as a dual mode, online and paper, assessment to accommodate schools that are not ready to transition to the online testing environment. A common operational base form was administered to all students within a given test grade and subject. Each assessment is comprised of two to three discrete test sessions.

The first operational administration of the AzMERIT assessment took place in spring 2015. Online administration of the AzMERIT occurred from March 30 through May 8, 2015. The paper version of the AzMERIT was administered between April 13 and April 24, 2015. Following the close of the test administration windows, the American Institutes for Research (AIR), under contract to ADE, convened eight panels of Arizona educators to recommend performance standards on the assessments. This document describes the procedures used to conduct the standard setting workshops as well as the recommended performance standards and resulting impacts.

## Performance Standards and Validity of Test Score Interpretations

Validity refers to the degree to which test score interpretations are supported by evidence, and speaks directly to the legitimate uses of test scores. Establishing the validity of test score interpretations is thus the most fundamental component of test design and evaluation. The Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 2014) provide a framework for evaluating whether claims based on test score interpretations are supported by evidence. Within this framework, the Standards describe the range of evidence that may be brought to bear to support the validity of test score interpretations.<sup>1</sup>

The kinds of evidence required to support the validity of test score interpretations depend centrally on the claims made for how test scores may be interpreted. Moreover, the standards make explicit that validity is not an attribute of tests, but rather test score interpretations. Some test score interpretations may be supported by validity evidence, while others are not.

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<sup>1</sup> Responsive to Standards for Educational and Psychological Testing: Standard 9.13

Thus, the test itself is not considered valid, but rather the validity of the intended interpretation and use of test scores is evaluated.

Central to evaluating the validity of test score interpretations is determining whether the test measures the intended construct. Such an evaluation in turn requires a clear definition of the measurement construct. For Arizona's new AzMERIT assessments, the definition of the measurement construct is provided by the Arizona College and Career Ready Standards.

The Arizona College and Career Ready Standards (ACCRS) specify what students should know and be able to do by the end of each grade level in order for students to graduate ready for post-secondary education or entry into the workforce. Because directly measuring student achievement against each benchmark in the ACCRS would result in an impractically long test, each test administration is designed to measure a representative sample of the content domain defined by the Standards. To ensure that each student is assessed on the intended breadth and depth of the Standards, test form construction is guided by a set of test specifications, or blueprints, which indicate the number of items that should be sampled from each content strand, standard, and benchmark. Thus, the test blueprints represent a policy statement about the relative importance of content strands and standards in addition to meeting important measurement goals (e.g., sufficient items to report strand performance levels reliably). Because the test blueprint determines how student achievement of the Arizona College and Career Ready Standards is evaluated, alignment of test blueprints with the content standards is critical. ADE has published the AzMERIT test blueprints that specify the distribution of items across reporting strands and depth of knowledge levels.

Alignment of test content to the Arizona College and Career Ready Standards (ACCRS)<sup>2</sup> ensures that test scores can serve as valid indicators of the degree to which students have achieved the learning expectations detailed in the ACCRS. However, the interpretation of the AzMERIT test scores rests fundamentally on how test scores relate to performance standards which define the extent to which students have achieved the expectations defined in the ACCRS. AzMERIT test scores are reported with respect to four proficiency levels, demarcating the degree to which Arizona students have achieved the learning expectations defined by the Arizona College and Career Ready Standards. The cut score establishing the Proficient level of performance is the most critical, since it indicates that students are meeting grade level expectations for achievement of the Arizona College and Career Ready Standards, that they are prepared to benefit from instruction at the next grade level, and that they are on track to pursue post-secondary education or enter the workforce. Procedures used to adopt performance standard for the AzMERIT assessments are therefore central to the validity of test score interpretations.

Following the first operational administration of the AzMERIT assessments in spring 2015, a standard setting workshop was conducted to recommend to the Arizona State Board of Education a set of performance standards for reporting student achievement of the Arizona College and Career Ready Standards. This document describes the standardized and rigorous procedures that Arizona educators, serving as standard setting panelists, followed to

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<sup>2</sup> Responsive to Standards for Education and Psychological Testing: Standard 12.8 and 12.10

recommend performance standards. The workshops employed the Bookmark procedure, a widely used method in which standard setting panelists use their expert knowledge of the Arizona College and Career Ready Standards and student achievement to map the performance level descriptors adopted by the Arizona State Board of Education onto an ordered item book based on the first operational test form administered to students in spring 2015.

Panelists were also provided with contextual information to help inform their primarily content driven cut score recommendations. Panelists recommending performance standards for the high school assessments were provided with information about the approximate location of the relevant ACT college ready performance standard for the grade 11 ELA and Algebra II assessments, and Programme for International Student Assessment (PISA) performance standards for the grade 10 ELA and Geometry assessments. Panelists recommending performance standard for the grade 3-8 summative assessments were provided with the approximate location of relevant NAEP performance standards at grades 4 and 8, as well as interpolated values for grade 6. Panelists were provided with the approximate locations of the Smarter Balanced performance standards for the grade 3-8 and 11 assessments in ELA and math to provide additional context about the location of performance standards for statewide assessments. Additionally, panelists were provided the corresponding locations for the previous AIMS performance standards. Panelists were asked to consider the location of these benchmark locations when making their content-based cut-score recommendations. When panelists are able to use benchmark information to locate performance standards that converge across assessment systems, validity of test score interpretations is bolstered.

In addition, panelists were provided with feedback about the vertical articulation of their recommended performance standards so that they could view how the locations of their recommended cut scores for each grade level assessment sat in relation to the cut score recommendations at the other grade levels. This approach allowed panelists to view their cut score recommendations as a coherent system of performance standards, and further reinforces the interpretation of test scores as indicating not only achievement of current grade level standards, but also preparedness to benefit from instruction in the subsequent grade level.

Based on the recommended cut scores, Table 1 shows the estimated percentage of students meeting the AzMERIT proficient standard for each assessment in spring 2015. Table 1 also shows the approximate percentage of Arizona students that would be expected to meet the ACT college ready standard, and the percentage of Arizona students meeting the NAEP proficient standards at grades 4 and 8. Table 1 also presents the expected proficient rate for the Smarter Balanced Assessments, system wide, based on the spring 2014 field test administration. As Table 1 indicates, the performance standards recommended AzMERIT assessments are quite consistent with relevant ACT college ready, and the NAEP and Smarter Balanced proficient, benchmarks. Moreover, because the performance standards were vertically articulated, the proficiency rates across grade levels are generally consistent.

**Table 1. Estimated Percentage of Students Meeting AzMERIT and Benchmark Proficient Standards.**

Assessment	Percent of Students Meeting Standard			
	AzMERIT Proficient	Arizona ACT College Ready	Arizona NAEP Proficient	Projected SBAC
<b>ELA</b>				
Grade 3	41%			38%
Grade 4	38%		28%	41%
Grade 5	30%			44%
Grade 6	34%			41%
Grade 7	33%			38%
Grade 8	32%		28%	41%
Grade 9	27%			
Grade 10	30%			
Grade 11	25%	34%		41%
<b>Mathematics</b>				
Grade 3	42%			39%
Grade 4	42%		42%	38%
Grade 5	40%			33%
Grade 6	32%			33%
Grade 7	31%			33%
Grade 8	33%		32%	32%
Algebra I	32%			
Geometry	30%			
Algebra II	29%	36%		33%

## Overview of Standard Setting Approach

The Bookmark method (Mitzel, Lewis, Patz, & Green, 2001) was used to recommend performance standards for the AzMERIT. ADE previously used the Bookmark method to recommend performance standards for the AIMS assessment. The Bookmark method was implemented in two rounds, providing panelists with benchmark information prior to Round 1 and panelist feedback and impact data prior to Round 2. To facilitate vertical articulation of performance standards across grades, workshop panelists began by recommending performance standards for grades 4, 6, 8, 10, and 11 (Geometry and Algebra II for math), following standard Bookmark procedures. For the remaining “intermediate” grades, following a vertical moderation session to articulate performance standards across grades, panelists were provided with interpolated performance standards based on the recommended standards from the “anchor” grades. For the intermediate grades, the judgment task used by panelists was modified somewhat. For each performance standard, panelists were asked to examine the item on the interpolated page and judge whether students who just barely are described by the performance level descriptor could respond successfully to the item, and if so, to endorse the interpolated OIB page as the performance standard. If they could not endorse the interpolated OIB page as the performance standard, panelists were asked if they could locate an item very near the location of the interpolated OIB page that students just barely meeting the standard could respond to successfully.

Panelists were tasked with recommending three performance standards (Partially Proficient, Proficient, and Highly Proficient) that resulted in four performance levels (Minimally Proficient, Partially Proficient, Proficient, and Highly Proficient).

### Workshop Design

To recommend performance standards for each of the AzMERIT assessments, ADE convened eight panels representing four grade bands (3-4, 5-6, 7-8, and 9-11) for each subject. The panels consisted of educators from the respective grade bands and content areas. The panelists recommended performance standards based primarily on content considerations with additional context provided by relevant benchmark information from statewide (SBAC), national (NAEP), international (PISA), and college entrance (ACT) exams, as well as estimated student performance on the recommended standards prior to Round 2. Panelists used Ordered Item Booklets (OIBs) and Performance Level Descriptors (PLDs) to place performance standards for all three performance levels, Partially Proficient, Proficient, and Highly Proficient, in two rounds. First panelists recommended performance standards for the anchor grades, 4, 6, 8, 11/Algebra II (grade 10/Geometry were also considered anchor grades). After recommending performance standards for the anchor grades, a moderation session was conducted with the table leaders from each of the panels to review the vertical articulation of the performance standards, and to implement any adjustments to the anchor grade recommendations to facilitate vertical articulation. Following the vertical articulation session, panelists continued on to recommend performance standards for the remaining grade level assessments, using the

interpolated standards to provide further contextual information about the likely location of performance standards.

The AzMERIT Standard Setting workshops were conducted over four days, with the high school panels, which had to recommend performance standards for three assessments, beginning on Monday, and the remaining grade level panels convening on Tuesday. A broad overview of the workshop calendar is presented in Table 2. Detailed agendas for the standard setting workshops are included as Appendix A.

**Table 2. Calendar Dates for 2015 Grade Level and High School ELA and Math Standard setting Workshops**

Workshop	Monday, July 13	Tuesday, July 14	Wednesday, July 15	Thursday, July 16
Grade Level	N/A	Standard Setting Day 1	Standard Setting Day 2	Standard Setting Day 3
High School	Standard Setting Day 1	Standard Setting Day 2	Standard Setting Day 3	Standard Setting Day 4

The workshops began with a brief table leader orientation to review with table leaders their role and responsibilities. The workshop proper began with a large group training to provide panelists with an overview of the workshop activities and initial training in the bookmarking procedures. Following the large group session, the workshop panels convened in their meeting rooms, and began their work by participating in the same AzMERIT online assessment that was administered to their students in the spring. Panelists then spent several hours working through the performance level descriptors (PLDs) developed by ADE, and developing modified descriptors to characterize the special subset of students who just barely qualify for entry into each of the performance levels. After developing descriptors for the just barely students, panelists spent the remainder of day one reviewing their ordered item books (OIBs).

Panelists did not begin recommending performance standards until day two, which began with training on the bookmark placement task. Panelists then worked through their OIBs and placed their bookmarks for Round 1. After Round 1, panelists were provided feedback about the bookmark placements of the other panelists and discussed those bookmark placements at their tables and across the room more generally. Panelists were then also provided with impact data showing the estimated percentage of students who would meet each of the performance standards and engaged in panel discussions about any implications of those proficiency rates. Upon completion of panel discussions, panelists made a second round of bookmark placements, and then began the process over again for the subsequent assessment.

## Workshop Location

The workshops were held at the Hyatt Regency, located at 122 North 2nd Street in Phoenix, Arizona. The location provided meeting spaces to hold the AzMERIT workshop panels, as well as a psychometric work room for completion of analysis activities and storage space for secure materials throughout the workshop.

## Workshop Staffing

A senior workshop coordinator was tasked with leading the cross-workshop introductory training and vertical moderation meetings, and was responsible for working with each facilitator and monitoring the flow of activities across workshops. AIR test development staff served as workshop facilitators, leading each panel through training activities and execution of the standard setting process. Additionally, an AIR research assistant was assigned to each panel to support the workshop facilitator. Because test development staff served as workshop facilitators, they were highly qualified to facilitate the development of just barely performance level descriptors, and to serve as a subject matter resource for panelists as they navigated the OIB. A team of three AIR psychometricians managed psychometric activities in support of the workshop, including ensuring accurate data capture of bookmark placements, presentation of vertical articulation results for moderation meetings, and production of final results for the standard setting technical report. In addition, AIR project staff facilitated organization of meeting space and meals and provided support to panelists as necessary.

ADE staff monitored all standard setting activities, and also addressed any policy or test development questions for panelists. While ADE staff answered specific, direct questions, they were not actively involved in the facilitation of the meeting.

## Workshop Panelists

ADE worked to obtain broadly representative panels for the standard setting workshops that reflected the teacher population in the state of Arizona in terms of gender, race, ethnicity, and geographical representation. Diverse groups of panelists bring a wide range of perspectives and experience to the standard setting effort, ensuring that the recommendations that are forwarded to the State Board of Education are thoughtful and representative of broad educational constituencies, and represent the range of expertise and experiences found in the educator population across the state.

Within each of the ELA and math panels, a total of 12 panelists per grade band subpanel were recruited to recommend standards. ADE targeted the number of male and female panelists to mirror the population of educators. In the same way, ADE worked to include proportional representation of American Indian/Native American, Asian/Pacific Islanders, Black (Non-Hispanic), Hispanic and White (Non-Hispanic) panelists, and a proportional number of panelists from rural, urban, and suburban districts. For course-based assessments in math that require specific content expertise, ADE sought to include teachers who have expertise in the content standards and coursework for all three areas they recommended performance standards for:

Algebra I, Geometry, and Algebra II. In addition, ADE worked to include special education and English Language Learners (ELL) teachers.

Within each subpanel, tables were balanced to include panelists with varying content expertise and demographic representation in each group.

ADE designated three table leaders for each panel. Table leaders attended an additional orientation meeting and were tasked with assisting standard setting staff by

- facilitating discussions within their table;
- distributing and collecting readiness and recording sheets and secure materials;
- alerting workshop staff of confusion or concerns within their tables; and
- representing their table and panel during vertical articulation meetings.

Letters containing logistical information and reminders about the purpose<sup>3</sup> of the workshop were emailed to confirmed panelists two weeks prior to the standard setting workshop. In the week prior, testing contractor staff contacted all panelists via phone to confirm receipt of information. Throughout the process, ADE continued to recruit replacements for panelists who withdrew their participation.

Appendix B<sup>4</sup> presents the composition of the standard setting panels. For each panel, the table includes a record for each panelist and indicates the geographic region he or she represents and his or her gender, ethnicity, and main expertise. While it is critically important to include a range of stakeholders in the standard setting process, experience has shown that it is essential for panelists to have direct knowledge of academic standards and student grade-level performance to participate meaningfully in the Bookmarking procedure. For this reason, panel participation was restricted to classroom teachers and curriculum specialists with expertise in ELA and math curriculum and instruction.

## Higher Education Panel

Prior to the standard setting workshops, ADE engaged a higher education panel in two activities intended to support the assertion that students who achieve the “Proficient” level on AzMERIT in ELA11 and Algebra II are on track to be college ready upon graduation from high school. This higher education panel included 10 participants representing all three of Arizona’s public universities and three of the state’s community college systems. Each was familiar with the requirements for students to be successful in either credit-bearing entry level college mathematics courses or credit-bearing entry level college English courses.

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<sup>3</sup> Responsive to Standards for Education and Psychological Testing: Standard 5.0, 5.21, 5.22, and 7.0

<sup>4</sup> Responsive to Standards for Education and Psychological Testing: Standard 7.5



The first activity for this panel was a review of the detailed PLDs for ELA11 and Algebra II held at ADE's offices on May 13, 2015. To set the stage for this activity, an overview of AzMERIT, the detailed PLDs, and how the detailed PLDs would be used in the upcoming AzMERIT Standard Setting was provided to all 10 participants. The panel then broke out into separate ELA and math groups to first determine the college course that best fits the descriptor "credit-bearing entry level college course" for their content area. For ELA, that entry level course was determined to be Freshman Composition, while the entry level course for mathematics was determined to be College Math. While still in their subject area groups, the panelists then reviewed and discussed the skills and abilities described in the ELA11 or Algebra II detailed PLDs for students in the "Proficient" level and whether that level of skill or ability was sufficient to be prepared for entry level coursework. The consensus decision of both the ELA group and the math group was that students who had the skills and abilities described in the "Proficient" level would be adequately prepared for the target entry level course upon graduation.

Additionally, both the ELA group and the math group felt it was important to indicate that their endorsement of college readiness included the expectation that students would take one more year of high school English after the ELA 11 test and one more year of high school math after the Algebra II test. This is not an unreasonable expectation since most students would be taking the ELA11 test at the end of their third of four **required** high school English courses and would be taking the Algebra II test at the end of their third of four **required** high school mathematics courses.

The second activity for this panel was a review of the items included in the ELA11 and Algebra II test to determine which items demonstrated the skills and abilities needed for students to be adequately prepared for entry level coursework. To accommodate vacation schedules, panelists participated in this online activity individually at the time and location of their choosing in early July. This online activity included a training module followed by an item review based on a variation on the Item Descriptor Matching procedure (Ferrara, Perie, & Johnson, 2008).

Like the bookmarking procedure used to recommend performance standards for AzMERIT, the ID Matching procedure relies on an ordered item book (OIB). This book contains test items that appear in order from easiest to most difficult, based on student performance in the spring 2015 test administration. The variation of the ID Matching procedure used for this activity asked the panelists to determine whether the knowledge and skills necessary to answer each item correctly were prerequisite skills for success in entry level coursework, that is, College Math or Freshman Composition.

Higher education panelists began by reviewing the OIB following the same procedures used by the standard setting workshop panelists. Beginning with the first page in the OIB, participants answered two questions as they reviewed each item:

- What does a student need to know and be able to do to successfully respond to this item?
- Why is this item more difficult than the preceding items?

This activity was designed to focus participants on the knowledge and skills measured by each item, as well as to communicate to participants the full range of knowledge and skills measured in the assessments. Upon completion of the OIB review, participants were prepared to perform the ID Matching task.

To perform the ID Matching task, participants were asked to consider what knowledge and skills are prerequisite for success in entry level coursework at their respective institutions. Participants representing College Math performed the ID Matching task for the Algebra II OIB, while participants representing Freshman Composition performed the ID Matching task using the Grade 11 ELA OIB.

To perform the ID Matching task, participants judged whether the knowledge and skills necessary to answer the item successfully were prerequisite to success in the relevant entry level course. For each item in the OIB, participants answered “yes” or “no” that to correctly answer the item required knowledge and skills that are prerequisite for success in the entry level course.

Because items were ordered by difficulty, the expectation was that participants would generally identify two distinct regions of achievement, a lower one where items clearly were prerequisite for success in entry level college coursework, and a higher one that reflected achievement beyond what would be considered prerequisite knowledge for success in college. It was also expected that there would be a region of uncertainty between the two, with the notion that a likely college ready performance standard would lie within the region of uncertainty. When the responses of the participants were tabulated together however, there was no detectable region in the OIB where the knowledge and skills assessed by the items were reliably not prerequisite for success in entry level coursework. In other words, items considered prerequisite for college success were reliably identified across the entire range of the OIB. Therefore, it was not possible to provide the standard setting workshop panelists with a constrained region in which a college ready standard might be identified based upon the review by this panel of Arizona higher education representatives.

## **Workshop Training**

Thorough training is an essential element of a standard setting workshop. Training at the meetings helped panelists become familiar with the assessment system and the standard setting process. It also involved a review and discussion of the assessments, the student populations that participated in each, and the performance level descriptors (PLDs). In addition, training included in-depth discussion of concepts key to bookmark placement, such as the notion of what would constitute a student “just barely” in a performance level. All panelists were administered an operational test in order to understand the test content, the testing interface, and various item types through which student knowledge and skills were assessed. A

sample of the presentation slides used to conduct the introductory training, and those used to facilitate each workshop are provided in Appendix C<sup>5</sup>.

To begin the workshop, the panelists were convened for a brief introductory training that focused on the purpose of the standard setting workshop and a review of the main workshop activities. Following this large group introduction, panelists joined their assigned workshop panels where the workshop leader for each assessment guided panelists through the standard setting activities and provided in-depth training throughout the course of the workshop.

Table leaders had the additional responsibilities of ensuring that table activities remained focused on the task at hand, helping to verify that panelists understood their tasks, and alerting workshop leaders to any issues encountered by panelists as they engaged in their workshop tasks. Table leaders were not expected to provide training to panelists but rather serve as liaisons between the panelists and workshop leaders to ensure that workshop activities were implemented correctly, alerting workshop leaders to any issues that arose during the course of conducting workshop activities, and representing their tables in the cross-panel moderation deliberations. A table-leader orientation meeting was convened prior to the standard setting workshop to familiarize table leaders with their roles and responsibilities, including suggestions on how to provide leadership at the tables during the standard setting process and how to manage the secure materials.

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<sup>5</sup> Responsive to Standards for Education and Psychological Testing: Standard 7.5

## Standard Setting Materials and Procedures

### Performance Level Descriptors

Performance level descriptors (PLDs) define the content area knowledge and skills that students at each performance level are expected to demonstrate. The standard setting panelists based their judgments about the location of the performance standards on the PLDs as well as the Arizona College and Career Readiness Standards.

Prior to convening the standard setting workshops, AIR, in consultation with ADE, drafted PLDs for each test that described the range of achievement encompassed by each performance level on the test. The PLDs were designed to be clear, concrete, and reflect Arizona's expectations for proficiency based on the Arizona College and Career Ready Standards. Following a cycle of revisions to the draft PLDs, ADE invited Arizona educators to review PLDs for each of the assessments. Based on feedback from 166 educators, PLDs were further revised, and the resulting drafts were used by standard setting panelists. ADE considered any need for clarification or revision that arose throughout the standard setting process prior to publishing the final versions of the PLDs following the standard setting workshop. Performance level descriptors that were used by panelists in the standard setting workshop are presented in Appendix D.

Central to their training in the bookmark method, panelists used the PLDs to develop a representation of students who are just barely described by each of the performance level descriptors. During this training task, panelists learned that while PLDs are written to characterize typical members of each performance level, their bookmark placements would be directed toward characterizing and identifying the most minimally qualified members of each performance level. Characterizing just barely meets students is not an intuitive judgment and panelists worked to identify the minimum characteristics of student achievement for entry into each performance level. Each panel produced a just barely PLD to help guide their discussions and bookmark placements. To develop a common understanding among panelists, each panel was asked to

1. review and parse performance level descriptors;
2. discuss characteristics of students classified near thresholds of performance standards;
3. identify the characteristics that distinguish students just above the performance standard from those just below;
4. determine what evidence was necessary to conclude that a student possessed the minimum knowledge and skills needed to meet the performance standard; and
5. summarize knowledge and skills of students who "just barely" meet each performance standard, or are "just barely" described by each performance level descriptor

These discussions yielded common descriptions of students just barely characterized by each performance level descriptor within each room.

## Ordered Item Booklet

Following review of performance level descriptors and development of “just barely” performance level descriptors, panelists reviewed ordered item booklets (OIBs). An OIB is a collection of test items ordered from easiest to most difficult. Each page in the OIB corresponds to a level of achievement on the AzMERIT, and panelists use the OIB to recommend the minimum level of achievement required to enter in to each performance level.

### Composition of OIB

Within each ELA and math test, all online test takers were administered a test form with a common set of items used for operational scoring, as well as a set of embedded items used for linking or field testing. The operational test form was also administered on paper with item substitutions for a few technology-enhanced items that could not be represented on paper. The operational items administered online served as the basis for the ordered item book.

To minimize gaps in the ordered item booklets, the OIBs were augmented by additional field-test items to more fully represent the range of academic achievement encompassed within those item banks. Each math OIB was augmented with 10-21 field test items, and each ELA OIB was augmented with 7-12 field test items. All field test items selected for inclusion in the OIB were reviewed for statistical integrity; items flagged for further review due to low discrimination were excluded from the OIB. It is important to note that each OIB was augmented with respect to the assessment blueprint, which specifies the composition of each test with respect to the range of content assessed by each operational form. The augmented ELA and math OIBs were proportional to the operational test blueprints; the blueprints are presented in Appendix E<sup>6</sup>.

Increasing the number of items across the range of item difficulties provides panelists with greater context to identify important shifts in the knowledge and skill requirements of test items. Often panelists become focused on the cognitive demands of a single item when deliberating on the location of a performance standard. This propensity is exacerbated when there are relatively few items in a given location, which can cause judgment about one item to take on too much importance. Even when there are sufficient items to establish reliable performance standards for a central proficient performance standard, there are typically fewer items available in locations associated with performance standards categorizing achievement below and above proficient; thus, movement of the bookmark by even a page or two may result in very large increases or decreases in the percentage of students meeting the standard. Augmenting the OIB moderates the impact associated with each OIB page, especially for performance standards in the tails of the ability distribution.

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<sup>6</sup> Responsive to Standards for Education and Psychological Testing: Standard 7.1 and 12.4

Items were ordered according to their response probability (RP) level based on their Item Response Theory (IRT) parameters. In IRT, the item characteristic curve for each item indicates the likelihood of responding correctly for each point along the student achievement dimension. The response probability criterion refers to the location on the achievement scale that corresponds to a given probability of success. In context of the standard setting workshop, this criterion is used to develop a common understanding of what constitutes mastery when evaluating whether a student can respond successfully to an item. An RP value of 0.67 was used as the mastery criterion for all of standard setting workshops except the high school end of course assessments in math. Panelists were asked to consider whether, for example, a just barely proficient student had a 0.67 likelihood of answering the item correctly. They were also encouraged to ask this question in other related ways, including whether  $\frac{2}{3}$  of just barely proficient students would answer the item correctly, or whether a just barely proficient student would respond correctly to item two of three times. The end-of-course math tests were very difficult and the number of items on which students could demonstrate that level of mastery was quite low, resulting in a very short functional OIB. Thus, an RP value of 0.50 was adopted for the EOC math tests, meaning that a just barely proficient student, for example, had a 0.50 likelihood of responding correctly, or that  $\frac{1}{2}$  of just barely students could respond successfully to an item, or that a just barely student could respond successfully to the item at least one of two times.

Dichotomously scored (e.g., incorrect vs. correct) AzMERIT items were calibrated using the Rasch model. Multi-point, partial credit items were calibrated using Masters' partial credit model with ordering of score point pages in the OIB based on step-level difficulties.

The ordered item booklets were presented online, allowing panelists to view items in the same context as student test takers. The composition of the ELA and math ordered item booklets by assessment and grade are summarized in Table 3 below. A technical summary of the OIBs are presented in Appendix F, including for each page in the OIB, the item score point associated with the presented item, the difficulty represented by the page, and the standard error of the difficulty. In addition, the appendix indicates the overall percent of students who would score at or above the standard associated with each OIB page, and the location of external benchmarks within the booklet.

**Table 3. Composition of Ordered Item Booklets**

Test	Number of Items In OIB			Pages in OIB (Total Points)
	Operational	Field Test	Total	
ELA 3	42	9	51	67
ELA 4	42	8	50	67
ELA 5	42	10	52	68
ELA 6	42	7	49	68
ELA 7	42	10	52	68
ELA 8	42	12	54	71
ELA 9	44	11	55	69

Test	Number of Items In OIB			Pages in OIB (Total Points)
	Operational	Field Test	Total	
ELA 10	44	9	53	68
ELA 11	44	9	53	67
Math 3	45	13	58	58
Math 4	45	19	65	66
Math 5	45	20	65	66
Math 6	47	10	57	57
Math 7	47	14	61	61
Math 8	47	18	65	70
Algebra I	47	21	68	70
Geometry	47	15	62	66
Algebra II	47	15	62	66

### Review of Ordered Item Booklets

For each item in the OIB, panelists were instructed to ask what a student must know and be able to do to answer each question and what makes each item in the OIB more difficult than the preceding item. This review of the OIB allowed panelists to gain new perspectives on the knowledge and skill requirements of items and to share information regarding their thoughts on the location of the threshold region. During this discussion, the workshop leader circulated through the room to monitor progress, to assist panelists who might have had trouble with the task, and to answer any questions.

On each page in the OIB, panelists viewed the content of the item, the associated passage, content alignment, and the scoring key or rubric. In addition, for each page that presented a writing item, ELA panelists were provided a sample student essay response that scored at the particular score point.

Panelists were initially provided an item map to use while navigating the OIB, which included passage and content alignment information for each page in the OIB. In addition, panelists were presented with an item plot that displayed a graphical representation of the difficulty of each page in the OIB; this tool showed where page item difficulties were clustered together versus spread out. OIB item plots are presented in Appendix G.

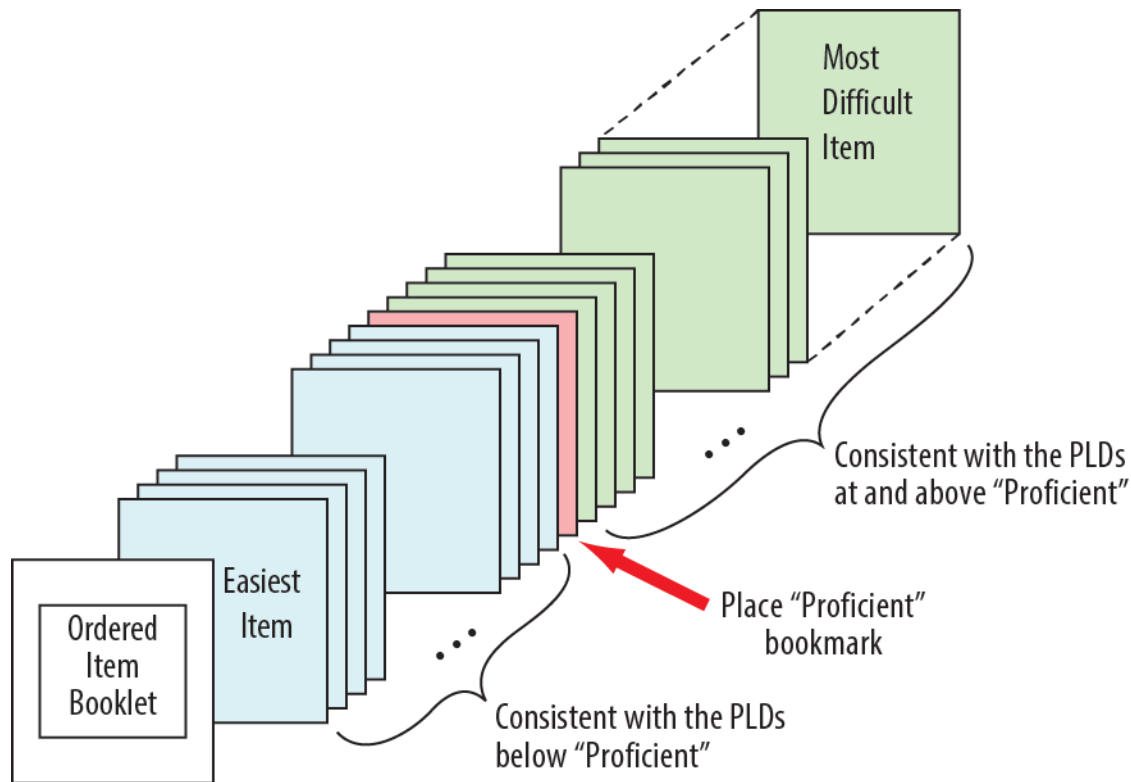
### AzMERIT Bookmark Placement

Prior to making their Round 1 bookmark placements, panelists were provided training in the identification of performance standards in the ordered item booklets. As part of this training, panelists learned to identify a location in the OIB that best delineates two performance levels (e.g., between pages on which students must demonstrate mastery to meet the minimum requirements for membership in the Partially Proficient level from those items on which demonstration of mastery is not necessary).

Using their just barely PLDs as a guide, the panelists were then instructed to set a bookmark on the item that best delineated each of the performance levels. Panelists were reminded how to set bookmarks, and prior to making initial placements, facilitators led a group activity that reviewed the key concepts of the bookmark procedure, allowing facilitators to provide additional training if necessary. Prior to placing recommended performance standards in each round, panelists were asked to complete a readiness form to indicate their preparedness to recommend performance standards. This form asked panelists to assert their understanding of the tools used to recommend performance standards in each round. If a panelist indicates that they do not feel prepared to recommend performance standards, the workshop leader provides additional training and opportunities for discussion. All panelists had to indicate that they felt prepared to move forward before they recommended a cut. All AzMERIT standard setting panelists indicated they understood the task at hand and felt ready to recommend performance standards. Samples of readiness forms used for completing the bookmark task are presented in Appendix H.

Bookmark placement was conducted in two rounds, allowing panelists to make independent judgments while still benefiting from discussion with their fellow panelists. Panelists were instructed to identify their recommended cuts for Proficient, Partially Proficient, and Highly Proficient in each round. The placement of the bookmark is illustrated in Figure 1. Each panelist used their just barely PLDs to identify which item represented the lower bound of each performance level. In the example, a panelist concluded that students who were just barely at the “Proficient” level would demonstrate mastery on the item on the page indicated by the arrow, while students below the “Proficient” level would not. Therefore, the panelist decided that the Proficient performance level would begin on the page indicated by an arrow. The panelist believed that students below the “Proficient” performance level would not be able to demonstrate mastery of items beyond the indicated page in the ordered-item booklet.





**Figure 1. Example of Bookmark Placement**

## Benchmark Information

Panelists were charged to recommend performance standards comparable to other important assessment systems, including national and international benchmarks such as NAEP, other statewide assessments, and college entry exams. To facilitate comparisons of Arizona performance standards with other national and international benchmarks, panelists were provided with the locations of performance standards from these other assessments systems in their OIBs. In particular, performance standard locations for the following assessments were provided as part of panelists' OIB review:

- Smarter Balanced ELA and math performance standards in grades 3-8 and 11/Algebra II,
- PISA performance standards in grade 10 ELA and Geometry,
- NAEP performance standards in reading and math in grades 4 and 8 (and interpolated for grade 6),
- ACT college ready performance standard in grade 11 ELA and Algebra II, and
- Arizona's previous AIMS assessment.

## Panelist Feedback and Impact Data

Prior to Round 2, panelists were provided feedback about the bookmark placements made by fellow panelists. After making their Round 1 bookmark placements, panelists reconvened and began with a discussion of panelist feedback about the bookmark locations recommended by each panelist, beginning with table level feedback and discussion, and progressing to room level discussion. Each table spent time reviewing and discussing cut score placements, focusing on the lowest and highest recommended performance standards both at the table and across the panel. Panelists were asked to review the items between the lowest and highest performance standards at their table, discussing the standards and the just barely PLDs. Discussion was then expanded to the room level, with each table reviewing the basis for their own recommendations for the group at large.

Following discussion of panelist feedback, panelists were presented with impact data, the percentage of students expected to score at or above the recommended Round 1 performance standards. Panelists discussed any implications of the impact data, both at their tables and across the panel more generally, focusing on whether the impact was in line with their expectations. Following presentation of impact data, panelists were provided, for each item in the OIB, the percentage of students expected to achieve the ability level indexed by that page.

After completing their discussions, panelists again worked through the OIB, placing their Round 2 bookmarks for all three performance levels, beginning with Proficient and followed by Partially Proficient and Highly Proficient.

## Estimating Student Performance Data

While the AzMERIT OIBs were constructed based on calibration of the online testing population, the percentage of students within the state who meet or exceed each potential performance standard (i.e., each page in the ordered item booklet) was estimated based on all students participating in the first operational administration of the assessment, including students who tested online and students who tested on paper.

A matched samples approach was used to estimate the effects of mode on student performance. Previous year student achievement results, as well as demographic information, including gender, ethnicity, income level status, English language learner (ELL) status, Individualized Education Program (IEP), were used to identify matched samples for the mode comparability analyses.

With matched samples in hand, item parameters were calibrated separately for the matched samples of paper and online test administrations, and the linking constants necessary to bring the paper item parameters onto the online reference scale were identified. The mode linking constants were uniformly quite small, indicating virtually no effect of test administration mode on student performance. Nevertheless, for the purpose of estimating student impact for the standard setting workshop, the mode linking constants were applied to the paper item parameters to estimate student ability for paper test administrations. Thus, the percentage of

students estimated to meet or exceed each potential performance standard on the AzMERIT was based on all students who participated in the operational assessment. A summary of the mode comparability study is presented in Appendix I<sup>7</sup>.

Prior to Round 2 of the Bookmark procedure, the percentage of students meeting the standards, based on the Round 1 median cut score, was presented to panelists.

## Vertical Articulation

Performance standards should ideally be well-articulated across grades. Unless there are systemic differences in the quality of instruction across grades, the expectation is that students who meet the standards and are prepared for instruction in the subsequent grade will likely continue to meet standards as they progress through their school years, and that therefore we would not expect to see large changes in the proficiency rates from grade to grade. While this vertical articulation is incorporated into the development of the Arizona College and Career Ready Standards as well as the test specifications for each of the AzMERIT assessments, maintaining and reinforcing the cross-grade articulation in the setting of meaningful performance standards is important, especially for ELA and math, where students are assessed annually. Lack of articulation in these subjects can result in confusion, especially when there are unreasonably large shifts in student performance-level classifications from grade to grade.

Articulation was considered from two perspectives: the percent of students meeting standards across grades and courses, and the location of the performance standards on the vertically linked AzMERIT scale, which allowed panelists to evaluate their recommended performance standards with respect to expected student growth from grade to grade. A description of the procedures used to yield the AzMERIT vertical scale is presented in Appendix J.

To help foster consistency in the identification of performance standards across grades, after performance standards were recommended for the initial grade level in each grade band, table leaders were convened to participate in a vertical moderation session. Table leaders were shown the percentage of students scoring at or above each of the performance standards, and the percent of students classified at each performance level across tests. Where the percentage of students expected to meet standards varied greatly between grade- or course-based assessments, table leaders were asked to consider modifications to the recommended standards that would achieve a more articulated system of standards. In these instances, table leaders reviewed the ordered item booklets and considered whether the content of the OIB supported the adjustment. Thus, while table leaders worked to articulate standards across grades, they also ensured that any changes resulting from the moderation meeting be consistent with the knowledge and skills described in the PLDs.

With anchor grade performance standards in hand, AIR evaluated both impact data from each grade level assessment, as well as student ability estimates from the vertically linked AzMERIT

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<sup>7</sup> Responsive to Standards for Education and Psychological Testing: Standard 3.0, 3.5, 3.6, 3.8, 3.15, 5.7, 5.12, 5.13, 5.14, 5.15, 12.3, 12.17, and 13.6

scale, to interpolate the likely location of each performance standard for each of the remaining grade level and EOC assessments.

To recommend performance standards in these non-anchor grade assessments, the standard bookmark procedures were modified so that panelists were instructed to determine whether the just barely PLDs supported the placement of a specific bookmark on the interpolated page. If the PLDs did not support the placement of the bookmark on the interpolated page, then panelists were asked whether they could identify a bookmark placement near the interpolated page that would be supported by the PLDs. Panelists were instructed that their bookmark placements must be guided by content considerations, whether they recommended the interpolated page in the OIB or a different bookmark placement. Otherwise, bookmark placements proceeded as with the anchor grade rounds. Following Round 1 bookmark placements, panelists received feedback about the bookmark placements of panelists at their table, and for the room as a whole and impact data.

A final moderation session was conducted following the completion of workshop activities for the interpolated grades. This final moderation activity ensured that table leaders had an opportunity to review the entire system of recommended standards and to make any desired adjustments prior to completion of the workshop. As with the initial moderation session, in those instances where table leaders chose to adjust a performance standard during the final moderation session, they reviewed their ordered-item booklets to ensure that the adjustments had a basis in test content.

The advantage of this approach is that it results in a system of performance standards that are more consistent across grade levels. At the most basic level, it ensures that there are not wide fluctuations in the proportion of students meeting each performance standard across grades. Cross grade articulation informed by the vertical scale also ensures that there are no reversals in recommended performance standards across grades.

## **Workshop Evaluation**

Panelists were encouraged to provide feedback concerning the procedures and outcomes of the standard setting workshop throughout the process, via group discussions, practice activities, and completion of readiness forms prior to placing their bookmarks.

At the completion of the workshop, panelists were asked to complete a workshop evaluation form designed to elicit feedback on all aspects of the workshop, including clarity of training and tasks, appropriateness of the time spent on activities, and satisfaction with the outcome of the workshop. Samples of the evaluation forms are presented in Appendix K.

## Recommended Performance Standards and Impact Data

For the AzMERIT in ELA and math, Appendix L presents the minimum, maximum, and median bookmark placement for each round of bookmark placements, as well as any bookmarks placed during Moderation sessions, and resulting final recommendations following the standard setting workshops. As panelists discussed the reasons for their bookmark placements in the context of feedback from other panelists and impact data, variability across tables often decreased across rounds. The figures in Appendix M, Convergence of Bookmarks across Rounds, illustrate variability in median table bookmark placements for the three performance standards over the two rounds. These figures illustrate how variability in bookmark decisions changed from the first to the second round. In general, there was considerable consistency in the placement of performance standards across rounds.

For each test, final recommended performance standard is the outcome from the final moderation, or in the absence of moderation, the median bookmark page following Round 2.

The final recommended performance standards for each assessment, grade, and performance standard are presented in Table 4, along with the projected impact each performance standard would have on Arizona public school students tested in 2015. The final recommended OIB page numbers are the median bookmarks of each panel following Round 2 bookmark placement, and subsequent moderation.

**Table 4. Final Recommended Performance Standards for AzMERIT**

<b>Test</b>	<b>Performance Level</b>	<b>Ordered Item Booklet Page</b>	<b>Theta</b>	<b>Estimated Percentage of Students At or Above Performance Standard</b>
Grade 3 ELA	Partially Proficient	18	-0.09	56
	Proficient	25	0.29	41
	Highly Proficient	49	1.36	10
Grade 4 ELA	Partially Proficient	19	0.14	57
	Proficient	32	0.60	39
	Highly Proficient	57	1.80	5
Grade 5 ELA	Partially Proficient	15	-0.13	63
	Proficient	32	0.63	30
	Highly Proficient	53	1.80	3
Grade 6 ELA	Partially Proficient	16	-0.12	61
	Proficient	30	0.58	34
	Highly Proficient	58	2.03	4
Grade 7 ELA	Partially Proficient	18	-0.02	59
	Proficient	36	0.61	33
	Highly Proficient	61	1.90	4
Grade 8 ELA	Partially Proficient	19	-0.06	60
	Proficient	38	0.64	33
	Highly Proficient	62	1.72	6
Grade 9 ELA	Partially Proficient	17	-0.12	53
	Proficient	32	0.59	27
	Highly Proficient	56	1.57	6
Grade 10 ELA	Partially Proficient	13	0.11	51
	Proficient	32	0.58	30
	Highly Proficient	59	1.42	8
Grade 11 ELA	Partially Proficient	13	-0.02	46
	Proficient	29	0.52	26
	Highly Proficient	52	1.27	8
Grade 3 Math	Partially Proficient	10	-0.16	73
	Proficient	33	1.04	42
	Highly Proficient	52	2.43	15
Grade 4 Math	Partially Proficient	10	-0.31	71
	Proficient	35	0.76	42
	Highly Proficient	58	2.20	10
Grade 5 Math	Partially Proficient	4	-0.65	71
	Proficient	27	0.41	40
	Highly Proficient	52	1.74	13

Test	Performance Level	Ordered Item Booklet Page	Theta	Estimated Percentage of Students At or Above Performance Standard
Grade 6 Math	Partially Proficient	9	-0.48	62
	Proficient	26	0.41	32
	Highly Proficient	46	1.55	11
Grade 7 Math	Partially Proficient	11	-0.19	52
	Proficient	30	0.59	30
	Highly Proficient	46	1.51	13
Grade 8 Math	Partially Proficient	15	-0.69	57
	Proficient	29	0.09	32
	Highly Proficient	47	1.15	13
Algebra I	Partially Proficient	17	-0.69	55
	Proficient	33	-0.03	32
	Highly Proficient	56	1.27	9
Geometry	Partially Proficient	16	-1.37	53
	Proficient	30	-0.58	30
	Highly Proficient	52	0.96	6
Algebra II	Partially Proficient	15	-1.49	53
	Proficient	29	-0.78	29
	Highly Proficient	49	0.57	6

Note: Following the standard setting workshop, recommendations are submitted to Arizona's State Board of Education. Performance standards are not final prior to approval and adoption by the Board.

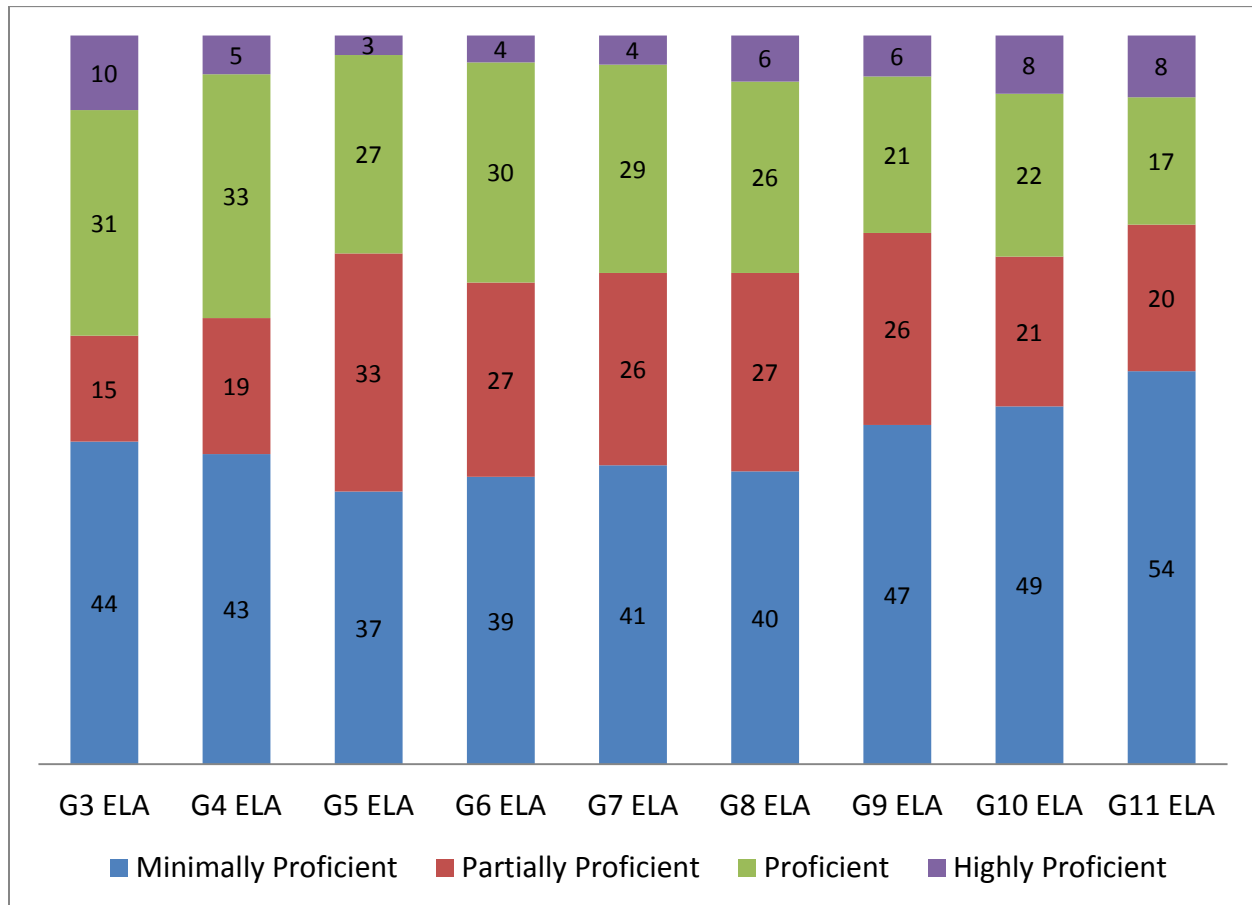
Table 5 shows the estimated percentage of student classified at each performance level based on final panelist-recommended standards for the student population overall across grade levels and courses for the ELA and math assessments. The results of Table 5 are represented graphically in Figure 2, for ELA, and Figure 3 for math. Appendix N presents the estimated percentage of students classified at each performance level disaggregated by gender and ethnicity.

**Table 5. Percentage of Students at Each Performance Level based on Final Recommended Performance Standards**

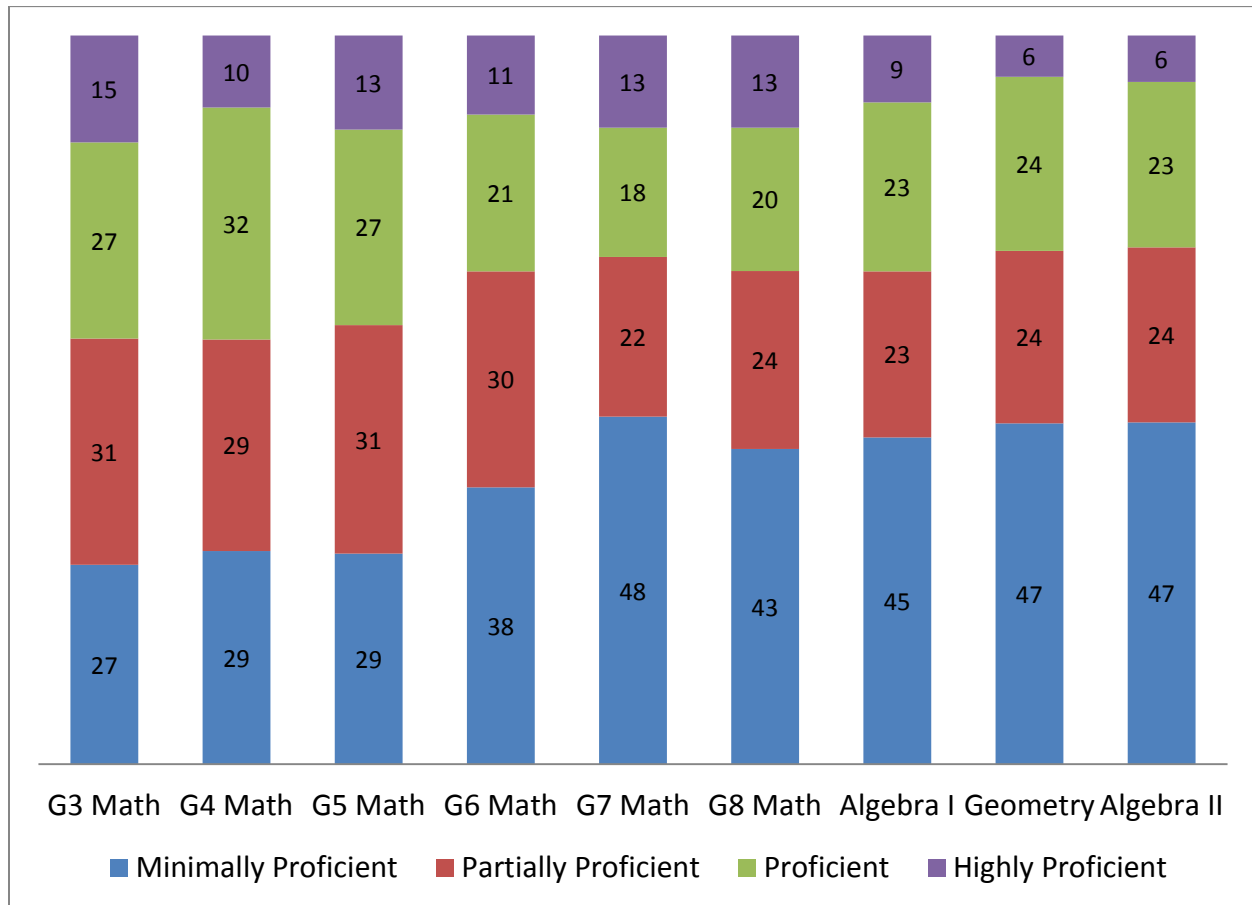
Test	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>ELA</b>				
Grade 3 ELA	44%	15%	31%	10%
Grade 4 ELA	43%	19%	33%	5%
Grade 5 ELA	37%	33%	27%	3%
Grade 6 ELA	39%	27%	30%	4%
Grade 7 ELA	41%	26%	29%	4%
Grade 8 ELA	40%	27%	26%	6%
Grade 9 ELA	47%	26%	21%	6%
Grade 10 ELA	49%	21%	22%	8%
Grade 11 ELA	54%	20%	17%	8%
<b>Math</b>				
Grade 3 Math	27%	31%	27%	15%
Grade 4 Math	29%	29%	32%	10%
Grade 5 Math	29%	31%	27%	13%
Grade 6 Math	38%	30%	21%	11%
Grade 7 Math	48%	22%	18%	13%
Grade 8 Math	43%	24%	20%	13%
Algebra I	45%	23%	23%	9%
Geometry	47%	24%	24%	6%
Algebra II	47%	24%	23%	6%



**Figure 2. Percentage of Students at Each Performance Level based on Final Recommended Performance Standards—AzMERIT ELA**



**Figure 3. Percentage of Students at Each Performance Level based on Final Recommended Performance Standards—AzMERIT Math**



ADE intends to report student performance on the on the vertically linked AzMERIT scale. Because ability estimates of extremely low and high scoring students are less precise, test scores for very low and high performing students will be more prone to fluctuate over time. To minimize scale score instability for very low and high scoring students, ability estimates will be truncated at +3.5 on the within grade scale before being transformed to the vertically linked scale.

Student ability estimates will then be transformed from the vertically linked Rasch theta scale to the subject specific AzMERIT reporting scale:

$$ELA \text{ Scale Score} = 2500 + (30 * \theta)$$

$$Math \text{ Scale Score} = 3500 + (30 * \theta)$$

Applying the AzMERIT scale score transformations to the performance standards recommended by the workshop panels results in the system of scale score ranges for each of the AzMERIT performance level classifications identified in Table 6.

**Table 6. AzMERIT Scale Score Ranges Based on Final Recommended Performance Standards**

Test	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>ELA</b>				
Grade 3 ELA	2395-2496	2497-2508	2509-2540	2541-2605
Grade 4 ELA	2400-2509	2510-2522	2523-2558	2559-2610
Grade 5 ELA	2419-2519	2520-2542	2543-2577	2578-2629
Grade 6 ELA	2431-2531	2532-2552	2553-2596	2597-2641
Grade 7 ELA	2438-2542	2543-2560	2561-2599	2600-2648
Grade 8 ELA	2448-2550	2551-2571	2572-2603	2604-2658
Grade 9 ELA	2454-2554	2555-2576	2577-2605	2606-2664
Grade 10 ELA	2458-2566	2567-2580	2581-2605	2606-2668
Grade 11 ELA	2465-2568	2569-2584	2585-2607	2608-2675
<b>Math</b>				
Grade 3 Math	3395-3494	3495-3530	3531-3572	3573-3605
Grade 4 Math	3435-3529	3530-3561	3562-3605	3606-3645
Grade 5 Math	3478-3562	3563-3594	3595-3634	3635-3688
Grade 6 Math	3512-3601	3602-3628	3629-3662	3663-3722
Grade 7 Math	3529-3628	3629-3651	3652-3679	3680-3739
Grade 8 Math	3566-3649	3650-3672	3673-3704	3705-3776
Algebra I	3577-3660	3661-3680	3681-3719	3720-3787
Geometry	3609-3672	3673-3696	3697-3742	3743-3819
Algebra II	3629-3689	3690-3710	3711-3750	3751-3839

## Evaluation of the Standard Setting Workshop

### Panelist Evaluation of Standard Setting Workshop

Following the completion of standard setting tasks, panelists were asked to evaluate different aspects of the workshop, and the resulting recommendations. At the end of the workshop, all but one panelist indicated that training on the main components and tools of the bookmark procedure was adequate, and that they understood how to use each component.

Generally, panelists indicated that the amount of time allotted for different activities within the standard setting workshop was “about right.” Overall, panelists expressed general satisfaction with the workshop and offered suggestions for improving the experience in future meetings.

Across all panels, all but one participant indicated they agreed that students classified at each performance level are fairly classified into each of the performance level classifications based on the knowledge and skills described in the Arizona College and Career Ready Standards, as summarized in Table 7. Appendix O shows panelists’ responses to the evaluation forms.

**Table 7. Summary of Panelist Evaluation of Recommended Performance Standards**

Workshop Evaluation Question	Strongly Disagree	Disagree	Agree	Strongly Agree
I am confident that students classified as <b>Proficient</b> demonstrate a fundamental understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona’s College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 3)	1	0	35	44
I am confident that students classified as <b>Partially Proficient</b> demonstrate a partial understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona’s College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 2)	1	0	34	45
I am confident that students classified as <b>Highly Proficient</b> demonstrate an advanced understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona’s College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 4)	1	0	30	49

## **Independent Observer Review of Standard Setting Workshop**

ADE invited members of the State Board of Education to attend and observe the standard setting workshop. Three district observers attended and submitted a report to the State Board of Education describing their experience at the workshop; the report was produced independently without input or review from ADE. The report is presented in Appendix P.

## Adoption of Final Performance Standards

On August 14, 2015, the Arizona State Board of Education adopted the panelist-recommended performance standards. Appendix Q presents the meeting agenda, executive summary describing the standard setting procedures and results, and summary of board action pertaining to adoption of the performance standards.

## References

- Ferrara, S., Perie, M., & Johnson, E. (2008). Matching the judgmental task with standard setting panelist expertise: The Item-Descriptor (ID) Matching procedure. *Journal of Applied Testing Technology*, 9(1).
- McLaughlin, D., Scarloss, B. A., Stancavage, F. B., & Blankenship, C. D. (2005). *Using State Assessments to Impute Achievement of Students Absent from NAEP: An Empirical Study in Four States*. Washington, DC: American Institutes for Research. Retrieved from [www.air.org/files/McLaughlin\\_AbsentStudents.pdf](http://www.air.org/files/McLaughlin_AbsentStudents.pdf)
- Mitzel, H. C., Lewis, D. M., Patz, R. J., & Green, D. R. (2001). The Bookmark procedure: Psychological perspectives. In G. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives*. Mahwah, NJ: Erlba

## **Appendix A – Workshop Agendas**



## Document A1. AzMERIT Mathematics & ELA Grades 3-8 Standard Setting Agenda July 14 - 16, 2015

### (Grade 3-8 Panels)

#### Tuesday, July 14, 2015

7:30 – 8:00	Orientation for Table Leaders
7:30 – 8:00	Registration and morning refreshments <ul style="list-style-type: none"> <li>• <i>Panelists receive folders, sign security affidavit</i></li> </ul>
8:00 – 8:15	Welcome and introductions from Arizona Department of Education
8:15 – 9:30	Large group introductory training <ul style="list-style-type: none"> <li>• <i>Welcome and introductions</i></li> <li>• <i>Purpose of standard setting workshop</i></li> <li>• <i>Description of the AzMERIT test design</i></li> <li>• <i>General overview of standard setting procedures and key concepts</i> <ul style="list-style-type: none"> <li>○ <i>Proficiency Level Descriptors</i></li> <li>○ <i>“Just Barely”</i></li> <li>○ <i>Ordered Item Book</i></li> <li>○ <i>Mastery</i></li> <li>○ <i>Bookmark task</i></li> <li>○ <i>Benchmark Information</i></li> <li>○ <i>Panelist feedback and impact data</i></li> </ul> </li> </ul>
9:30 – 9:45	Break, and separate into small group rooms
9:45 – 10:00	Introductions within panel
10:00 – 11:00	Participate in AzMERIT assessment
11:00 – 12:00	Review Performance Level Descriptors and develop Just Barely PLDs – Grades 4, 6, and 8
12:00 – 1:00	Lunch
1:00 – 2:30	Review PLDs and develop Just Barely PLDs – Grades 4, 6, and 8 (continued)
2:30 – 2:45	Break
2:45 – 4:45	Review of Ordered Item Book – Grades 4, 6, and 8 <ul style="list-style-type: none"> <li>• <i>Training on review of the OIB</i> <ul style="list-style-type: none"> <li>○ <i>What do students need to know and be able to do to respond correctly to each question?</i></li> <li>○ <i>Why is each item more difficult than the preceding item?</i></li> </ul> </li> <li>• <i>Individual review of the OIB</i></li> <li>• <i>Discuss areas of transition and skills with tables</i></li> </ul>
4:45	Adjourn

#### Wednesday, July 15, 2015

7:30 – 8:00	Registration and morning refreshments
8:00 – 9:00	Training on Bookmark Placement task

**(Grade 3-8 Panels)**

	<ul style="list-style-type: none"> <li>• <i>Review of Bookmark Placement key concepts</i> <ul style="list-style-type: none"> <li>○ <i>Proficiency Level Descriptors</i></li> <li>○ <i>Ordered Item Book</i></li> </ul> </li> <li>• <i>Training on mastery and 2/3 likelihood</i></li> <li>• <i>Training on bookmark placement judgment task, and procedure for recording bookmarks</i></li> </ul>
9:00 – 10:15	<p>Round 1 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – Grades 4, 6, and 8</p> <ul style="list-style-type: none"> <li>• <i>Review of bookmark procedures and key concepts</i></li> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
10:15 – 10:30	Panelist Break, and concurrent production of feedback data
10:30 – 11:30	<p>Review results of Round 1 – Grades 4, 6, and 8</p> <ul style="list-style-type: none"> <li>• <i>Presentation and discussion of Round 1 panelist agreement feedback data</i></li> <li>• <i>Review agreement feedback data</i></li> <li>• <i>Discussion of percent of students achieving the Round 1 recommended standards</i></li> </ul>
11:30 – 12:30	Lunch
12:30 – 1:30	<p>Round 2 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – Grades 4, 6, and 8</p> <ul style="list-style-type: none"> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
1:30 – 3:30	Review Performance Level Descriptors and develop Just Barely PLDs – Grades 3, 5, and 7
3:30 – 3:45	Break
3:45 – 4:45	<p>Anchor Grade Moderation</p> <p><i>*Table leaders required to participate, all panelists invited to attend</i></p>
4:45	Adjourn

**Thursday, July 16, 2015**

7:30 – 8:00	Registration and morning refreshments
8:00 – 10:00	Review of Ordered Item Booklet – Grades 3, 5, and 7
10:00 – 10:15	Panelist Break
10:15 – 10:45	Review Results of anchor grade vertical moderation

**(Grade 3-8 Panels)**

10:45 – 12:00	Round 1 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – Grades 3, 5, and 7 <ul style="list-style-type: none"><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Review OIB and place each bookmark</i><ul style="list-style-type: none"><li>○ Proficient</li><li>○ Partially Proficient</li><li>○ Highly Proficient</li></ul></li></ul>
12:00 – 1:00	Lunch
1:00 – 2:00	Review results of Round 1 – Grades 3, 5, and 7
2:00 – 3:00	Round 2 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – Grades 3, 5, and 7 <ul style="list-style-type: none"><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Review OIB and place each bookmark</i><ul style="list-style-type: none"><li>○ Proficient</li><li>○ Partially Proficient</li><li>○ Highly Proficient</li></ul></li></ul>
3:00 – 3:30	Complete workshop evaluation forms
3:30 – 4:30	Final vertical moderation (if needed) <i>*Table leaders required to participate, all panelists invited to attend</i>

## Document A2. AzMERIT Mathematics & ELA EOC Standard Setting Agenda July 13 - 16, 2015

### High School Panels

#### Monday, July 13, 2015

7:30 – 8:00	Orientation for Table Leaders
7:30 – 8:00	Registration and morning refreshments <ul style="list-style-type: none"> <li>• <i>Panelists receive folders, sign security affidavit</i></li> </ul>
8:00 – 8:15	Welcome and introductions from Arizona Department of Education
8:15 – 9:30	Large group introductory training <ul style="list-style-type: none"> <li>• <i>Welcome and introductions</i></li> <li>• <i>Purpose of standard setting workshop</i></li> <li>• <i>Description of the AzMERIT test design</i></li> <li>• <i>General overview of standard setting procedures and key concepts</i> <ul style="list-style-type: none"> <li>○ <i>Proficiency Level Descriptors</i></li> <li>○ <i>“Just Barely”</i></li> <li>○ <i>Ordered Item Book</i></li> <li>○ <i>Mastery</i></li> <li>○ <i>Bookmark task</i></li> <li>○ <i>Benchmark Information</i></li> <li>○ <i>Panelist feedback and impact data</i></li> </ul> </li> </ul>
9:30 – 9:45	Break, and separate into small group rooms
9:45 – 10:00	Introductions within panel
10:00 – 11:00	Participate in AzMERIT assessment – ELA 11/ Algebra II
11:00 – 12:00	Review Performance Level Descriptors and develop Just Barely PLDs – ELA 11/ Algebra II
12:00 – 1:00	Lunch
1:00 – 2:30	Review PLDs and develop Just Barely PLDs – Algebra ELA/11 II (continued)
2:30 – 2:45	Break
2:45 – 4:45	Review of Ordered Item Book – ELA 11/ Algebra II <ul style="list-style-type: none"> <li>• <i>Training on review of the OIB</i> <ul style="list-style-type: none"> <li>○ <i>What do students need to know and be able to do to respond correctly to each question?</i></li> <li>○ <i>Why is each item more difficult than the preceding item?</i></li> </ul> </li> <li>• <i>Individual review of the OIB</i></li> <li>• <i>Discuss areas of transition and skills with tables</i></li> </ul>
4:45	Adjourn

#### Tuesday, July 14, 2015

7:30 – 8:00	Registration and morning refreshments
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### High School Panels

8:00 – 9:00	Training on Bookmark Placement task <ul style="list-style-type: none"> <li>• <i>Review of Bookmark Placement key concepts</i> <ul style="list-style-type: none"> <li>○ <i>Proficiency Level Descriptors</i></li> <li>○ <i>Ordered Item Book</i></li> </ul> </li> <li>• <i>Training on mastery and 2/3 likelihood</i></li> <li>• <i>Training on bookmark placement judgment task, and procedure for recording bookmarks</i></li> </ul>
9:00 – 10:15	Round 1 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 11/ Algebra II <ul style="list-style-type: none"> <li>• <i>Review of bookmark procedures and key concepts</i></li> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
10:15 – 10:30	Panelist Break, and concurrent production of feedback data
10:30 – 11:30	Review results of Round 1 – ELA 11/ Algebra II <ul style="list-style-type: none"> <li>• <i>Presentation and discussion of Round 1 panelist agreement feedback data</i></li> <li>• <i>Review agreement feedback data</i></li> <li>• <i>Discussion of percent of students achieving the Round 1 recommended standards</i></li> </ul>
11:30 – 12:30	Lunch
12:30 – 1:30	Round 2 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 11/ Algebra II <ul style="list-style-type: none"> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
1:30 – 3:30	Review Performance Level Descriptors and develop Just Barely PLDs – ELA 10/ Geometry
3:30 – 3:45	Break
3:45 – 4:45	Begin Review of Ordered Item Booklet – ELA 10/ Geometry
4:45	Adjourn

### Wednesday, July 15, 2015

7:30 – 8:00	Registration and morning refreshments
8:00 – 9:00	Complete OIB Review – ELA 10/ Geometry
9:00 – 10:15	Round 1 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 10/ Geometry

### High School Panels

	<ul style="list-style-type: none"> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
10:15 – 10:30	Panelist Break
10:30 – 11:30	Review results of Round 1 – ELA 10/ Geometry <ul style="list-style-type: none"> <li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li> <li>• <i>Review agreement feedback data</i></li> <li>• <i>Discussion of percent of students achieving the Round 1 recommended standards</i></li> </ul>
11:30 – 12:30	Lunch
12:30 – 1:30	Round 2 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 10/ Geometry <ul style="list-style-type: none"> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
1:30 – 3:30	Review Performance Level Descriptors and develop Just Barely PLDs – ELA 9/ Algebra I
3:30 – 3:45	Break
3:45 – 4:45	Anchor grade vertical moderation <i>*Table leaders required to participate, all panelists invited to attend</i>
4:45	Adjourn

### Thursday, July 16, 2015

7:30 – 8:00	Registration and morning refreshments
8:00 – 10:00	Review of Ordered Item Booklet – ELA 9/ Algebra I
10:00 – 10:15	Panelist Break
10:15 – 10:45	Review results of anchor grade vertical moderation
10:45 – 12:00	Round 1 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 9/ Algebra I <ul style="list-style-type: none"> <li>• <i>Completion of Bookmark Placement Readiness Form</i></li> <li>• <i>Review OIB and place each bookmark</i> <ul style="list-style-type: none"> <li>○ Proficient</li> <li>○ Partially Proficient</li> <li>○ Highly Proficient</li> </ul> </li> </ul>
12:00 – 1:00	Lunch

**High School Panels**

- |             |   |
|-------------|---|
| 1:00 – 2:00 | Review results of Round 1 – ELA 9/ Algebra I  |
| 2:00 – 3:00 | Round 2 bookmark placement for Proficient, Partially Proficient, and Highly Proficient – ELA 9/ Algebra I <ul style="list-style-type: none"><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Review OIB and place each bookmark</i><ul style="list-style-type: none"><li>○ Proficient</li><li>○ Partially Proficient</li><li>○ Highly Proficient</li></ul></li></ul> |
| 3:00 – 3:30 | Complete workshop evaluation forms  |
| 3:30 – 4:30 | Final vertical moderation (if needed)<br><i>*Table leaders required to participate, all panelists invited to attend</i>   |

## **Appendix B – Composition of Panels**



Table B1. Composition of ELA Grades 3-4 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Rural	Arizona Navajo Central	Male	Native American	Elementary Education	3
1	n/a	Urbanized	Peoria Unified School District	Female	Asian	Elementary Education	3
1	n/a	Urbanized	CAFA INC. Learning Foundation and Performing Arts	Female	White, non-Hispanic	Secondary Education	3
2	Yes	Rural	Legacy Traditional Schools and Athlos Traditional Academy	Female	Hispanic or Latino	Elementary, Administrative - Principal, Superintendent	4
2	n/a	Urbanized	Maricopa County Education Service Agency	Female	Hispanic or Latino	Elementary, Secondary	4
2	n/a	Urban Clusters	J.O. Combs Unified School District	Female	White, non-Hispanic	Elementary Education	6
2	n/a	Urbanized	Madison Elementary District	Female	White, non-Hispanic	Elementary Education	4
3	Yes	Urbanized	Washington Elementary School District	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	3
3	n/a	Urbanized	CAFA, Inc. dba Learning Foundation Performing Arts School	Female	Hispanic or Latino	Elementary Education	4
3	n/a	Suburban	Deer Valley Unified District	Female	White, non-Hispanic	Elementary, Administrative	3

Table B2. Composition of ELA Grades 5-6 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urban Clusters	Mesa Unified District	Female	Black	Elementary Education	5
1	n/a	Rural	Superior Unified School District	Female	White, non-Hispanic	Elementary, Secondary	5
1	n/a	Suburban	Mesa Unified District	Female	White, non-Hispanic	Elementary Education	6
2	Yes	Urban Clusters	Mayer Unified School District	Female	White, non-Hispanic	Elementary Education	5
2	n/a	Urbanized	Liberty Elementary District	Female	White, non-Hispanic	Elementary Education	5
2	n/a	Urbanized	Chandler Unified District	Female	White, non-Hispanic	Elementary and Special Education	6
3	Yes	Urbanized	Paradise Valley Unified District	Female	White, non-Hispanic	Elementary and Special Education	6
3	n/a	Urbanized	Avondale Elementary District	Female	White, non-Hispanic	Elementary Education	5
3	n/a	Urbanized	Peoria Unified School District	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	6

Table B3. Composition of ELA Grades 7-8 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Suburban	Peoria Unified School District	Female	White, non-Hispanic	Elementary Education	7
1	n/a	Urbanized	Alhambra Elementary District	Female	White, non-Hispanic	Administrative - Principal, Superintendent	8
1	n/a	Urban Clusters	J.O. Combs Unified School District	Male	White, non-Hispanic	Secondary, Administrative - Principal, Superintendent	8
2	Yes	Urban	George Gervin Prep Academy	Female	Hispanic or Latino	Elementary K-8, Special Ed K-8, NBCT English Language Arts	7
2	n/a	Urban Clusters	Dysart Unified District	Female	White, non-Hispanic	Secondary Education	8
2	n/a	Urbanized	Mesa Unified District	Female	White, non-Hispanic	Elementary and Special Education	7
3	Yes	Suburban	Peoria Unified School District	Female	White, non-Hispanic	Elementary, Junior High	8
3	n/a	Urban Clusters	Kyrene Elementary District	Female	White, non-Hispanic	Special Education	7
3	n/a	Urbanized	Laveen Elementary District	Female	White, non-Hispanic	Secondary Education	7

**Table B4. Composition of ELA Grades 9-11 Panels**

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urbanized	American Charter Schools Foundation d.b.a. West Phoenix High School	Male	White, non-Hispanic	Secondary, Administrative Duties	9
1	n/a	Urbanized	American Charter Schools Foundation d.b.a. Sun Valley High School	Female	White, non-Hispanic	Secondary, Administrative - Principal, Superintendent	10
1	n/a	Rural	Red Mesa Unified School District	Female	White, non-Hispanic	Secondary English & Art	11
1	n/a	Urban Clusters	Prescott Unified District	Female	Multi-Racial	Secondary Education	9
2	Yes	Rural	Vail Unified District	Male	White, non-Hispanic	Secondary Education	10
2	n/a	Urban Clusters	Tucson Unified District	Female	White, non-Hispanic	Secondary Education	11
2	n/a	Urbanized	Glendale Union High School District	Female	White, non-Hispanic	Secondary Education	10
3	Yes	Rural	J.O. Combs Unified School District	Female	White, non-Hispanic	Secondary Education, Adult Education, AP Language & Composition	11
3	n/a	Urbanized	Tolleson Union High School District	Female	White, non-Hispanic		9
3	n/a	Urbanized	Pima Prevention Partnership	Female	Asian	Secondary Education	11

Table B5. Composition of Mathematics Grades 3-4 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urbanized	Rodel Foundation of Arizona	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	4
1	n/a	Urbanized	Scottsdale Unified District	Female	White, non-Hispanic	Elementary Education	3
1	n/a	Urbanized	Rodel Foundation of Arizona	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	3
2	Yes	Rural	Pima Unified District	Female	White, non-Hispanic	Elementary Education	3
2	n/a	Urbanized	Gilbert Unified District	Female	White, non-Hispanic	Elementary Education	4
2	n/a	Urbanized	Deer Valley Unified District	Female	White, non-Hispanic	Elementary Education	4
3	Yes	Urbanized	Mesa Unified District	Female	White, non-Hispanic	Elementary Education	3
3	n/a	Urbanized	Cartwright Elementary District	Female	White, non-Hispanic	(not provided)	4
3	n/a	Urbanized	Madison Elementary District	Female	White, non-Hispanic	Elementary Education	3
3	n/a	Rural	Lake Havasu Unified District	Female	White, non-Hispanic	Elementary Education	4

Table B6. Composition of Mathematics Grades 5-6 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urbanized	Mesa Unified District	Female	Hispanic or Latino	Elementary, Administrative - Principal, Superintendent	5
1	n/a	Urbanized	Avondale Elementary School District	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	6
1	n/a	Urbanized	Scottsdale Unified District	Female	White, non-Hispanic	Elementary Education	5
1	n/a	Urban Clusters	J.O. Combs Unified School District	Female	White, non-Hispanic	Elementary Education	6
2	Yes	Rural	Washington Elementary School District	Male	White, non-Hispanic	Elementary Education	6
2	n/a	Urbanized	Deer Valley Unified District	Female	White, non-Hispanic	Elementary Education	5
2	n/a	Urbanized	Fowler Elementary District	Female	White, non-Hispanic	Elementary Education	6
2	n/a	Urbanized	Kyrene Elementary District	Female	Black	Elementary Education	5
3	Yes	Urbanized	Tanque Verde Unified District	Female	White, non-Hispanic	Elementary, Administrative - Principal, Superintendent	6
3	n/a	Urban Clusters	Glendale Elementary District	Female	White, non-Hispanic	Elementary Education	5
3	n/a	Suburban	Chandler Unified District	Female	White, non-Hispanic	Elementary Education	6

Table B7. Composition of Mathematics Grades 7-8 Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urban	Deer Valley Unified District	Male	White, non-Hispanic	Secondary Education	7
1	n/a	Urbanized	Osborn Elementary District	Female	White, non-Hispanic	Elementary, Secondary	8
1	n/a	Urbanized	Deer Valley Unified District	Female	White, non-Hispanic	Secondary Education	7
1	n/a	Urban Clusters	Litchfield Elementary School District	Female	White, non-Hispanic	Secondary, Biology, Middle Grades Mathematics	8
2	Yes	Suburban	Mesa Unified District	Female	Hispanic or Latino	Elementary, Secondary Mathematics	8
2	n/a	Urbanized	Arizona School for the Arts	Female	White, non-Hispanic	Elementary Education	7
2	n/a	Suburban	Chandler Unified District	Female	White, non-Hispanic	Secondary Mathematics	8
2	n/a	Urbanized	Cartwright Elementary District	Male	Hispanic or Latino	Elementary Education	7
3	Yes	Urbanized	Tucson Unified District	Female	White, non-Hispanic	Elementary Education	8
3	n/a	Urban Clusters	Buckeye Elementary District	Male	White, non-Hispanic	Secondary Education	7
3	n/a	Urbanized	Mesa Unified District	Female	White, non-Hispanic	Special Education	7

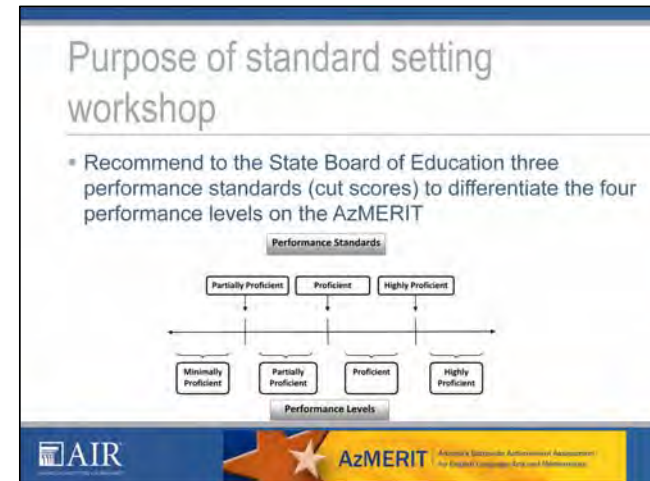
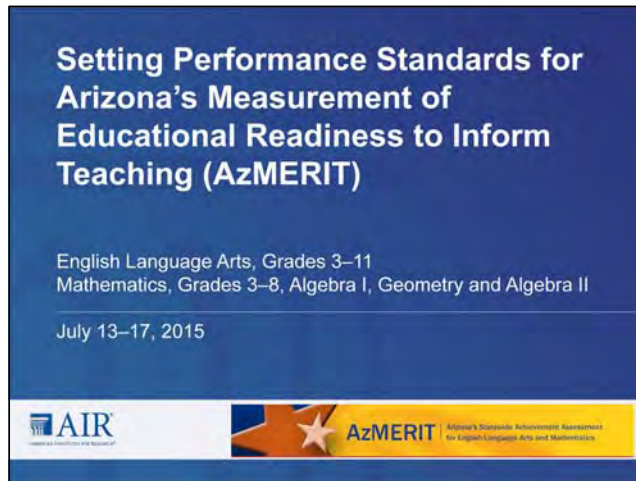
Table B8. Composition of Mathematics EOC Panels

Table	Table Leader	Urban/Rural	District	Gender	Ethnicity	Current Position	Grade Most Frequently Taught
1	Yes	Urban Clusters	Phoenix Union High School District	Female	White, non-Hispanic	Elementary, Secondary	10
1	n/a	Urbanized	Agua Fria Union High School District	Female	White, non-Hispanic	Secondary Education	9
1	n/a	Urbanized	American Charter Schools Foundation d.b.a. Estrella High School	Female	White, non-Hispanic	Secondary Education	9
2	Yes	Urbanized	Glendale Union High School District	Female	White, non-Hispanic	Secondary, Gifted Endorsement, NBPT	11
2	n/a	Rural	Florence Unified District	Female	White, non-Hispanic	Secondary Mathematics	10
2	n/a	Urban Clusters	Leading Edge Academy	Female	White, non-Hispanic	Secondary Education	9
2	n/a	Urban Clusters	Dysart Unified District	Female	Asian	Secondary Education	10
3	Yes	Rural	Lake Havasu Unified District	Female	White, non-Hispanic	Secondary Mathematics	9
3	n/a	Urbanized	Chandler Unified District	Female	White, non-Hispanic	Secondary Education	11
3	n/a	Urbanized	Primavera Technical Learning Center	Female	White, non-Hispanic	Secondary Education	10
3	n/a	Urbanized	Deer Valley Unified District	Male	White, non-Hispanic	Secondary Mathematics	11



## **Appendix C – Training Presentations**

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



The purpose of this workshop is to recommend a system of performance standards to the state board of education. For each of the new AzMERIT assessments, the workshop panels will recommend three performance standards or cut scores: Partially Proficient, Proficient and Highly Proficient. These will be used to classify students into one of four performance levels: Minimally Proficient, Partially Proficient, Proficient, and Highly Proficient

To set valid, meaningful cut scores, that are publicly verifiable, standard setting workshops are conducted. The standard setting workshops employ research-based procedures that are used by committees of educators to establish cut scores on a state's assessments. Performance standards impact students and the education system statewide. The procedures you will engage in are designed to give you the tools to make informed judgments that yield defensible recommendations that can be submitted to state board of education for adoption.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



Arizona's Mathematics and English Language Arts and Literacy standards were adopted in 2010 and address the mathematics, reading, writing, language, and speaking and listening skills that each student will work to master as he/she progresses through school and towards college and a career.

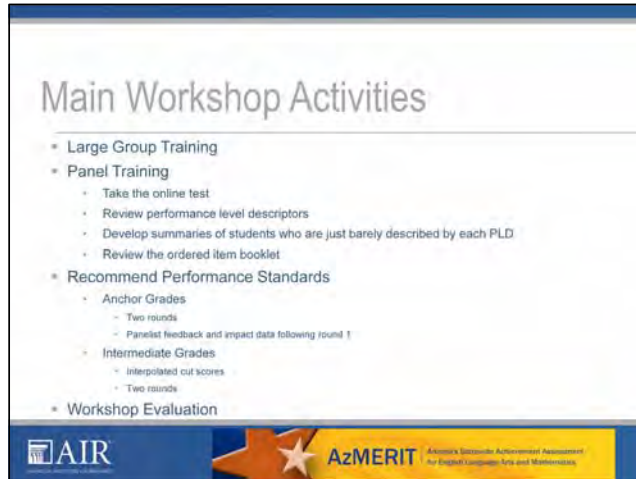


In this workshop, we will be recommending performance standards for ELA grades 3 - 11 and Math grade 3-8, Algebra I, Geometry and Algebra II. There are 8 separate panels which will work independently. The panels will be split up by grade bands, ELA grade 3-4, 5-6, 7-8 and 9-11 and Math grades 3-4, 5-6, 7-8 and Algebra I, Geometry and Algebra II.

Each panel is comprised of about 12 panelists, split into three tables.

Each table has a designated table leader who will help to distribute and collect materials, and who can serve as a liaison between your table and the workshop staff. Please make sure to leave all secure materials in the rooms or turn into your table leader if directed by the workshop leader.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



We will begin the workshop with an overview of the standard setting process. The panels will employ the Bookmark procedure to recommend standards. You will be trained on the specifics of these methods as you go through each step of the process within your own groups.

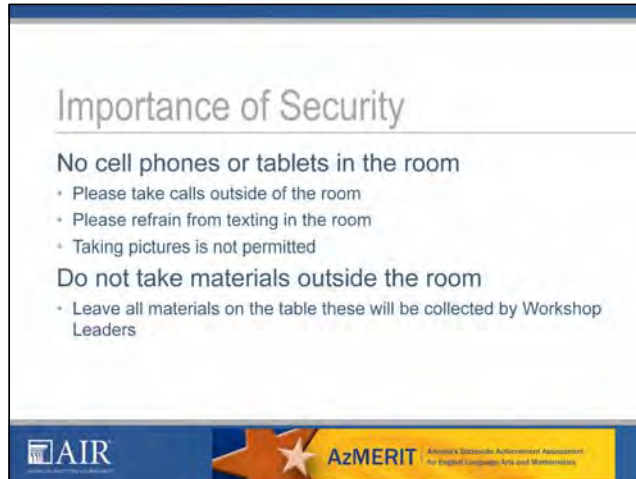
Following this introduction, each of you will have an opportunity to participate in the same assessments administered to students this spring. You will take the grade and subject test for your assigned committee in the online testing environment that students experienced.

Following that, you will work with other members at your table to review the Performance Level Descriptors which define the knowledge and skill requirements of students at each level.

Next, you will review a book of test items ordered from easiest to most difficult based on actual student performance to recommend performance standards, thinking about what students have to know and be able to do in order to respond successfully to each item. This is referred to as your Ordered Item Booklet or OIB. You'll then recommend performance standards by identifying pages in the OIB that serve as cuts for different levels of achievement. You'll receive and discuss feedback on your initial recommendations with your fellow panelists, and then make another individual recommendation. Then, you'll receive further feedback and other performance information to provide additional context to your recommendations.

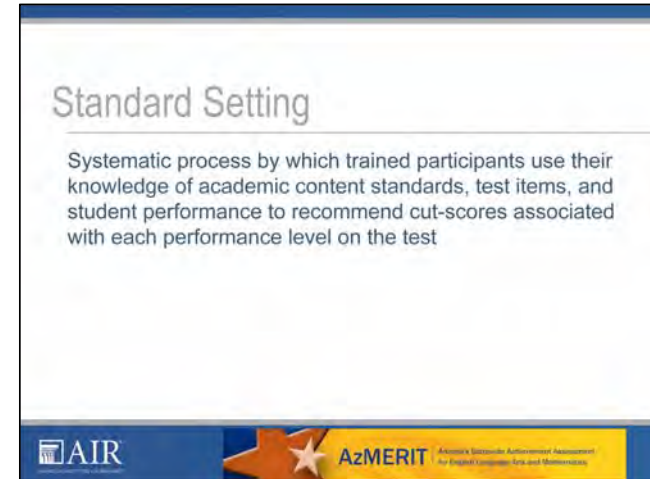
Following final recommendations, we will conduct a debriefing and we will ask you to complete a workshop evaluation form before you leave. The evaluation forms you will receive throughout the process are an important part of the standard setting and you are asked to complete them thoroughly and thoughtfully.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



Facilitator Note: Please stress the importance of security. These are operational items that will be used on future administrations. Absolutely no picture taking, cell phones are to be put away and not out at the table, no texting while working. We understand emergencies may happen, please take all calls outside the meeting room. Do not surf other websites while using the laptops.

We can't stress the importance of security enough. We'll be working with live test items that will be administered to students again in the future, and it's important from a test score validity perspective that items remain secure. That means that we ask that you keep cell phones, tablets, laptops away, and step outside if you need to take a call.

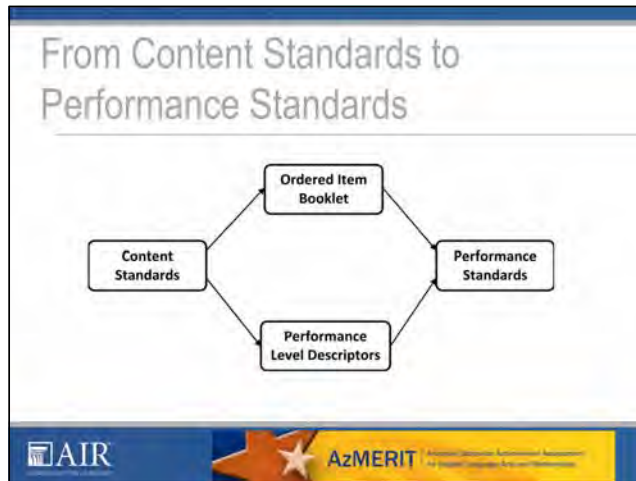


Standard setting refers generally to the process of identifying a passing score on a test. The central question of the standard setting process is to identify the level of performance on a test that indicates a passing, or good enough, performance.

A passing or good enough performance is determined by the purpose of the assessment. Tests may, for example, certify minimum competence or select out only the highest performers.

The AzMERIT are criterion referenced tests, meaning that they directly measure a representative sample of the knowledge and skills that students are expected to achieve by the end of each school year. Therefore, we will employ a test-centered approach to setting performance standards. In test-centered approaches, cut scores are established based on the degree to which students demonstrate achievement of knowledge and skills measured directly in the assessment. For this reason, test-centered approaches depend critically on having participants in the standard setting who are very knowledgeable about the state's content standards and willing to help the state define the level of knowledge and skill expected of a student at each performance level demonstrated by the cut scores.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)

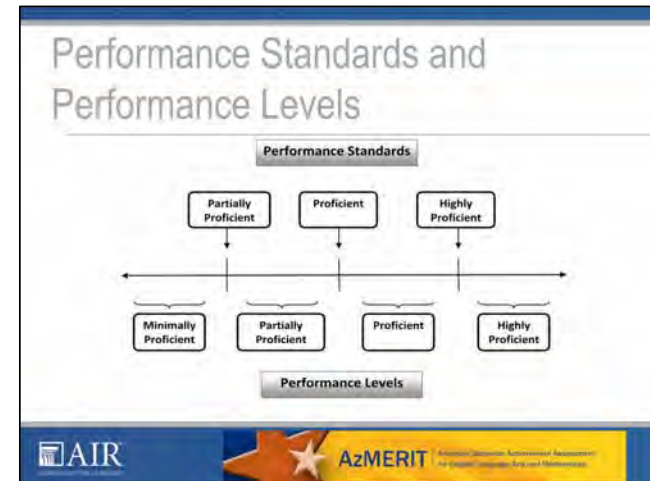


The standard setting process that we will be engaged in during the next several days is designed to translate the Arizona academic content standards in English and language arts and mathematics into a set of performance standards, or cut scores. Two important documents, the Ordered Item Booklet and the Performance Level Descriptors, will be your primary tools for translating the academic content standards into performance standards.

Throughout this workshop, we will refer to different types of “standards.”

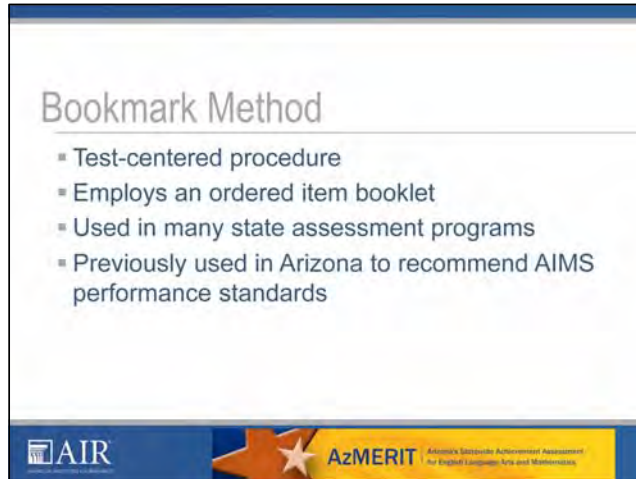
Academic content standards specify what students should know and be able to do by end of each academic year.

Performance standards specify how much of the content standards students must know and be able to do in order to meet each performance level. You will recommend three performance standards, or cut scores, for each anchor grade (i.e. Grade 4) and interpolated (adjacent) grade (i.e. Grade 3).



Performance levels are regions on the achievement scale demarcated by the performance standards. They classify students by how much of the content standards they know and are able to do. The three performance standards will result in four performance levels.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)

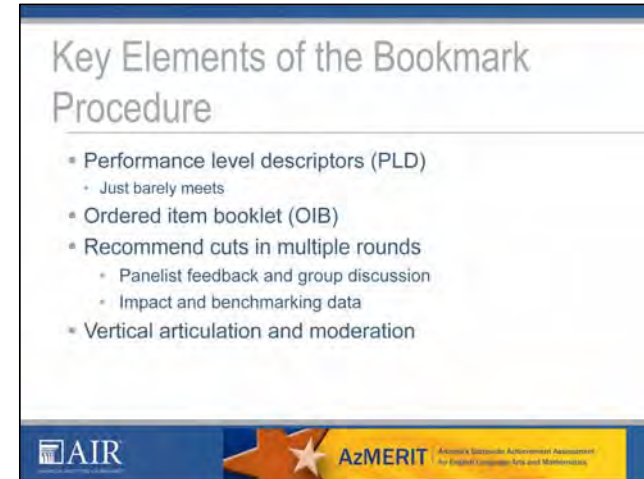


There are many methods for setting performance standards, including examinee-centered and test-centered. In some employment applications, for example, tests may be administered to groups of people who are more or less successful, and a cut score is identified that best differentiates the two groups. This is an example of an examinee-centered approach.

However, because the AzMERIT are criterion-referenced assessments, meaning that they measure a representative sample of the academic content that students are expected to know and be able to do by the end of each school year, we are employing a test-centered approach to recommended performance standards. In other words, successful performance of items on the test speaks directly to students' performance of the standards.

Modern standard setting approaches generally use of an Ordered Item Booklet, or OIB, with test items ordered from easiest to most difficult to help panelists and to streamline the standard setting process.

The Bookmark method is widely used for many years in statewide assessment programs, and has been used to set performance standards for various other state assessments including the AIMS system in Arizona.



You will discuss the mechanics of the Bookmark procedures in much greater detail within your own groups.

Performance Level Descriptors, or PLDs, are detailed descriptions of the knowledge and skills students are able to demonstrate with respect to the academic content standards at each level. In particular, we'll be concerned with a special group of students, those who just barely meet the performance level descriptors.

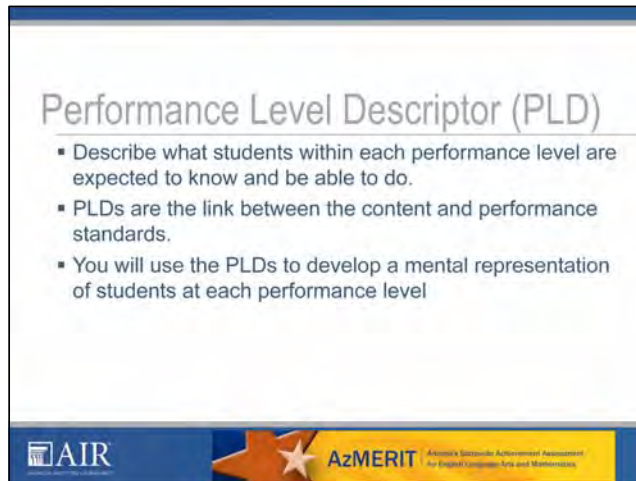
The Ordered Item Booklet, or OIB, contains operational and other test items that were administered in spring 2015 as well as other items to fill in information gaps, ordered from easiest to most difficult.

Once you have developed descriptions of students who just barely meet the PLDs and complete your review of the OIB, you will be ready to recommend performance standards for each of the proficiency levels. You will recommend performance standards in multiple rounds.

Although you will have plenty of opportunities to discuss bookmark placements with our fellow panelists, your bookmark placements represent you individual recommendations and you will make those recommendations independently from the other panelists. After your initial bookmark placements, you will have an opportunity to discuss your recommendations in context of your fellow panelists' recommendations, and affirm or revise your own recommendations in round two.



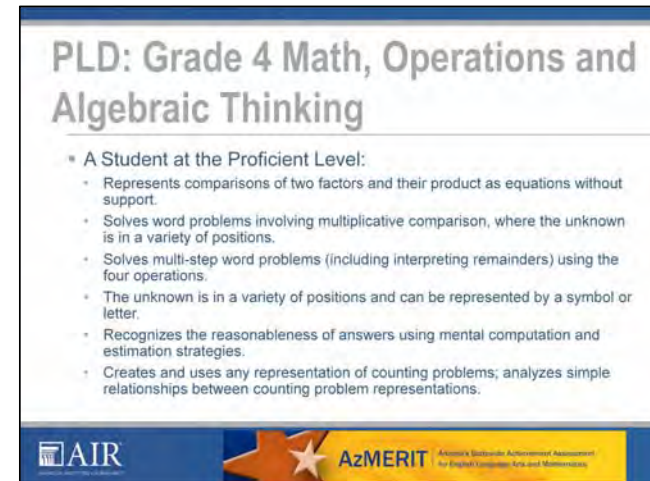
## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



Performance Level Descriptors will serve as your guide for identifying performance standards. The PLDs describe what skills students in each level are expected to have. When you recommend a standard, you are asserting that students who meet that level of performance fit the description of the student's abilities provided in the PLDs. This link is critical because it allows teachers and families to understand what a student's test results mean.

To thoroughly review the PLDs, it is helpful to parse the standards. You may find, for example, performance levels are differentiated by the verbs used in the PLDs – for example, students may recognize, identify, understand, explain, and so on.

You will be asked to pay careful attention to the content and skill demands required at each performance level. It is critical for you to understand that when you recommend a cut score, you are asserting that students who perform at that achievement level meet the content and skill requirements described in the PLD.





For example, in grade 4 math, the PLD describes a Proficient student. Some skills described in the PLD include:



## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)

### Grade 4 Math PLDs Across Performance Levels

- **Minimally Proficient** – Solves multi-step word problems using the four operations with simple context and scaffolding, where the final answer is the unknown.
- **Partially Proficient** – Solves multi-step word problems (which may include interpreting remainders) using the four operations with simple context and scaffolding, where the final answer is the unknown.
- **Proficient** – Solves multi-step word problems (including interpreting remainders) using the four operations. The unknown is in a variety of positions and can be represented by a symbol or letter.
- **Highly Proficient** - Solves complex multi-step word problems with multiple possible solutions and determines which would be the most reasonable based upon given criteria.






AzMERIT Arizona's Standards Achievement Assessment  
For English Language Arts and Mathematics

We will compare the performance level descriptors across performance levels.

### Ordered Item Booklet (OIB)

- Each OIB constitutes an augmented test administration:
  - Spring 2015 Operational Test Form
  - Plus some field test items to fill information gaps
- Items are ordered by difficulty.
- Each page is a score point on an item.
- Multi-point items appear multiple times in OIB (once for each score point).

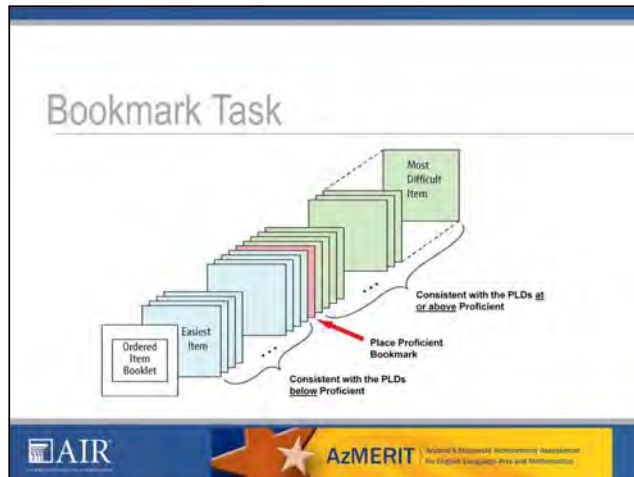
AzMERIT Arizona's Standards Achievement Assessment  
For English Language Arts and Mathematics

OIB is the other primary tool you will use. The Ordered Item Booklets will present you with the items from the spring 2015 assessments. The content of the items is proportional to the test blueprint.

The OIB consists of all operational items as well as 15-20 field test items to fill in information gap. What that means is that we added items where there was a large gap in item difficulty between operational items so that the items in the OIB appear more fluid in terms of difficulty.

All items will be presented in order of difficulty; page 1 will present the easiest item, and the last page will present the hardest item. Some items will be represented more than once. These items are more engaging than others and are worth more than a single score point. Each “page” in the ordered item booklet will refer to specific score point of the item, in each room you will review the series of items in an online environment.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



Items are ordered from easiest to most difficult. The OIB provides a picture of the range of knowledge and skills encompassed by the items on the test, and is a vehicle used to make cut score judgments.

The OIB should provide useful information about natural breaks in the knowledge and skill requirements necessary to consistently perform successfully across a range of item content.

For each performance standard, you will place a bookmark on the page that divides the OIB into two sets of page ranges: pages that students at a particular level can reliably respond correctly to, and the pages that the students at that level cannot respond correctly to.

### Studying the Ordered Item Booklet

- Consider each item and answer two questions
  - What do students need to know and be able to do to respond successfully to this item?
  - Why is this item more difficult than the previous items?

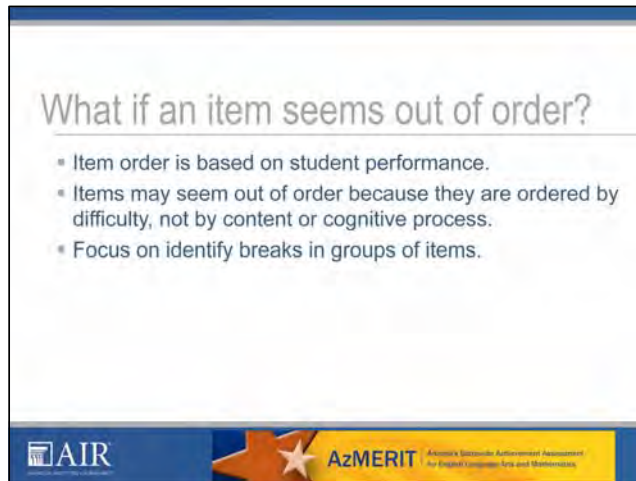
When studying the OIB, it is important to understand the difference between items in context of the whole OIB. Items that appear earlier in the book are easier, despite perceptions otherwise, than items that appear later in the book.

For each item, ask yourself two questions:

- 1) What do students need to know and be able to do to respond successfully to this item?
- 2) Why is this item more difficult than the previous items?

While the items will be presented to you online, you will be able to record your notes about these questions to refer to as you decide where to place your bookmark.

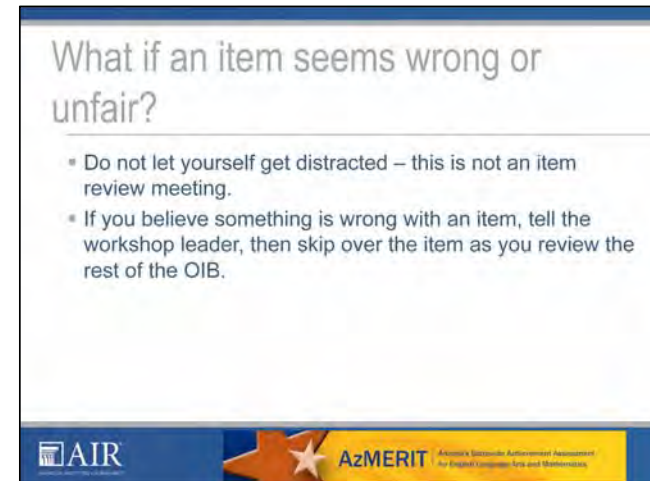
## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



The difficulty of these items is based on students' performance during the 2015 operational assessment. So while a particular item may seem easier or harder to you, the placement in the ordered item book reflects how easy or hard it actually was for students to perform successfully on these items.

If an item seems out of order to you, remember that an item may not measure what you think it measures. For example, an item may intend for a student to have to know a particular piece of information, but perhaps the students were able to answer using recall from a lesson that was taught recently.

Instead of focusing on one item that may seem out of place to you, try to identify natural breaks or thresholds for groups of items.



## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



There are two important concepts that you will discuss in order to understand your bookmark task:

1. The idea of "just barely" meeting a standard, or a student that is "just barely" described by a performance level descriptor, and
2. A common understanding of what mastery means.

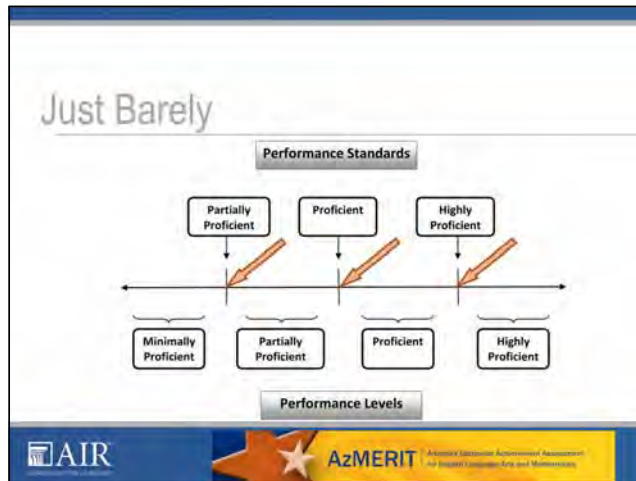
We will discuss each of these in turn.



#### **"Just Barely"**

Even within each performance level, students vary in the degree to which they have mastered the Arizona State standards. Some students have just barely crossed the line between Partially Proficient and Proficient, while others are getting ready to cross the line between Proficient and Highly Proficient. In general, the PLDs are written to describe the performance of students in the middle of the category. However, we actually want to focus our attention on a specific subset of students within each performance level, those who have "just barely" entered into the performance level. They are not the typical example of a Proficient student, and may not be what you picture when asked to describe a Proficient student, but they do still just meet the criteria described by the PLD, and are a Proficient student.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



You will spend time in your workshop rooms reviewing the PLDs, and thinking about what knowledge and skills students that are just barely described by PLD have to have, and what separates them from students who are not described by the PLD.

To frame this, we'll think about:

1. Students who fall near each performance standard or level – what characterizes these students?
2. What differentiates students who just meet the performance standard from those that do not – what can they do, or not do, that categorizes them on either side of the standard?

Each room will produce a summary of “just barely” skills for each performance level.

To place bookmarks, you will find the location in the OIB that differentiates students who are “just barely” from those that are not. To do this, you will evaluate whether “just barely” students can respond successfully to each item in the OIB.

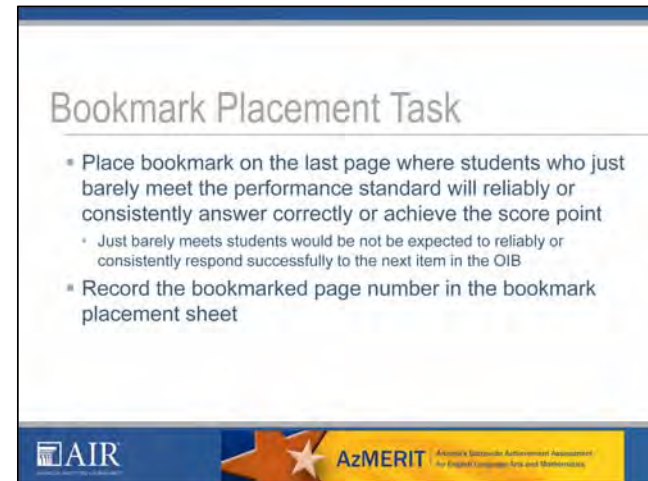
In order to make this judgment, we need to develop a common understanding of what it means to perform successfully on an item. When we say that “just barely” students can perform successfully on an item, do we really mean that such students will always get the item correct? We don't typically operate in absolutes. Students don't always get items correct, for a variety of reasons. Instead, we say that students consistently perform successfully on items or tasks. In a similar vein, for the purpose of this workshop, we will define successful performance as a response probability of 67%, which is referred to as RP67, meaning that we wish to identify the location in the OIB where students who are just barely Proficient have a 2/3 chance of responding correctly to the item. You can think about this as a way to define what it means to say that a student can reliably answer an item correctly – they won't always answer it correctly, but they can reliably answer it.

We can think about this concept in two different ways – if you picture one “just barely” student, they have a 67% chance of responding correctly to the item. Alternatively, if you visualize a group of 100 “just barely” students, two thirds of the group will respond to the item correctly.

When you place bookmarks, you will work through each page of the OIB and determine whether 2/3 of just barely Proficient students, for example, can respond successfully to the

**Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)**

item on each page. This judgment will be the basis for recommending a bookmark.

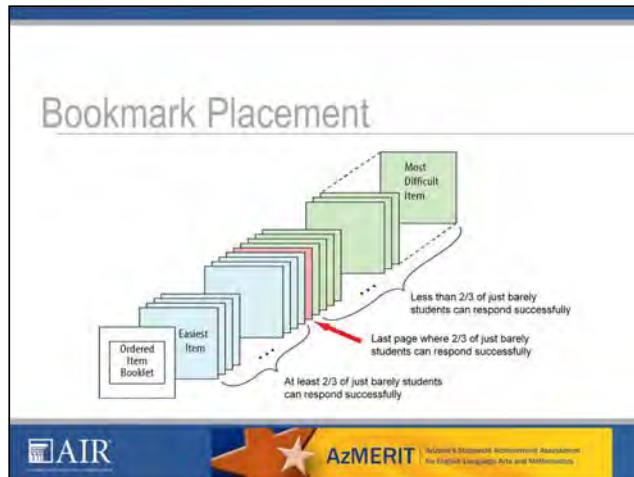


In each room you will review the Ordered Item Book which presents a long series of items, ordered from easiest to most difficult. While reviewing, remember your focus will be to determine what students need to know and be able to do in order to respond to each item successfully, and why each item is more difficult for students than the items before.

In the coming days you will make performance standards recommendations by identifying a page number of the OIB that will serve as the cut.

For each performance level, you will work through the OIB and consider whether 2/3 of "just barely" students can respond successfully to the item. You will place your bookmark on the last page where 2/3 of students who just barely meet the performance standard will answer correctly. This means that fewer than 2/3 of just barely meets students would be expected to respond successfully to the next item in the OIB.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



### Don't get confused or distracted

- The ordering of items in the OIB is not the same as the ordering of items on the test
- Page numbers in the OIB are not equal to raw scores on the test
- Page number 30 in a 60 page OIB is **not** the same as 50% correct on the test

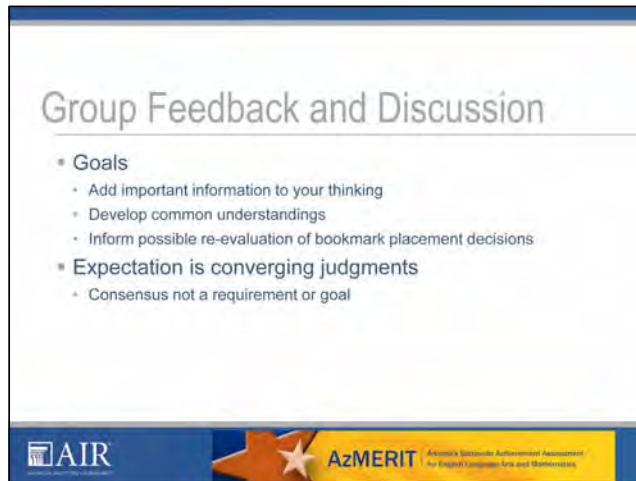
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AzMERIT

American Institutes for Research



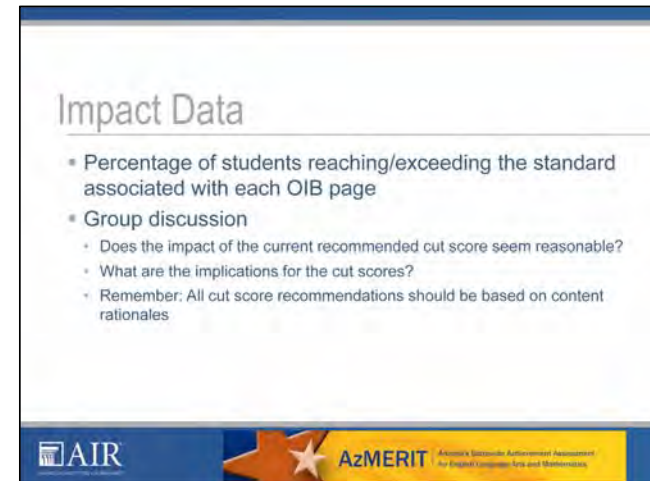
## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



After you complete your initial bookmark placement, you will be provided feedback about how other panelists placed their bookmarks. You will receive feedback about the bookmark placements for your table and also see how the bookmark placements across tables compare.

This data can serve as a start for discussion about bookmark placements and help panelists to develop common understandings of the skills a “just barely” student has, taking into account the varied backgrounds and expertise of your fellow panelists. Once you have had a chance to review the feedback data within your table, we will expand the discussion to other tables in your grade.

From these discussions, panelists may revise their judgments and choose to move their bookmark placement in Round 2, but there is no expectation that panelists will move bookmarks. Generally, we do see convergence from Round 1 to Round 2, but consensus is not a goal.



You will also be presented with impact data for each subject after the first round of cuts. This is the percentage of students who would reach or exceed the standard based on the item page in the Ordered Item Booklet. With this information, you will ask yourself if the outcome seems reasonable. While impact data can be informative, placement of your bookmarks should always be guided by content considerations to ensure that students meeting the performance standard are accurately described by the PLD for each level.

When you receive the impact data, you will want to ask yourself whether the impact of the current cut score placement seems reasonable and in the neighborhood of what you were expecting. If the impact data seems out of line with your expectations, consider why that might be. If the impact is that fewer students meet the standards than you expected, might it be, for example, that the new academic content standards are more rigorous and require students to demonstrate greater knowledge and skills than previously? If the impact is that more students meet the standards than you expected, could it be that you underestimated the knowledge and skills that students can reliably demonstrate?

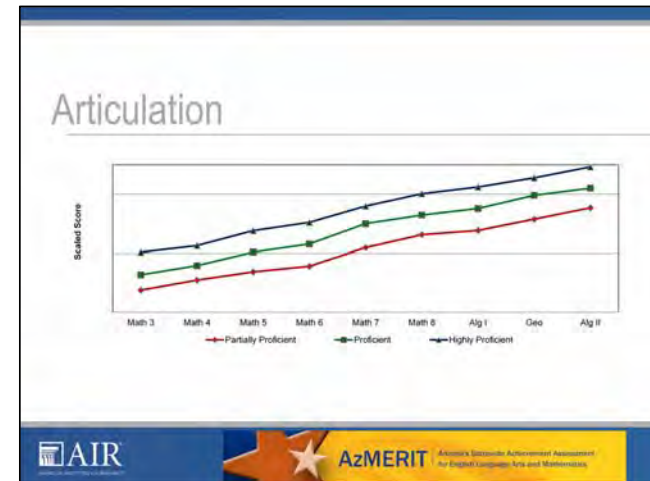
Consider your cut score recommendations in the light of the impact data, and discuss the implications of the current cut score placements with your fellow panelists. Remember, while you may choose to modify your cut scores in light of the impact data, your rationale for making each cut score should be based on content considerations.



## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)

### Creating a system of performance standards

- Performance standards for a statewide system must be coherent across grades and subjects
  - Articulation
  - Benchmarking
  - Moderation

When we talk about standards being articulated across grades, we refer to the idea that there should not be wide fluctuations in the proportion of students meeting each performance standard across grades. It is unlikely, for example, that if 60% of Grade 4 students are considered to have achieved end-of-year standards for reading and are academically prepared to benefit from Grade 5 reading instruction, that only 40% of Grade 5 students meet end-of-year standards in reading.

While this vertical articulation is incorporated into the development of the Arizona Academic Content Standards as well as the test specifications for the AzMERIT assessments, maintaining the cross-grade articulation in the setting of meaningful performance standards is important, especially for reading and mathematics, where students are assessed annually. Lack of articulation in these subjects can result in confusion, with unreasonably large shifts in student performance-level classifications occurring from year to year, resulting, for example, in widespread misidentification of poor performing teachers across grade levels within schools.

For this reason we conduct moderation sessions.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



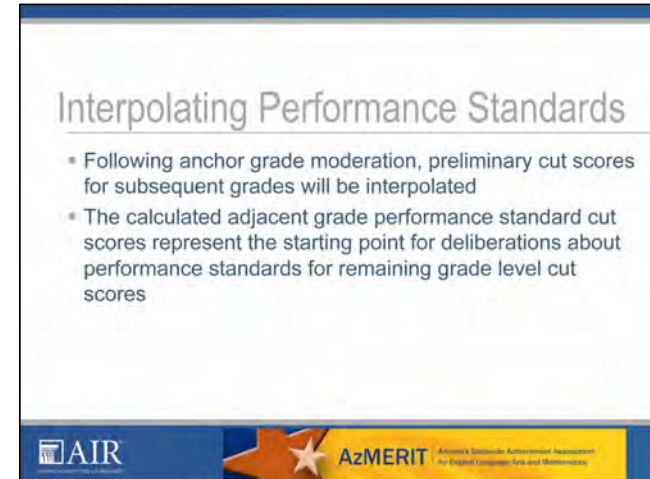
After your panels recommend performance standards in the initial grade, table leaders will be asked to participate in a Moderation session. This activity gives an opportunity for representatives to review the recommended standards across grades in light of the discussion of content demands and the relative impact of student performance across grades. All panelists are invited to sit in, but table leaders will be asked to make recommendation for moderating the recommendations. Table leaders will represent their table's views in the discussion.

Moderation will serve two purposes -

- 1) Providing a broader view of recommendations and an opportunity for panelists to benefit from the deliberations and experiences of other grade level panels
- 2) Produce a set of reading performance standards that are articulated across grades.

Similar to content standards being articulated across grades, we refer to the idea that there should not be wide fluctuations in the proportion of students meeting each performance standard across grades. It is unlikely, for example, that if 60% of Grade 4 students are considered to have achieved end-of-year standards for reading and are academically prepared to benefit from Grade 5 reading instruction, that only 40% of Grade 5 students meet end-of-year standards in reading.

For this reason, we convene table leaders to review the standards in light of each individual panel's expert judgment, as well as all panels' judgments together. We will moderate standards at this stage, and again at the end of the workshop.





We will calculate proposed Adjacent Grade Performance Standards cut scores will be presented to before beginning the Bookmark placement activities for the adjacent grades.

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)

### Modified bookmark judgment task

- For adjacent grade cut scores for each performance level
  - Ask whether just barely meets students can reliably or consistently respond successfully to the item
    - If yes, then endorse the interpolated cut score
    - If no, then try to identify the nearest OIB page where just barely meets students can reliably or consistently respond successfully



AzMERIT Arizona's Standards Assessment for English Language Arts and Mathematics

### Benchmarking

- Are performance standards nationally competitive and represent on track for college readiness?
  - NAEP
  - Smarter Balanced
- Performance levels for benchmark assessments will provide context about the general neighborhood in which performance standards likely reside





AzMERIT Arizona's Standards Assessment for English Language Arts and Mathematics

## Presentation C.1. Large Group Training Presentation and Script (Grades 3-8)



## Final Moderation

- After the standards have been recommended by the panelists the table leaders meet to review the outcome.
- If there are anomalies across grades or subjects the table leaders are permitted to adjust the performance standards (assuming there is a good content reason for doing so)

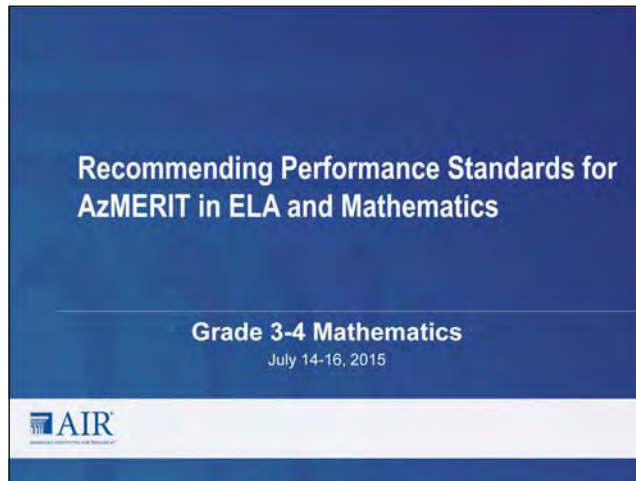
## Break into groups

Panel	Workshop Facilitator	Workshop Assistant	Room
ELA 3-4	Josh Smith	Megan Holt	312
ELA 5-6	Brett Craycraft	Danielle Peterson	314
ELA 7-8	Katina Marshall	Kevin Clayton	Borien A/B
Math 3-4	Mo Font	Hashim Evans	316
Math 5-6	Chris Paskoff	Casidy Robison	318
Math 7-8	John Neral	Natalie Smithkors-Morgan	Russel B/C

This concludes our large group training session. Please break into your assigned groups. Your panel assignments should be included in your folders as well as room numbers, which are also currently displayed on the screen. Please locate an AIR or ADE employee, as indicated by our badge, if you require any assistance. Thank you.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



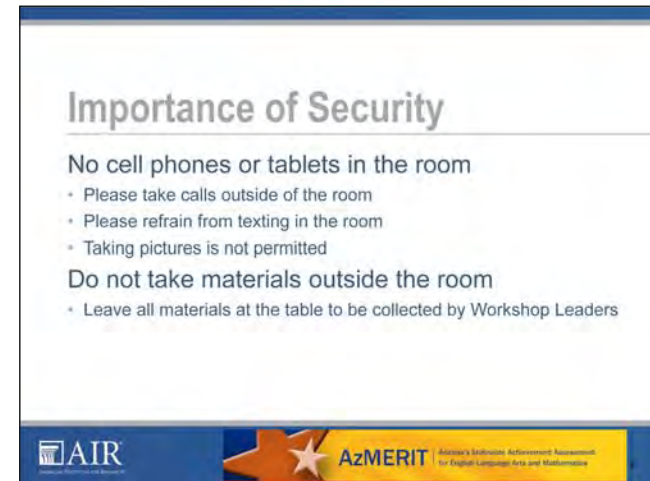
Note for facilitator: Introduce workshop staff, and have panelists introduce themselves to the group. Encourage panelists to share names, school district/region, and what grades and subjects each panelist works with.

Let's go around the room and introduce yourself, and share what school district or area in the state you are coming from, and what students you primarily work with.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



On your table, there is a non-disclosure form. The first order of business is to sign those and hand them in.



Facilitator Note: Please stress the importance of security. These are operational items that will be used on future administrations. Absolutely no picture taking, cell phones are to be put away and not out at the table, no texting while working. We understand emergencies may happen, please take all calls outside the meeting room. Do not surf other websites while using the laptops.

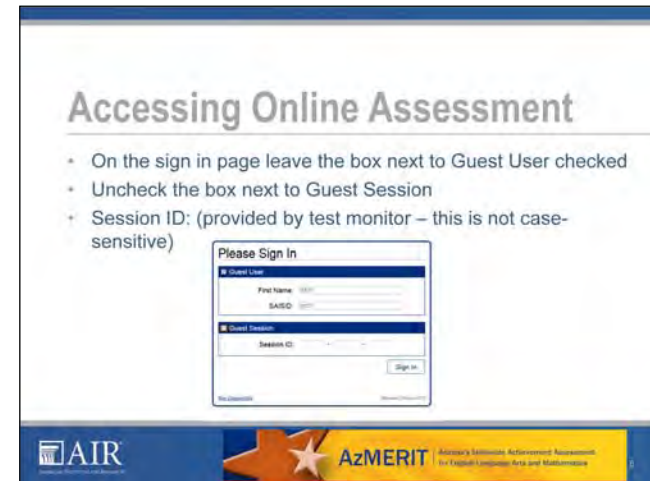
We can't stress the importance of security enough. We'll be working with live test items that will be administered to students again in the future, and it's important from a test validity perspective that items remain secure. That means that we ask that you keep cell phones, tablets, laptops away, and step outside if you need to take a call.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Notes to elaborate on:

- You will experience a subset of items administered in spring 2015
- The interface is almost identical to the online test environment that the student view and experience
- You cannot see your scores for hand scored items because they are scored at a later time
- There is only an hour reserved for experiencing the Online assessment
- The purpose is not to complete the test, but to get an idea of what the students experienced

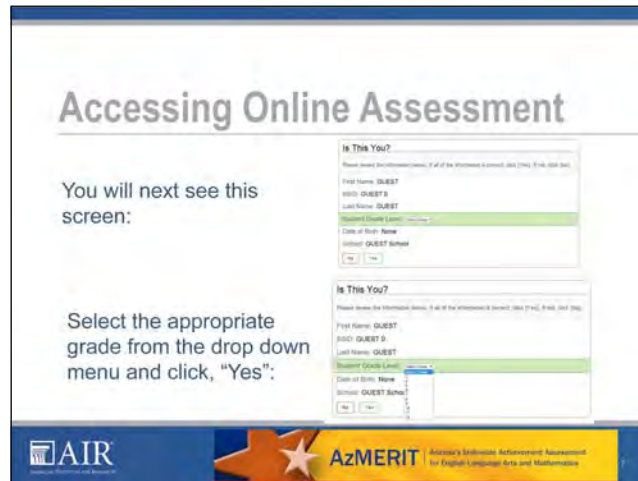


You will now have the opportunity to take a test that was administered to students this spring.

Note: Secure browser should be deployed on each panelist's computer. Additional workshop staff will circulate rooms to expedite log-in process.



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

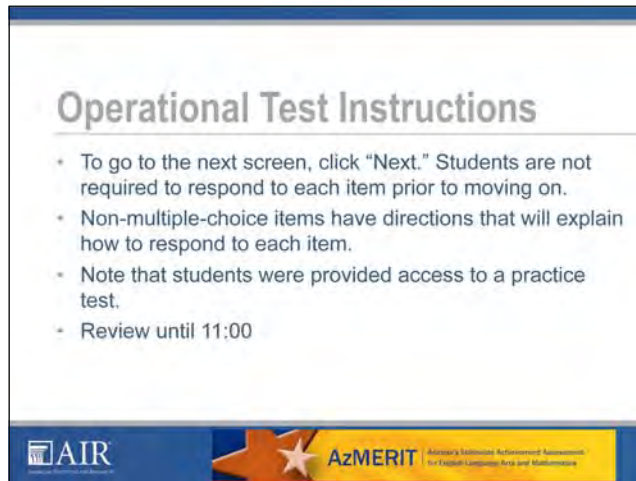


Select Grade 4 Math test

The AzMERIT test was administered in parts. If you complete part 1, you will "submit" your test (remember this is just to get a feeling of what a student would experience) then be brought to the login screen where you will follow the same steps to access part 2.





## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

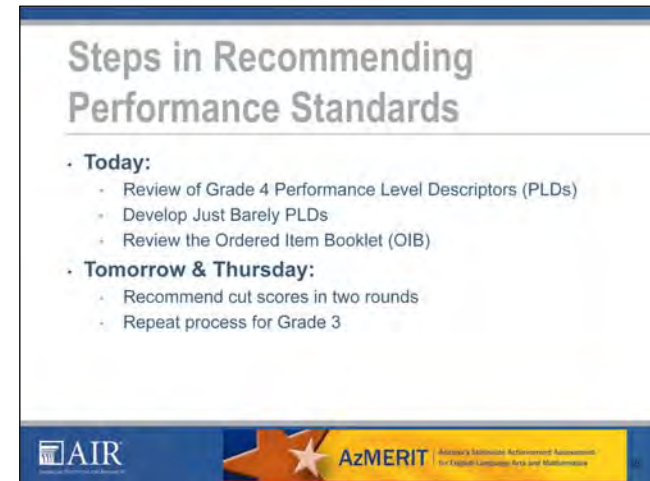


**Operational Test Instructions**

- To go to the next screen, click "Next." Students are not required to respond to each item prior to moving on.
- Non-multiple-choice items have directions that will explain how to respond to each item.
- Note that students were provided access to a practice test.
- Review until 11:00



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Once you are in the testing environment, work through the test, and take a break as needed. At around 11am, we will move on to the next activity as a group.



**Steps in Recommending Performance Standards**

- **Today:**
  - Review of Grade 4 Performance Level Descriptors (PLDs)
  - Develop Just Barely PLDs
  - Review the Ordered Item Booklet (OIB)
- **Tomorrow & Thursday:**
  - Recommend cut scores in two rounds
  - Repeat process for Grade 3



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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

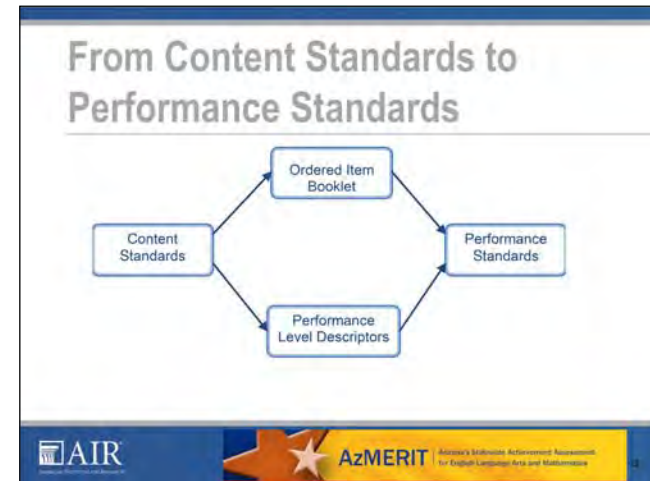
### Order of the Grades in which Standards are Set

- All panels recommend standards for one or more "anchor grades"
- Review recommended standards across grades
- Then, recommend standards for adjacent grade

Panel	Anchor Grade(s)	Adjacent Grade
Math 3-4	Grade 4	Grade 3
Math 5-6	Grade 6	Grade 5
Math 7-8	Grade 8	Grade 7
High School Math	Algebra II, Geometry	Algebra I

  **AzMERIT** Arizona's Achievement Reference Assessment for English Language Arts and Mathematics

The High School panels have started and set standards for their grade bands 9 - 11



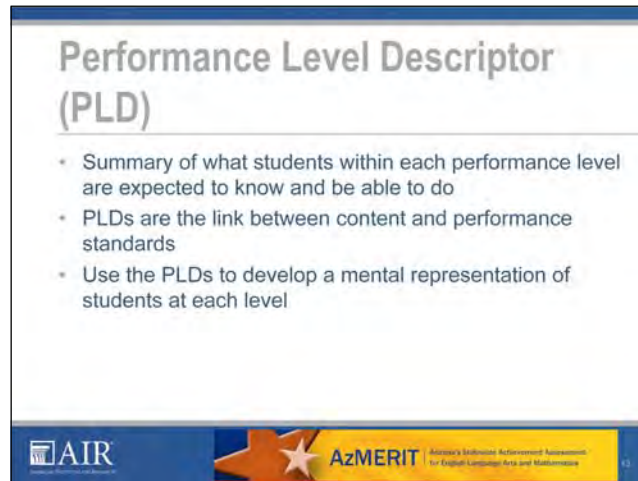
The standard setting process that we will be engaged in during the next two days is designed to translate the Arizona State standards in Math 3-4 into a set of performance standards, or cut scores, on each of the assessments. Two important documents, the Ordered Item Booklet and the Performance Level Descriptors, will be your primary tools for translating the academic content standards into performance standards.

Throughout this workshop, we will refer to different types of "standards."

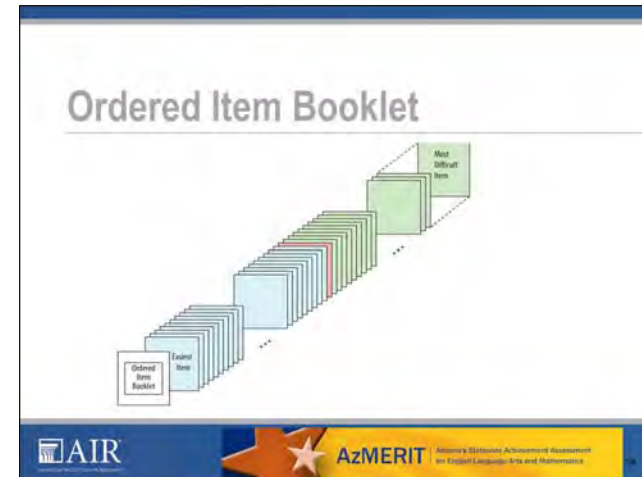
Arizona State standards specify what students should know and be able to do by end of each academic year.

You will use two tools, OIB and PLDs

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Performance Level Descriptors will serve as your guide for identifying performance standards. The PLD is a summary of what students within each achievement level are expected to know and be able to do. The PLDs are a link between content and performance standards. This means when you recommend a standard, you are asserting that students who meet that level of performance fit the description of the student provided in the PLDs. This link is critical because it allows teachers and families to understand what a student's test results mean.



The Ordered Item Book, or OIB, is the other primary tool you will use. The OIB contains operational test items administered in Spring 2015 ordered from easiest to most difficult. Each page is a score point on an item. Certain items appear multiple times in the OIB, once for each score point. The number of pages in the book is equal to the number of points in the OIB, not the number of items on the OIB.

You will identify how much a student should know and be able to do to meet the description for each performance level in the PLDs by placing a bookmark in the OIB that divides the book into two groups: items that students described by the performance level descriptor can respond successfully to, and items that students in that performance level cannot respond successfully to

You will have two different opportunities to make individual recommendations – you'll make an initial judgment, and then you will receive feedback showing the bookmarks of your fellow panelists. We'll discuss everybody's bookmarks, and we'll also look at the percentage of students in the state who would meet or exceed each of the recommended standards, or impact. Then, you'll make individual recommendations again – you can change your bookmarks, but you don't have to.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Performance levels are regions on the performance scale demarcated by the performance standards. They classify students by how much of the content standards they know and are able to do. The three performance standards will result in four performance levels.

**PLD: Grade 4 Math, Operations and Algebraic Thinking**

Student at the Proficient level can:

- Represents comparisons of two factors and their product as equations without support.
- Solves word problems involving multiplicative comparison, where the unknown is in a variety of positions.
- Solves multi-step word problems (including interpreting remainders) using the four operations.
- The unknown is in a variety of positions and can be represented by a symbol or letter.
- Recognizes the reasonableness of answers using mental computation and estimation strategies.
- Creates and uses any representation of counting problems; analyzes simple relationships between counting problem representations.

The slide includes the AIR logo and the AzMERIT logo with the text 'Arizona's End-of-Course Assessment for English Language Arts and Mathematics' at the bottom.



We can compare the Performance level descriptors across Performance levels for each content standard.

Talk about content limits and verbs.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

### Grade 4 Math PLDs Across Performance Levels


- **Minimally Proficient** – Solves multi-step word problems using the four operations with simple context and scaffolding, where the final answer is the unknown.
- **Partially Proficient** – Solves multi-step word problems (which may include interpreting remainders) using the four operations with simple context and scaffolding, where the final answer is the unknown.
- **Proficient** – Solves multi-step word problems (including interpreting remainders) using the four operations. The unknown is in a variety of positions and can be represented by a symbol or letter.
- **Highly Proficient** - Solves complex multi-step word problems with multiple possible solutions and determines which would be the most reasonable based upon given criteria.



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### Development of “Just Barely” Summary Statements

When considering each performance level, we are interested in those students who ***just barely*** meet the performance standard.

- Not typical of students in Performance level
- Although just barely, they do meet the standard



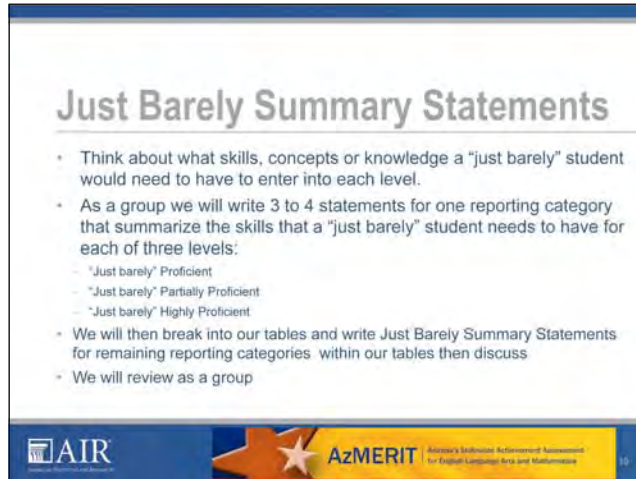
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Even within each performance level, students vary in the degree to which they have mastered the Arizona State standards. Some students have just barely crossed the line between Partially Proficient and Proficient, while others are getting ready to cross the line between Proficient and Highly Proficient. In general, the PLDs are written to describe the performance of students in the middle of the category. However, we actually want to focus our attention on a specific subset of students within each performance level, those who have “just barely” entered into the performance level.

To frame this, we'll think about:

1. Students who fall near each performance standard – what characterizes these students?
2. What differentiates students who just meet the performance standard from those that do not – what can they do, or not do, that categorizes them on either side of the standard?
3. Descriptions of how much of the content standards students who just barely meet the performance standard have to know and be able to do in order to be categorized in each performance level.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



*Facilitator – start with the reporting category that you made examples for and ask panelists to review that reporting category individually then as a group write just barely statements*

Choose a reporting category you feel comfortable with to do as a group

As we go through and review the PLDs we will think about what high level skills are necessary for a student just entering each performance level.

Remember, the student has "just barely" crossed into the performance level. They demonstrate just enough to be considered Partially Proficient, Proficient or Highly Proficient.

Lets review the PLDs in the **BLANK** reporting category **as a group** to come up with a summary of the overarching skills necessary for the "just barely" students in each performance level.

Then we will assign different strands to each table to produce their own "just barely" summary statements, then come back together as a group and share what each table has produced and discuss any questions.

When thinking about what a "just barely Proficient" student can do, ensure you are not describing a Partially Proficient student.





## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

### Just Barely Performance Summary Statements

Table	Strands
A	<ul style="list-style-type: none"> <li>Operations and Algebraic Thinking</li> </ul>
B	<ul style="list-style-type: none"> <li>Numbers and Operations in Base Ten</li> <li>Numbers and Operations – Fractions</li> </ul>
C	<ul style="list-style-type: none"> <li>Measurement and Data</li> <li>Geometry</li> </ul>

- In **your table**, type 3 – 4 statements per reporting category for each “just barely” performance level
- Should be summary of high level skills the “just barely” student needs to demonstrate
- Submit your summaries on thumb drive to discuss as group






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This activity will be completed by each individual table. Each table will be assigned 1 to 2 reporting categories. The table leader will type a few statements for each reporting category for each “just barely” performance level.

### Lunch Break

Return at 1:00 PM

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**Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)**

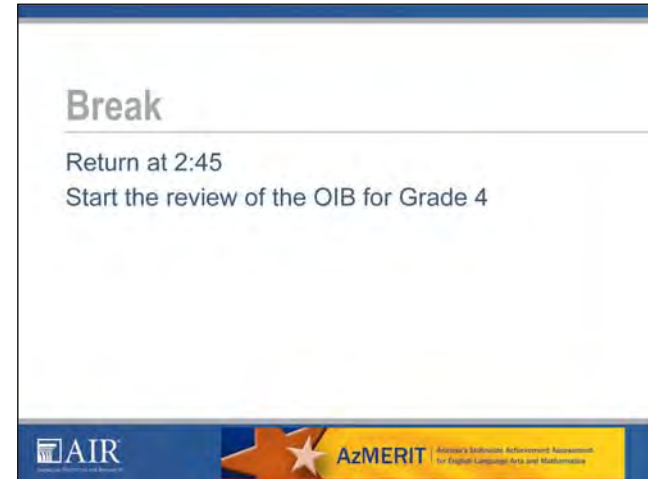
Discuss the just barely summaries across tables.

Encourage the tables to take notes on these documents and ask questions if they do not understand or agree with the descriptions.

Everyone should be on the same page in understanding the skills of "just barely" students.

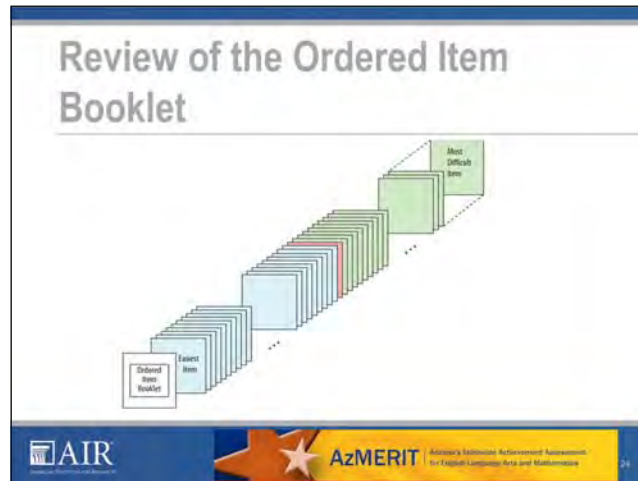
**\*\*Ensure discussion is moving along and not stuck on one particular strand**

Facilitator – 15 minute break for panelist 2:30-2:45





## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Now we'll turn our attention to your next task: review the Ordered Item Book.

The Ordered Item Booklets will present you with a subset of items from the spring 2015 assessments. All items will be presented in order of difficulty; page 1 will present the easiest item, and the last page will present the hardest item. Each "page" in the ordered item booklet refers to an item.

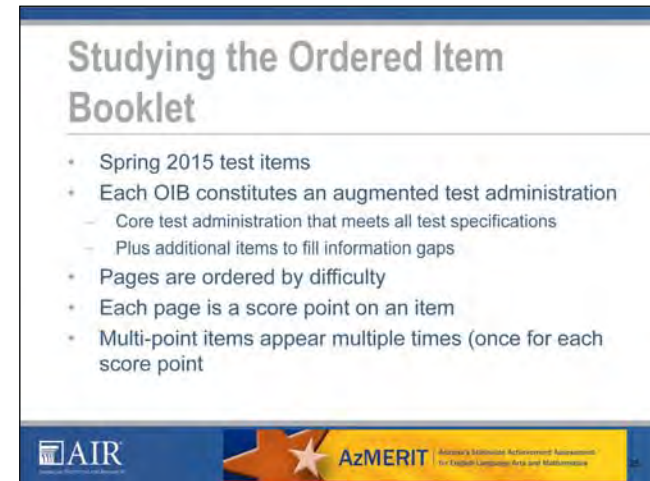
Typically, the OIB has been presented literally as a bound paper book. However, because the AzMERIT includes technology enhanced items that cannot be represented well on paper, you will use an electronic OIB. The OIB is ordered from the easiest to most difficult item, so the first item is the easiest, and the last item is the most difficult. You page forward to see increasingly more difficult items, and you can page backward to see progressively easier items. You will page through the OIB from easiest to the most difficult item. For each item, you will ask what students need to know and be able to do to respond successfully to the item, and what makes this item more difficult than the preceding items.

You can use the accompanying OIB map to keep notes.

Next, we will review:

1. What to consider when reviewing the OIB
2. How to log into the ITS and access the OIB, and how to navigate through each page of the OIB
3. How your OIB Map corresponds to the OIB and your review of each item

Upon arrival tomorrow, you will get started on review of the OIB.



OIB is the other primary tool you will use. The Ordered Item Booklets will present you with the items from the spring 2015 assessments. The content of the items is proportional to the test blueprint.

The OIB consists of all operational items as well as 15-20 field test items to fill in information gap. What that means is that we added items where there was a large gap in item difficulty between operational items so that the items in the OIB appear more fluid in terms of difficulty.

All items will be presented in order of difficulty; page 1 will present the easiest item, and the last page will present the hardest item. Some items will be represented more than once. These items are more engaging than others and are worth more than a single score point. Each "page" in the ordered item booklet will refer to specific score point of the item. We will review the series of items in an online environment.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Composition of Tests



Each test must meet test blueprints specifications

The items on each AzMERIT test are all aligned to the standards reflected in the blueprint

Some content areas are emphasized over others

The OIB includes a test that meets blueprint AND additional items, totaling more than any one student would be administered

Grade 4		
Domain	Min.	Max.
Operations and Algebraic Thinking	22%	26%
Number and Operations in Base Ten	24%	28%
Number and Operations—Fractions	29%	33%
Measurement and Data & Geometry	15%	19%



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On the table are the public test blueprints which can also be found on ADE's website. All tests administered to students met these blueprint requirements. The OIB, which contained all operational items and were augmented with field test items to fill in gaps, meets or very closely meets the public blueprints.

## Studying the Ordered Item Booklet

Consider each item and answer two questions:

- What do students need to know and be able to do to respond successfully to this item?
- Why is this item more difficult than the previous items?

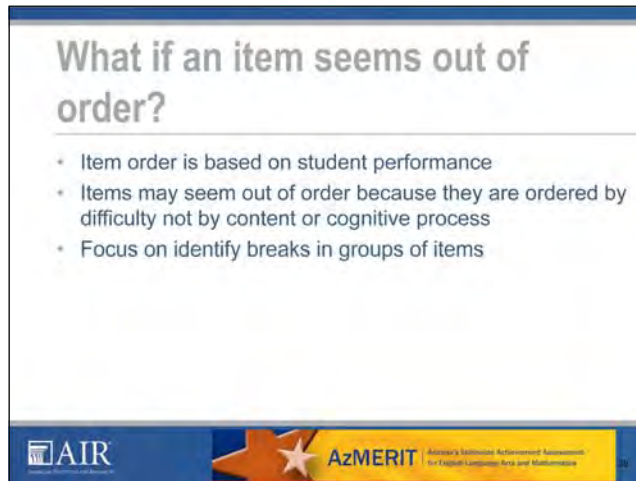



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When studying the OIB, it is important to understand the difference between items in context of the whole OIB. Items that appear earlier in the book are easier, despite possible perceptions otherwise, than items that appear later in the book.

For each item, ask yourself two questions:

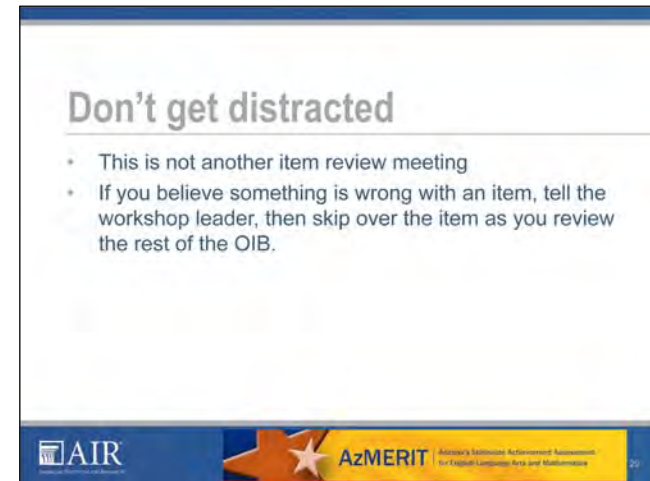
- 1) What do students need to know and be able to do to respond successfully to this item?
- 2) Why is this item more difficult than the previous items?

**Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)**

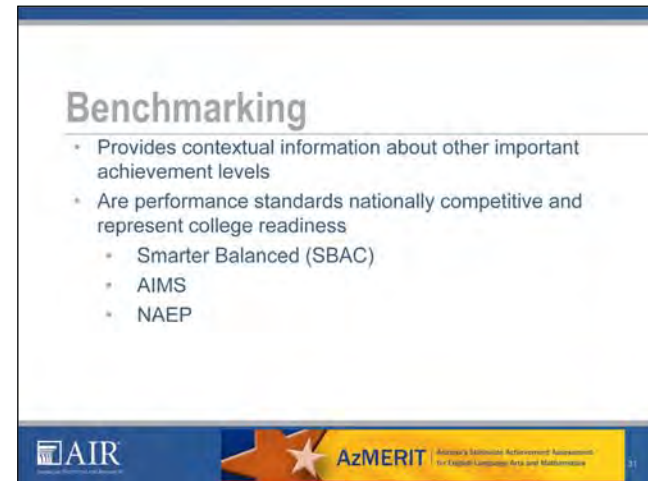
The difficulty of these items is based on students' performance during the 2015 operational assessment. So while a particular item may seem easier or harder to you, the placement in the ordered item book reflects how easy or hard it actually was for Arizona students to perform successfully on these items.

If an item seems out of order to you, remember that an item may not measure what you think it measures. For example, an item may intend for a student to have to know a particular piece of information, but perhaps the students were able to answer using recall from a lesson that was taught recently.

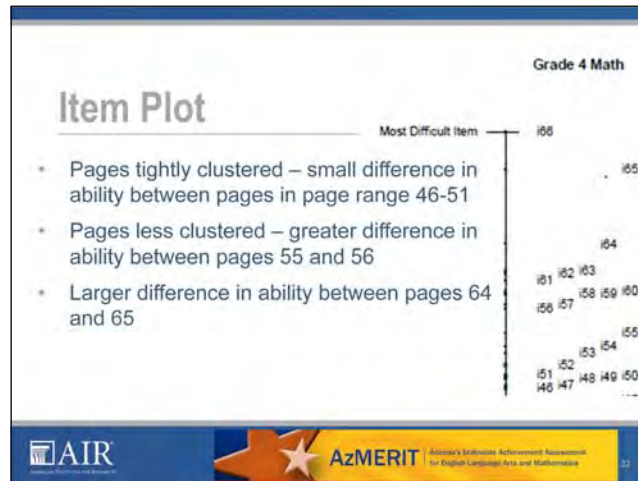
Instead of focusing on one item that may seem out of place to you, try to identify natural breaks or thresholds for groups of items.



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



The item plot shows a graphical representation of the difficulty of each page in the OIB. This is just another way to view the OIB.

Point out NAEP benchmarks.

You can use this map to see where pages are clustered together, versus spread out, in terms of the ability level they correspond to. The clustered pages indicates that the difference in performance impact between adjacent pages is smaller, whereas difference in bookmarks on non-clustered adjacent pages may be more substantial. The item numbers correspond to the page numbers that are included in the OIB map.

**Using the OIB Map**

Page	ITS ID	Point Value	AzCCRS	Item Format	Answer Key	Your Notes - What do students need to know and be able to do to respond successfully to this item?	Your Notes - Why is this item more difficult than the previous items?
1	6538	1 of 1	4.NBT.4	MC4	D		
2	9482	1 of 2	4.NF.2	GI	GI		

- Page number – item order easiest to most difficult
- ITS ID – unique identifier
- Point Value
- Benchmark – maps to Arizona Core Standards
- Item Format
- Answer Key
- Space for notes

The item map will guide your review of the OIB.

- Remember that items are presented in order from easiest to most difficult. Each page number represents one item.
- The ITS ID is shown on both the item map and in your online OIB. You can jump to an OIB page by selecting the ITS ID from the dropdown in the top right portion of the screen.
- The AzCCRS column shows you each item's alignment to the AzCCRS. This corresponds to the content specified within the test's blueprint.
- Item format displays whether an item is multiple choice, indicated by "MC", or an item that requires a student to construct a response, such as "GI" meaning "grid item" or "EQ" meaning "equation". As you review the OIB, items that are not multiple choice will contain instructions on how students are to answer.
- Space for notes – as you review each item in the OIB, remember to think about two questions – 1) What do students need to know and be able to do in order to respond successfully to this question?, and 2) Why is this question more difficult than the one before?

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

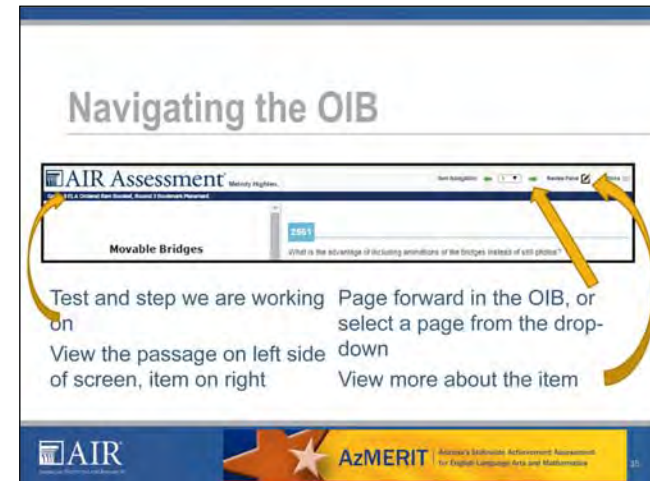


**FACILITATORS:** Move to step "review of OIB"

Facilitators – username is "firstname\_lastname" and your personal password is written on your agendas.

Walk through the different "Review Panel" options

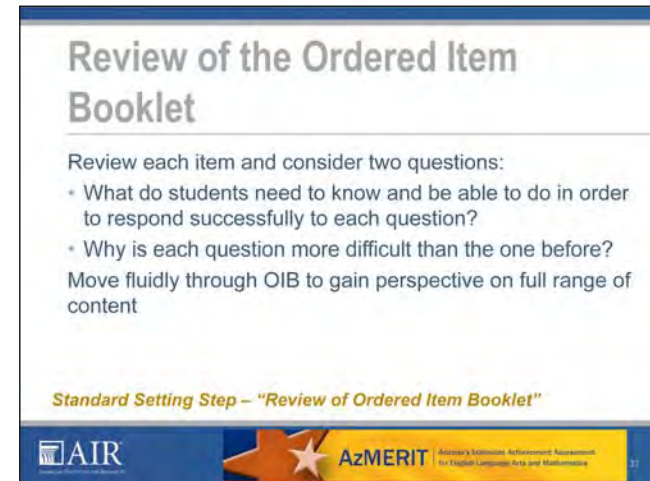
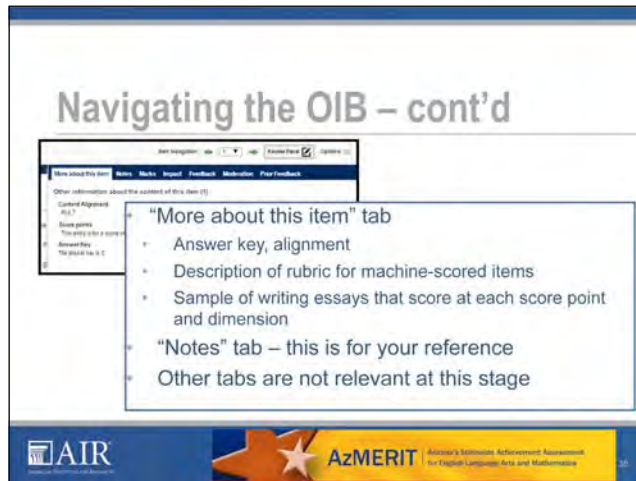
- More about this item
- Notes
- Marks
- Impact
- Feedback
- Moderation
- Prior Feedback



1. Panelist name should appear
2. You will see the title of the grade/subject you are working on
3. Step should say "Review of Ordered Item Booklet"
4. Page forward/backward



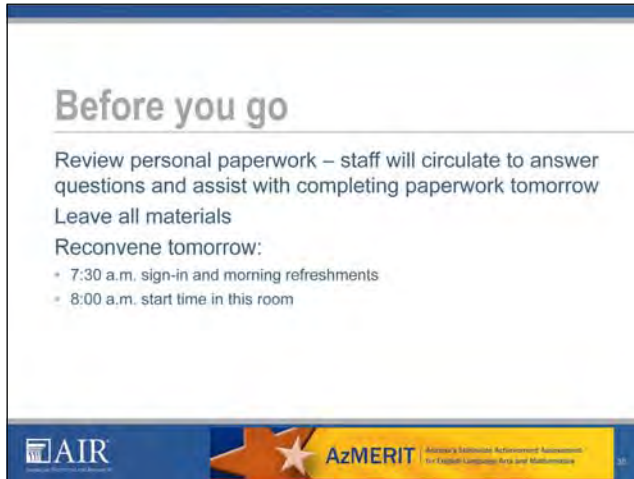
## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



(Leave slide up while panelists review OIB)

You have Writing Rubrics and Writing Anchor books that provide examples of responses for each point and dimension.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)





**Before you go**

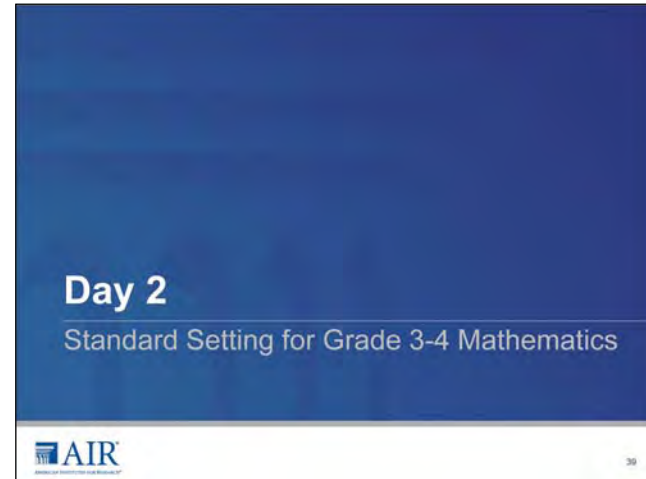
Review personal paperwork – staff will circulate to answer questions and assist with completing paperwork tomorrow

Leave all materials

Reconvene tomorrow:



- 7:30 a.m. sign-in and morning refreshments
- 8:00 a.m. start time in this room

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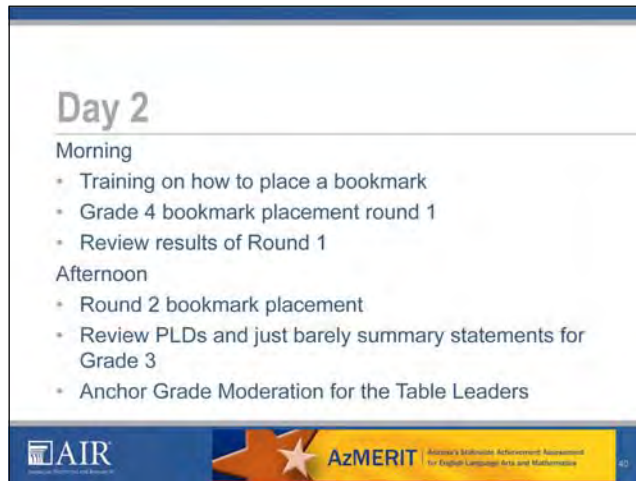
**Day 2**

Standard Setting for Grade 3-4 Mathematics

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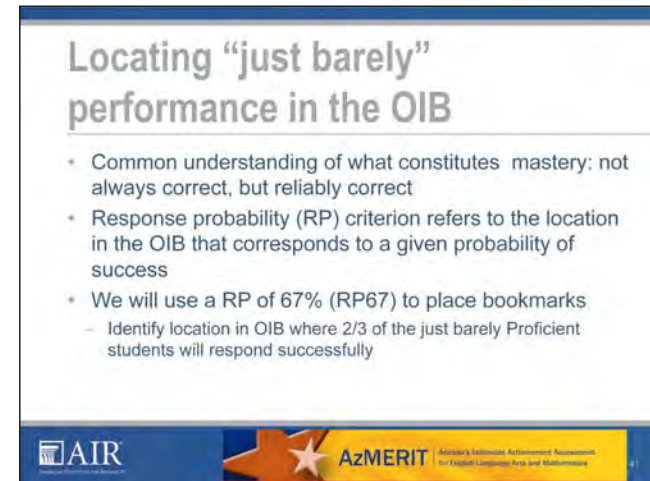
## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Panelist computers will be logged into the ITS and OIB prior to meeting start. Once panelists arrive, they can immediately start re-reviewing the OIB, checking their notes and filling in any notes they missed. As needed, assist panelists with logging into ITS and display password at front of room. Once all panelists arrive, review the activities for the morning.

We will spend the morning working through the Ordered Item Book. Following review of the OIB, we'll discuss how to locate the "just barely" in the OIB and recommend cut scores. We will recommend cut scores and spend time reviewing feedback discussion our recommendations as a group before making another round of recommendations. Follow the second round of recommendations, you will receive performance information such as the percent of students estimated to meet performance standards based on the room's median recommended bookmark page numbers. We will discuss the implications of the performance information, and you will again make a final round of recommendations.

Anchor Grade Moderation is required for Table Leaders but all other panelists are invited to attend.



To place bookmarks, you will find the location in the OIB that differentiates students who are "just barely" from those that are not. To do this, you will evaluate whether "just barely" students can respond successfully to each item in the OIB.

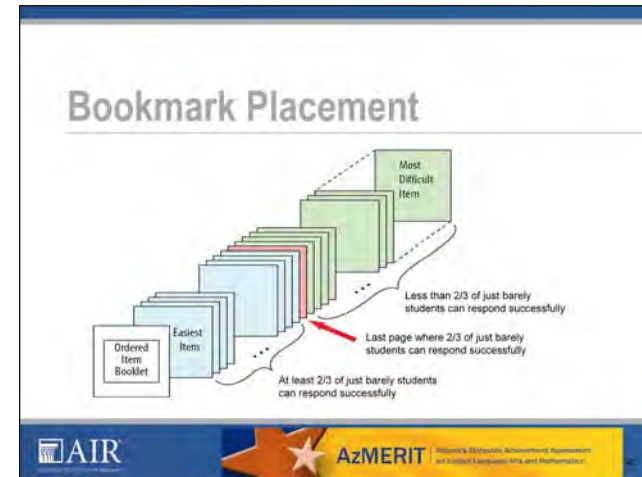
In order to make this judgment, we need to develop a common understanding of what it means to perform successfully on an item. When we say that "just barely" students can perform successfully on an item, do we really mean that such students will always get the item correct? We don't typically operate in absolutes. Students don't always get items correct, for a variety of reasons. Instead, we say that students consistently perform successfully on items or tasks. In a similar vein, for the purpose of this workshop, we will define successful performance as a response probability of 67%, which is referred to as RP67, meaning that we wish to identify the location in the OIB where students who are just barely Proficient have a 2/3 chance of responding correctly to the item. You can think about this as a way to define what it means to say that a student can reliably answer an item correctly – they won't always answer it correctly, but they can reliably answer it.

We can think about this concept in two different ways – if you picture one

**Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)**

“just barely” student, they have a 67% chance of responding correctly to the item. Alternatively, if you visualize a group of 100 “just barely” students, two thirds of the group will respond to the item correctly.

When you place bookmarks, you will work through each page of the OIB and determine whether 2/3 of just barely Proficient students, for example, can respond successfully to the item on each page. This judgment will be the basis for recommending a bookmark.





The OIB is ordered from easiest to most difficult. This fosters an integrated concept of how the test reflects the performance standards. The OIB is the vehicle to make cut score judgments and communicates how the trait increases in **difficulty** as items ascend the scale.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Bookmark Task

- Place bookmark on the last page where 2/3 of students who just barely meet the performance standard will answer correctly
- Fewer than 2/3 of just barely meets students would be expected to respond successfully to the next item in the OIB**
- Set your bookmark on the desired page

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Yesterday, we reviewed the Ordered Item Book which presented a long series of items, ordered from easiest to most difficult. While reviewing, remember our focus was determining what students need to know and be able to do in order to respond to each item successfully, and why each item was more difficult for students than the items before.




Today, we will make performance standards recommendations by identifying a page number of the OIB that will serve as the cut.

For each performance level, you will work through the OIB and consider whether 2/3 of “just barely” students can respond successfully to the item. You will place your bookmark on the last page where 2/3 of students who just barely meet the performance standard will answer correctly. This means that fewer than 2/3 of just barely meets students would be expected to respond successfully to the next item in the OIB.

Record the bookmarked page number in the bookmark placement sheet.

## Bookmark Placement – “Marks”

- Use the “Marks” tab to place your bookmarks
- For each performance level, navigate to the page you want to select, and click “Set Here”
- When complete, click “Confirm marks”

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We will use a Bookmark Placement Sheet to submit recommendations. You will write the page number for the recommended cut score for all three different performance standards – Partially Proficient, Proficient, and Highly Proficient

In Round 1, you will make your initial recommendations, and write in your panelist ID in the appropriate box on the form before turning it in. You will receive the form back and use the same form to make recommendations in subsequent rounds.

For example, in the starred box, you write your Round 1 recommended page number for the Proficient cut. You will identify the last page in the OIB that 2/3 of “just barely” Proficient students can successfully respond to; fewer than 2/3 of “just barely” students will be able to successfully respond to the very next item.

In the Partially Proficient box, you will write the page number of the last page in the OIB that 2/3 of students of “just barely” Partially Proficient students can respond successfully to. Fewer than 2/3 of those students who “just barely” approach Partially Proficient will be able to respond successfully to the next item.



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

And finally, in the Highly Proficient box, you will write the page number of the last page in the OIB that 2/3 of the students that “just barely” Highly Proficient students can respond successfully to.

Remember that you will have an opportunity to discuss your recommendations among your group after everyone has completed this task, and you will have a chance to then change your recommendation.

**Don't get confused or distracted**

- Avoid percent correct thinking
  - There is no relationship between the number of pages in the OIB and the number of points needed to be Proficient in a standard
  - Page numbers in the OIB are **not** equal to raw scores on the test
  - Page number 30 in an 60 page OIB is **not** the same as 50% correct on the test
- The ordering of items in the OIB is **not** the same as the ordering of items on the test.



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It is important to understand that a page number in the OIB does not equate to a number of items a student must get correct to meet a standard at that bookmark. There is no relationship between the pages in the OIB and the number of points needed to achieve a standard.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Practice worksheet

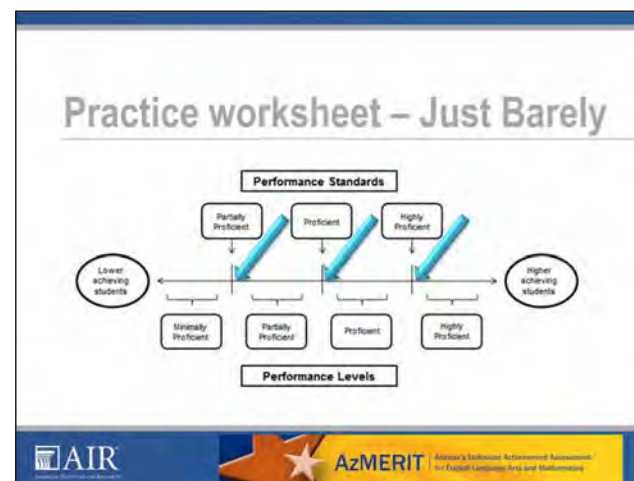
- Review the practice worksheet
- We will discuss the worksheet as a group
- Address any areas of confusion

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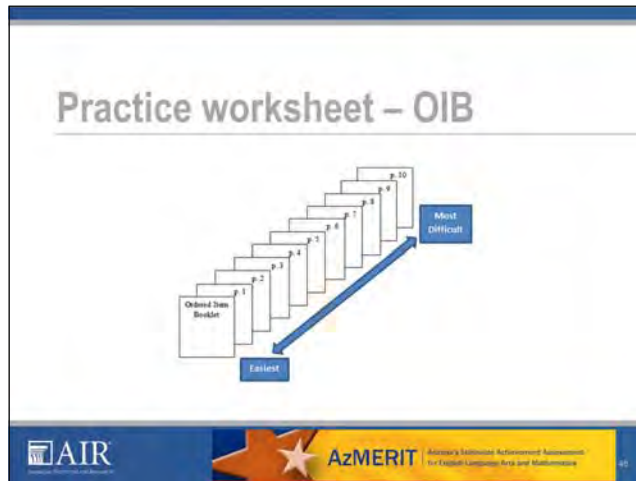
Next, we're going to complete a practice worksheet; the goal is to assess whether the training so far has clearly explained the mechanics of the bookmark procedure. This will help to identify which concepts that need additional clarification before we place our bookmarks. Please take a few minutes to review the worksheet, and then we will review it as a group.

(Give panelists time to complete worksheet. Then walk through worksheet and discuss results, and identify which concepts panelists do not grasp yet.)



As necessary, review that “just barely” means they are just barely categorized as being described by the performance level descriptors. Key idea: These are not the average student.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



The item on page 6 is MORE DIFFICULT than the item on page 5. Review with panelists as necessary:

- Items are presented from easiest to most difficult.
- Difficulty is based on student performance on 2015 operational assessments. It is not based on test developers' judgments.

### Practice worksheet – OIB review

- What does a student in Arizona have to know and be able to do to achieve 1 of 2 points on this item?
- Why is this page more difficult than previous pages?
- Can 2/3 of my just barely students get 1 of 2 points on this item?

Page	Item ID	Point Value	Standard	Item Format	Answer Key	Scoring Rubric Page
4	555	1 of 1	4.NF.3	MC4	C	
5	556	1 of 2	4.O.1	GR	GR	7
6	557	1 of 1	4.NBT.2	MC4	C	



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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

### Practice worksheet – OIB review

- What does a student in Arizona have to know and be able to do to achieve 1 of 2 points on this item?
- Why is this page more difficult than previous pages?
- Can 2/3 of my just barely students get 1 of 2 points on this item?






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### Practice worksheet – Bookmark Placement

- **At least** 2/3 of just barely students can achieve score point on page 32
- **At least** 2/3 of just barely students can achieve score point on page 33
- **Less than** 2/3 of just barely students can achieve score point on page 34

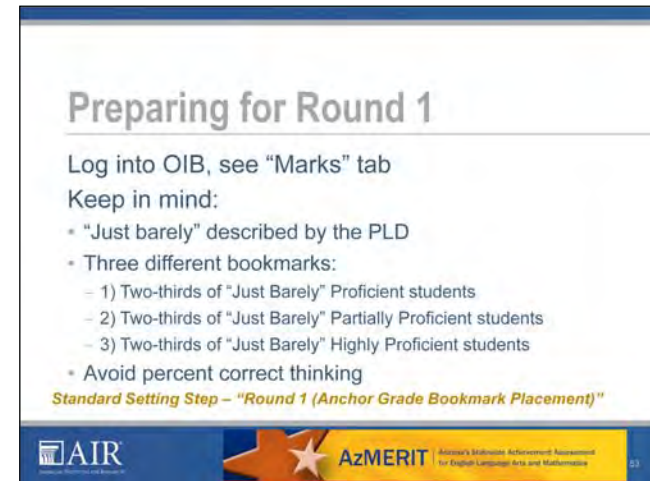
	Page Number of Bookmark Placement			
	Partially Proficient	Proficient	Highly Proficient	Initials
Round 1		33		
Round 2				

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Review that bookmark should be placed on the last page where 2/3 of students described by the “just barely” PLD can be expected to respond successfully to the item. On the following page, less than 2/3 of just barely students would respond successfully. (Or just barely students would respond successfully less than 2/3 of the time).

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Remember, we will focus our attention on a specific subset of students within each performance level, those that "just barely" within the performance level. Based on your parsing of the PLDs, you all have a list of the characteristics that differentiate students who are "just barely" within the performance level from those who are below the performance level, and a descriptor for students that "just barely" meet the performance levels.

In addition, it is important that we define successful performance on test items uniformly. For purposes of this workshop, we define successful performance on an item as a response probability of 67%. We wish to identify the location in the OIB where students who are "just barely" within the performance level have a 2/3 chance of responding correctly to the item.

We can think about this concept in two different ways – if you picture one "just barely" student, they have a 67% chance of responding correctly to the item. Alternatively, if you visualize a group of 100 "just barely" students, two thirds of the group will respond to the item correctly.

Remember that the page numbers in the OIB have no relationship to the number or percent of items that at student has to perform successfully on in order to meet the recommended standard.



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Are you ready? Completing the Readiness Form

**Preparation for Round 1 – Proficient, Partially Proficient, and Highly Proficient**



	Yes	No
a. The workshop training has prepared me to review the Proficiency Level Descriptions.	<input type="checkbox"/>	<input type="checkbox"/>
b. The training fully explained the concept of a student who just barely meets the criteria described in the AzMERIT Performance Level Descriptions.	<input type="checkbox"/>	<input type="checkbox"/>
c. The workshop training has prepared me to review the Ordered Item Book (OIB).	<input type="checkbox"/>	<input type="checkbox"/>
d. The workshop training has prepared me to fill out the bookmark placement sheet.	<input type="checkbox"/>	<input type="checkbox"/>

I have answered, "Yes" to the above questions and I understand what I need to do to place my Bookmarks.

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

If I answered "No" to any of the above questions, I received additional training.



Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

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## Round 1 Steps

- Sign the Readiness Form and return to Table Leader
- Set your bookmark
- Confirm your bookmarks
- Adjourn until review of the results of Round 1 (10:30am)

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for English Language Arts and Mathematics

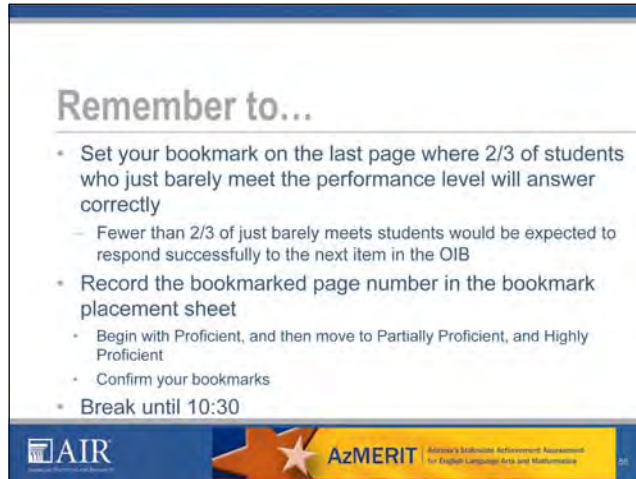
Remove the readiness form from your folders. This form should say "Preparation for Round 1 – Partially Proficient, Proficient, and Highly Proficient" near the top.

Review the specific bullets on the form, and please indicate whether you feel you understand, and are ready to place your bookmark. If you answer "No" to any questions, please notify a workshop staff member before continuing.

Let's take a minute to complete this form. Please turn them into your table leaders.

(Note: In the event that a panelist indicates they are not ready, the facilitator will work with the individual(s) to ensure they understand the procedures.)

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Note: Continue to display this slide while panelists are placing their bookmarks.

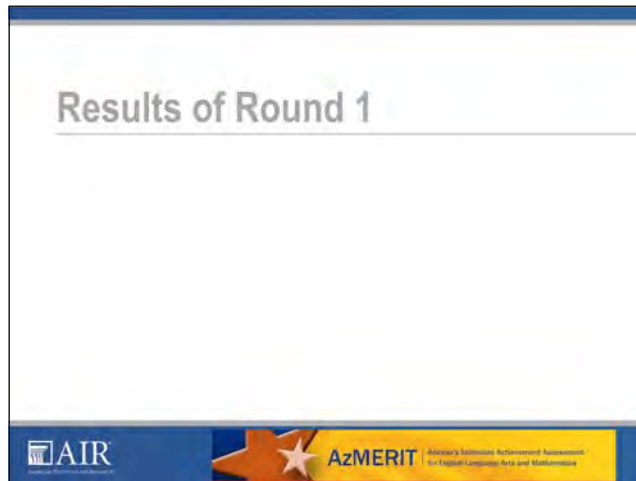
Remember, you are seeking to divide the OIB into two sets of items, so don't get hung up if you find what appears to be a particularly difficult item in the middle of otherwise relatively easy items. You are seeking to identify the set of items that students who "just barely" within the performance level can respond to successfully from those items that students who may not meet the standards can also respond to successfully. You will identify the last page in the OIB that 2/3 of the "just barely" students at the performance level can successfully respond to; fewer than 2/3 of "just barely" students will be able to successfully respond to the very next item.

It is important that everyone start with the Proficient standard, then move to the Partially Proficient standard and finish your bookmark placement with the Highly Proficient standard.

*When you have completed placing your bookmarks and have initialed the bookmark placement sheet, please hand it to your table leader. Table leaders, when you have all of your tables sheets please alert myself or the room assistant.*

*We will take a short 15 minute break after everyone has completed placing their bookmarks.*

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



### Round 1 Recommended Standards

	Partially Proficient	Proficient	Highly Proficient
Room Median			

- The median page numbers become the panel's recommended cuts
- Discuss results of Round 1:
  - Agreement data - review other panelists' recommendations within tables then as a whole group

*Standard Setting Step – "Results of Round 1 (Feedback Data)"*

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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Agreement Feedback Discussion

- Are you comfortable with your bookmark placement in the light of feedback?
- Do you still expect that students who just barely meet the standards can respond successfully?
- Remember:
  - Item-based rationales for all bookmark placements.
- Discuss within tables, beginning with Proficient, then Partially Proficient and Highly Proficient




50

From these discussions, you may revise your judgment about the bookmark placement and choose to move your bookmark placement in Round 2. However, there is no requirement or expectation that you will move your bookmarks. From experience, we do expect convergence from Round 1 to Round 2, but consensus is not a goal.

This can serve as a good jumping off point for discussion; for example, panelists who placed their bookmarks at the lowest and highest pages can share why they felt those were the right cut points. After discussing the feedback with your table members, you will discuss your bookmarks with the room as a whole.

NOTE: Have panelists discuss their findings within their tables. They should be able to see the cuts set by the other panelists at their table, all of the table medians and room medians.

## Agreement Data

More about this item   Notes   Marks   Impact   **Feedback**   Moderation   Prior Feedback

Summary of tentative standards

Table 1: Pages corresponding to room and table medians



	Partially Proficient	Proficient	Highly Proficient
Room	15	27	39
Table 1	15	27	35
You	15	27	35

Footnote goes here

Table 2: Bookmarks placed by panelists

Table	First Name	Last Name	Partially Proficient	Proficient	Highly Proficient
1	Shelly	Hughes	15	27	39

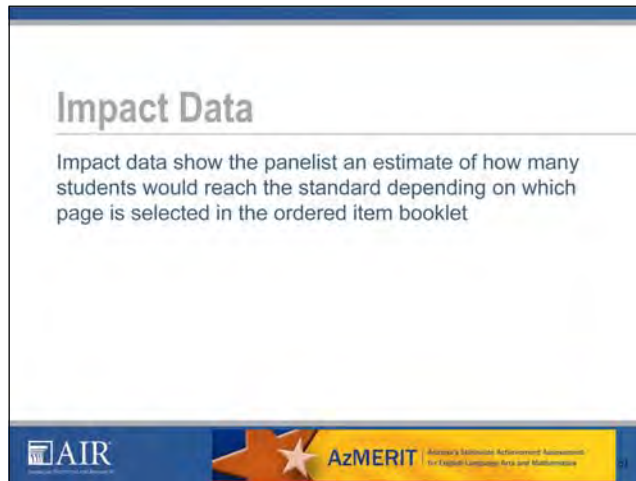
**Standard Setting Step – “Results of Round 1 (Feedback Data)”**

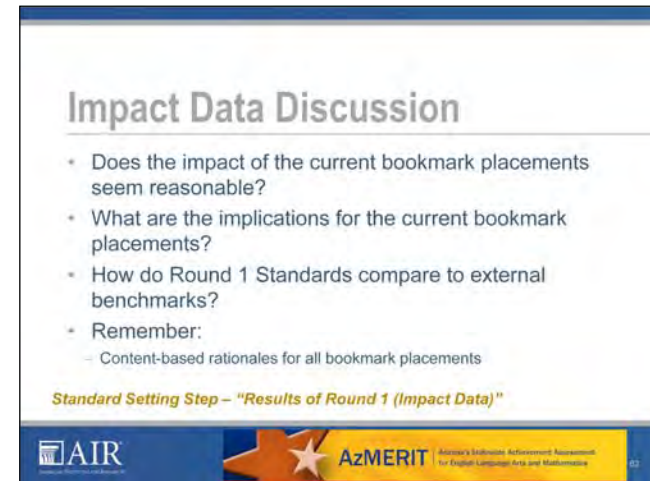
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NOTE: Facilitate discussion within the room. Panelists should share what knowledge and skills required by the items or the PLDs led to recommendations.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



You will also be presented with impact data for each subject. This is the percentage of students who would reach or exceed the standard based on the item page in the Ordered Item Booklet. With this information, you will ask yourself if the outcome seems reasonable. While impact data can be informative, placement of your bookmarks should always be guided by content considerations to ensure that students meeting the performance standard are accurately described by the PLD for each level.





## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

### Impact Data Discussion

- Does the impact of the current bookmark placements seem reasonable?
- What are the implications for the current bookmark placements?
- How do Round 1 Standards compare to external benchmarks?
- Remember:
  - Content-based rationales for all bookmark placements

*Standard Setting Step – “Results of Round 1 (Impact Data)”*




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63

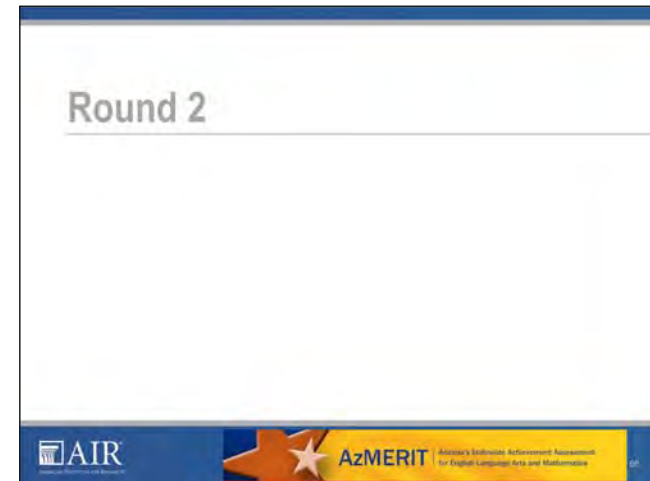
### Impact Based on Round 1 Median Cut Scores



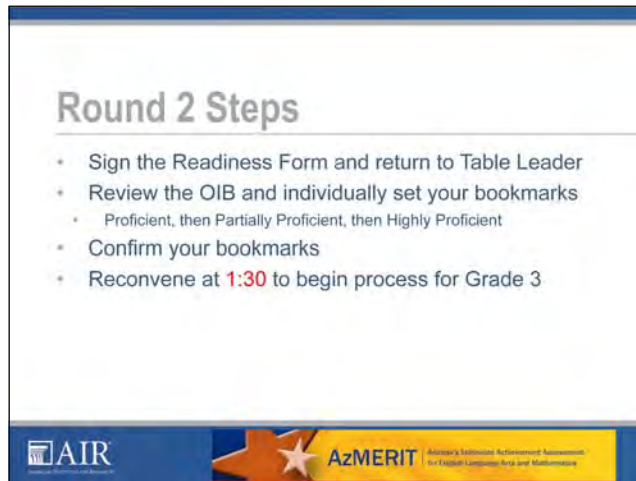
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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



NOTE: Collect readiness forms with Round 2 initialed by panelists







## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

### Review of PLDs & Just Barely Summary Statements – Grade 3


- Review PLDs
- Type 3 – 4 statements per reporting category for each “just barely” performance level
  - Should be summary of high level skills the “just barely” student needs to demonstrate
  - Submit your summaries on thumb drive to discuss as group

Table	Strands
A	<ul style="list-style-type: none"> <li>• Operations and Algebraic Thinking</li> </ul>
B	<ul style="list-style-type: none"> <li>• Numbers and Operations in Base Ten</li> <li>• Numbers and Operations – Fractions</li> </ul>
C	<ul style="list-style-type: none"> <li>• Measurement and Data</li> <li>• Geometry</li> </ul>

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Each table will be assigned 1 to 2 reporting categories. The table leader should type a few statements for each reporting category for each “Just Barely” performance level.

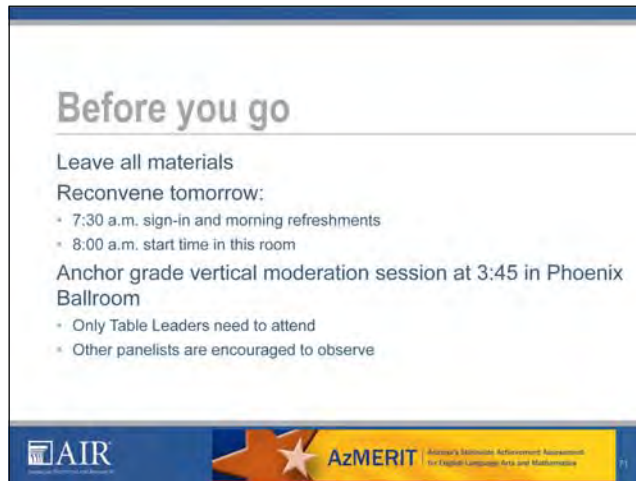
### Just Barely Performance Summary Discussion

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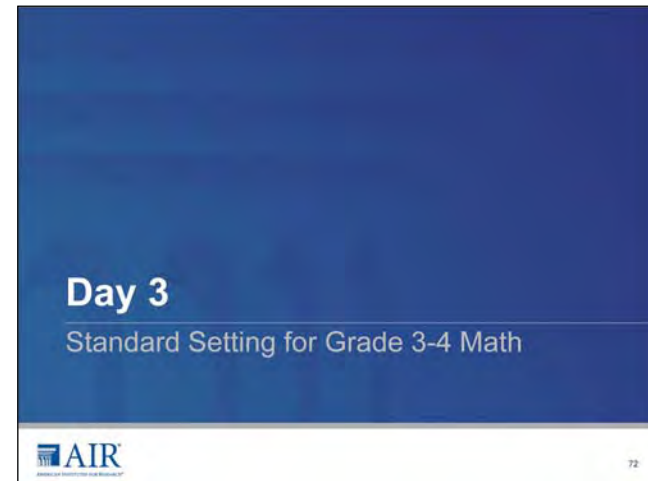
Discuss the just barely summaries across tables.

Encourage the tables to take notes on these documents.


Everyone should be on the same page in understanding the skills of “just barely” students.

**Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)**

Only the Table Leaders are required to participate in the anchor grade vertical moderation but all other panelists are invited to sit in.



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)




**Day 3**

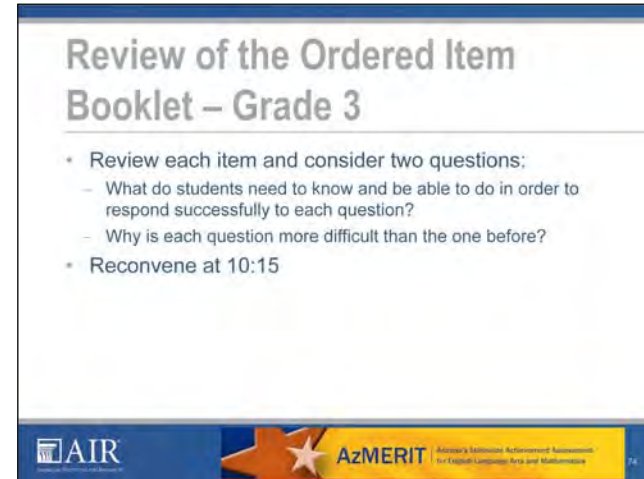
This morning:

- Review OIB for Grade 3
- Debrief of moderation session and results
- Round 1 bookmark placement for Grade 3

This afternoon:



- Review results of Round 1 for Grade 3
- Round 2 bookmark placement for Grade 3
- Wrap up
- Final vertical moderation and workshop debrief

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**Review of the Ordered Item Booklet – Grade 3**

- Review each item and consider two questions:
  - What do students need to know and be able to do in order to respond successfully to each question?
  - Why is each question more difficult than the one before?
- Reconvene at 10:15

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(Leave slide up while panelists review OIB)

Remember that...

Each OIB constitutes an augmented test

Pages are ordered by difficulty

Each page is a score point on an item

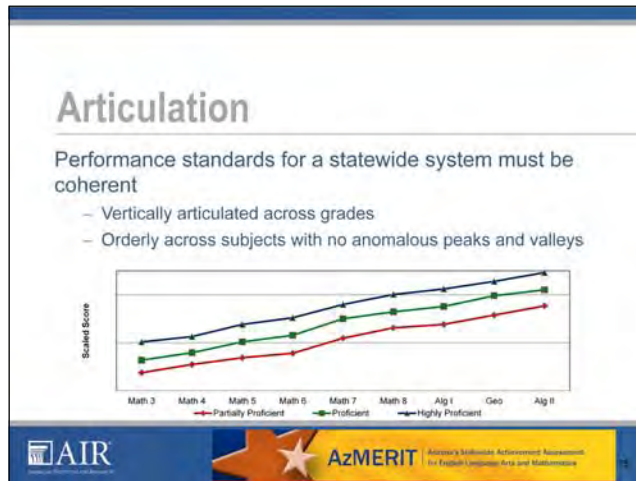
Multi-point items appear multiple times (once for each score point)

Item order is based on student performance

Items may seem out of order because they are ordered by difficulty not by content or cognitive process

If you believe something is wrong with an item, tell the workshop leader, then skip over the item as you review the rest of the OIB

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



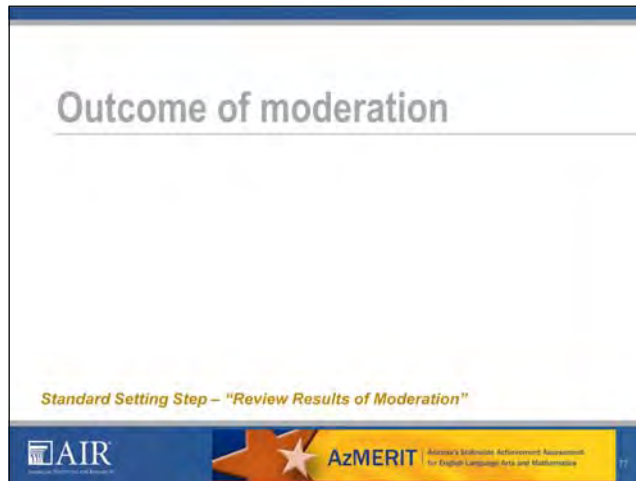
### Vertical articulation strategy

- We recommended standards in Anchor Grades 4, 6, 8, Geometry and Algebra 2 this week
- Vertical moderation
- Extrapolate/interpolate standards for the Adjacent Grades 3, 5, 7, and Algebra 1

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Following recommendation of initial grade performance standards in anchor grades" table leaders were convened to engage in a review and moderation of the initial recommendations. The purpose of the review was to ensure that the standard setting workshops produce a system of cut scores that are coherent across grade levels. Prior to moderation, all panelist deliberations have been focused on placement of cut scores for a single grade. The panelists who participated in the moderation were asked to recommend adjustments. We will provide you with the recommendations resulting from the moderation session.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)




NOTE: Debrief panelists on moderation activities and results: initial recommendations, major discussion, and resulting changes in anchor grade bookmarks



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)


**ELA Performance Standards**

Grade	Ability Estimates		
	Partially	Proficient	Highly
3	-0.01	0.29	1.36
4	0.32	0.78	1.98
5	0.68	1.27	2.61
6	1.06	1.77	3.22
7	1.39	2.05	3.35
8	1.70	2.40	3.48
9	1.93	2.56	3.51
10	2.22	2.70	3.53
11	2.30	2.84	3.58

 AIR

**ELA Anchored and Interpolated Bookmarks**

Grade	Anchored and Interpolated Bookmarks		
	Partially	Proficient	Highly
3	19	25	49
4	19	32	57
5	15	28	53
6	16	30	58
7	16	37	62
8	19	38	62
9	18	32	55
10	13	32	59
11	13	29	52

 AIR

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



### Math Performance Standards

Grade	Ability Estimates		
	Partially	Proficient	Highly
3	-0.20	0.95	2.55
4	1.01	2.08	3.53
5	2.23	3.16	4.49
6	3.42	4.31	5.45
7	4.29	5.06	5.99
8	5.00	5.73	6.51
9	5.38	6.16	7.34
10	5.78	6.57	8.11
11	6.32	7.04	8.38


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American Institutes for Research



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

**Math Anchored and Interpolated Bookmarks**

Grade	Anchored and Interpolated Bookmarks		
	Partially	Proficient	Highly
3	9	32	53
4	10	35	58
5	5	27	52
6	9	26	46
7	11	30	46
8	15	28	44
9	17	36	56
10	16	30	52
11	15	29	49

 AIR

**Adjacent grade performance standards**

With initial grade standards in hand, we calculated suggested adjacent grade performance standards

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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Setting Adjacent Grade Standards is Same



Review PLDs and summarize just barely students

Review OIB, asking two questions

- What do students need to know and be able to do to respond successfully
- What makes this item more difficult than previous items

Judgment task

- 2/3 of student just barely described by Proficient PLD





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## But Different

Examine the suggested bookmark placement in the Grade 3 OIB in relation to the characteristics of students who are just barely described by PLD

- Can 2/3 of just barely Proficient students respond successfully?
- If not, can a bookmark placement that matches the PLD be identified within a page or two of the interpolated cut?





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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Adjacent Grade bookmark page numbers – Grade 3

Partially Proficient	Proficient	Highly Proficient

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Insert adjacent grade page numbers. Have panelists mark this page on their Item Map.

Round 1



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## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Round 1 Steps

- Sign the Readiness Form and return to Table Leader
- Review the OIB and set your bookmarks
- Confirm your bookmarks

Standard Setting Step – “Round 1 Bookmark Placement”

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## Bookmark Placement

Examine the Grade 3 OIB page in relation to the Just Barely PLD

- Can 2/3 of just barely students respond successfully to the item?
- If yes, record this as your bookmark.
- If not, can a bookmark placement that matches the PLD be identified within a page or two of the interpolated cut?

Set your bookmark on the desired page

Confirm your bookmark

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Note: Continue to display this slide while panelists are placing their bookmarks.

After bookmark placement, we will break for lunch at 12:00

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)

## Agreement Data

[More about this item](#) [Notes](#) [Marks](#) [Impact](#) [Feedback](#) [Moderation](#) [Print Feedback](#)

Summary of tentative standards

Table 1: Pages corresponding to room and table numbers

	Partially Proficient	Proficient	Highly Proficient
Room	15	27	39
Table 1	15	27	39
You	15	27	39

Footnote goes here

Table 2: Bookmarks placed by panelists

Table	First Name	Last Name	Partially Proficient	Proficient	Highly Proficient
1	Melody	Hughes	15	27	39

**Standard Setting Step – “Results of Round 1 (Feedback Data)”**

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NOTE: Facilitate discussion within the room. Panelists should share what knowledge and skills required by the items or the PLDs led to recommendations.

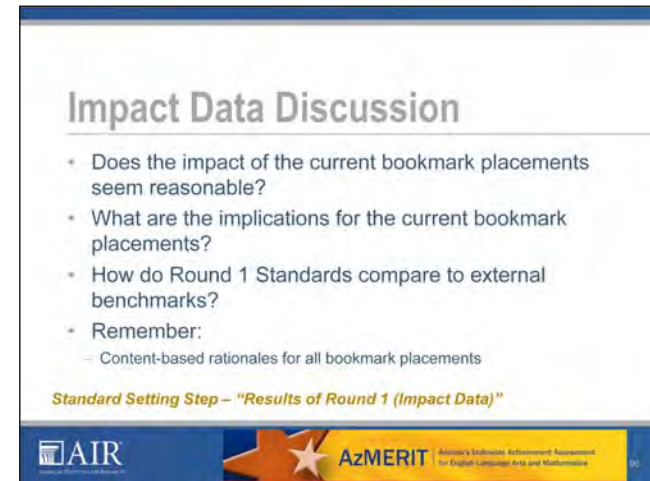
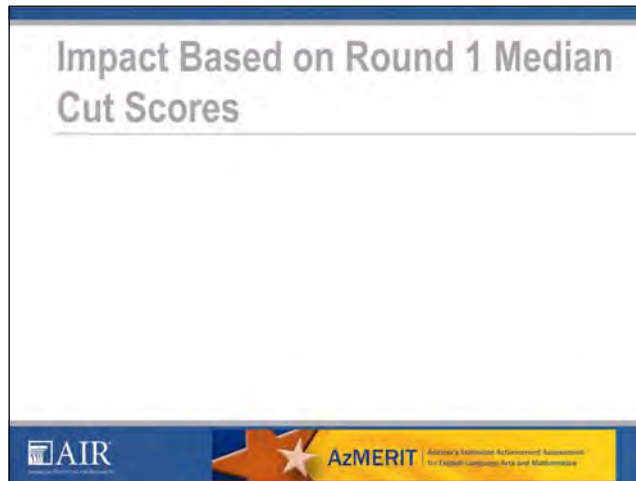
## Agreement Feedback Discussion

- Are you comfortable with your bookmark placement in the light of feedback?
- Do you still expect that students who just barely meet the standards can respond successfully?
- Develop item-based rationales for all bookmark placements.

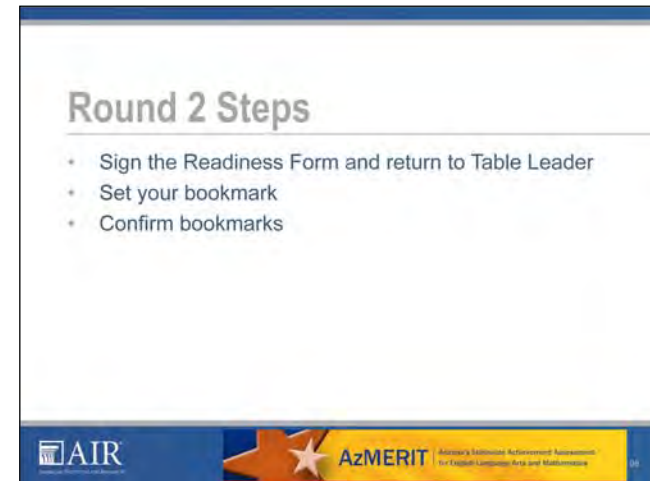
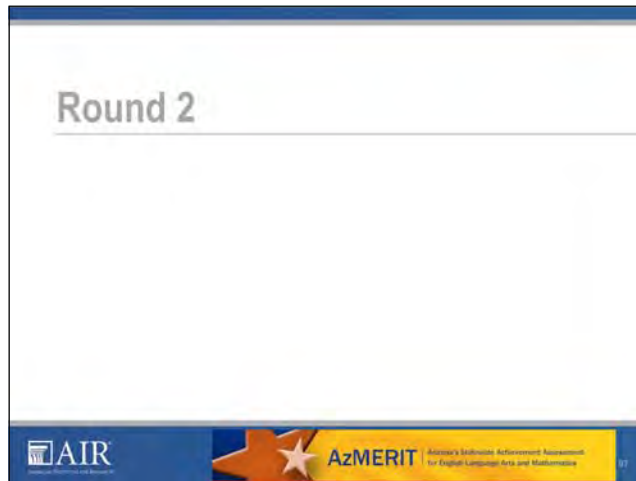
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From these discussions, you may revise your judgment about the bookmark placement and choose to move your bookmark placement in Round 2. However, there is no requirement or expectation that you will move your bookmarks. From experience, we do expect convergence from Round 1 to Round 2, but consensus is not a goal.

## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



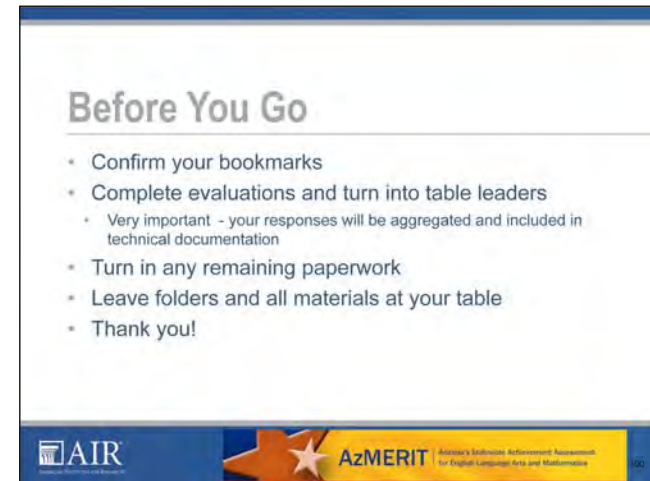
## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



## Presentation C.2. Sample Workshop Presentation and Script (3-4 Math)



Following this meeting, another panel will convene that includes the table leaders. The purpose of this final meeting is to allow table leaders to review the system of standards as a whole so that they can review the appropriateness of the recommended cut scores as they relate to the performance level descriptors and their impact on students who meet each performance standard.



Thank you for your participation and hard work these past two days. Please remember to keep the content of the test items and the discussions about specific recommendations secure, and please feel free to share information about the standard setting process and your experience with colleagues and other individuals.

Please take your time to fill out the workshop evaluation. We know that you all often have to fill out evaluations to conclude meetings or trainings, but please take the time to thoughtfully fill out the evaluation. The results of the evaluation will be included in the Standard Setting Technical Report that will be available to the public. Filling out the evaluation also provides us with feedback to improve the standard setting process and to assure the validity of the whole process.



## **Appendix D – Performance Level Descriptors**

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	3. RL.1	asks and answers questions to demonstrate understanding of a text.	asks and answers explicit questions to demonstrate understanding of a text, referring to the text as the basis for answers.	asks and answers questions to demonstrate understanding of a text, referring explicitly to the text as the basis for answers.	asks and answers complex questions to demonstrate understanding of a text, referring explicitly to the text as the basis for answers and making inferences where necessary.
Detailed	3.RL.2	identifies details that recount stories; identifies explicitly stated central messages, lessons, or moral.	identifies key details that recount stories; determines central messages, lessons, or moral.	recounts stories, including fables, folktales, and myths from diverse cultures; determines the central message, lesson, or moral and explains how it is conveyed through key details in the text.	provides key details that completely recount stories; determines implicitly stated central messages, lessons, or morals; and explains how these are conveyed through key details in the text.
Detailed	3.RL.3	identifies basic elements (e.g., traits, motivations, or feelings) of characters in a story.	identifies basic elements (e.g., traits, motivations, or feelings) of characters in a story and explains how these elements contribute to the story.	describes characters in a story (e.g., traits, motivations, or feelings) and explains how their actions contribute to the sequence of events.	describes complex elements (e.g., traits, motivations, or feelings) of complex characters in a story and explains how their actions contribute to a complex sequence of events.
Detailed	3.RL.4	uses easily located, explicitly stated details in order to determine the meanings of familiar words and phrases as they are used in a text	uses details from the text in order to determine the meaning of words and phrases as they are used in a text.	determines the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.	determines the meaning of unfamiliar words and phrases as they are used in a text, distinguishing literal from nonliteral language.
Detailed	3.RL.5	refers to easily identified parts of stories, dramas, and poems, using terms such as chapter, scene, and stanza.	refers to parts of stories, dramas, and poems, using terms such as chapter, scene, and stanza; identifies how one part builds on an earlier section.	refers to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describes how each successive part builds on earlier sections.	refers to intricate parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; explains how each successive part builds on earlier sections.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	3.RL.6	identifies the points of view of the narrator or characters.	distinguishes his or her own point of view from explicitly stated points of view of the narrator or characters.	distinguishes his or her own point of view from that of the narrator or those of the characters.	distinguishes his or her own point of view from implicitly stated points of view of the narrator or those of the characters.
Detailed	3.RL.7	uses specific aspects of a text's simple illustrations to understand the text and identifies explicit details about how the illustrations reflect characters, setting, or mood.	uses specific aspects of a text's illustrations to understand the text and makes lower-level inferences about how the illustrations reflect characters, setting, or mood.	explains how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., emphasize aspects of a character or setting, create mood).	analyzes how specific aspects of a complex text's illustrations contribute to a more thorough understanding of the text; makes higher-level inferences about how the illustrations reflect characters, setting, or mood.
Detailed	3.RL.8	N/A	N/A	N/A	N/A
Detailed	3.RL.9	identifies simple and explicit themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	describes explicitly stated themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	compares and contrasts 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).	compares and contrasts highly complex, implicitly stated themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series); makes inferences to identify support used by authors.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Reading: Informational Text					
Detailed	3.RI.1	asks and answers questions to demonstrate understanding of a text.	asks and answers explicit questions to demonstrate understanding of a text, referring to the text as the basis for answers.	asks and answers questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	asks and answers complex questions to demonstrate understanding of a text, referring explicitly to the text as the basis for answers and making inferences where necessary.
Detailed	3.RI.2	identifies an explicitly stated main idea of a text; identifies key details to recount the main idea.	determines the main idea of a text; identifies key details to recount the main idea.	determines the main idea of a text; recounts key details and explains how they support the main idea.	determines an implicitly stated main idea of a text; recounts key details and explains how they support the main idea.
Detailed	3.RI.3	identifies historical events, scientific ideas, or some steps in technical procedures in a text, using language with an attempt at time or sequence.	describes simple relationships between historical events, scientific ideas or concepts, or steps in technical procedures in a text, using vague language that pertains to time, sequence, and cause/effect.	describes 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.	analyzes complex relationships between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text with immersing application, using academic language that pertains to time, sequence, and cause/effect.
Detailed	3.RI.4	uses easily located, explicitly stated details in order to determine the meaning of basic academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.	uses details from the text in order to determine the meaning of basic academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.	determines the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.	determines the meaning of advanced academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
Detailed	3.RI.5	uses basic text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information explicitly stated in the text.	uses basic text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic.	uses text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.	uses complex text features and advanced search tools (e.g., key words, sidebars, hyperlinks) to analyze and interpret information relevant to a given topic efficiently.
Detailed	3.RI.6	identifies the point of view of the author of a text.	distinguishes his or her own point of view from an explicitly stated point of view of the author of a text.	distinguishes his or her own point of view from that of the author of a text.	distinguishes his or her own point of view from an implicitly stated point of view of the author of a text.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	3.RI.7	identifies information gained from simple illustrations (e.g., maps, photographs) and the explicit statements within a text to demonstrate understanding of the text.	uses information gained from simple illustrations (e.g., maps, photographs) and words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).	uses 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).	analyzes information gained from complex illustrations (e.g., maps, photographs) and the inferences within a text to demonstrate understanding of the text.
Detailed	3.RI.8	identifies the simple connections between particular sentences in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	identifies the logical connections between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	describes the logical connections between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	describes the complex connections between particular sentences and paragraphs in a text using textual evidence (e.g., comparison, cause/effect, first/second/third in a sequence).
Detailed	3.RI.9	identifies the most important points and key details presented in a text.	describes the most important points and key details presented in two texts on the same topic.	compares and contrasts the most important points and key details presented in two texts on the same topic.	compares and contrasts the most important points and key details presented in two texts on the same topic and provides textual evidence to support these comparisons.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Writing</b>					
Detailed	3.W.1	writes an opinion piece that lacks organization, does not include an introduction or conclusion or includes an ineffective one, and provides irrelevant reasons to support the opinion.	writes a loosely organized opinion piece with a simple introduction and conclusion, and provides limited reasons to support the opinion.	writes a well-organized opinion piece that introduces the topic, provides reasons that support the opinion, uses linking words and phrases, and provides a concluding statement.	writes a well-organized, multi-paragraph opinion piece that effectively introduces the topic, provides evidence that effectively supports the opinion, uses linking words and phrases, and provides an effective concluding statement.
Detailed	3.W.2	writes an explanatory piece that lacks organization; does not include an introduction or conclusion or includes an ineffective one; and provides irrelevant facts, definitions, and details to support the topic.	writes a loosely organized explanatory piece with a simple introduction and conclusion; and provides limited facts, definitions, and details to support the topic.	writes a well-organized explanatory piece that introduces the topic; provides facts, definitions, and details to support the topic; uses linking words and phrases; and provides a concluding statement.	writes a well-organized, multi-paragraph explanatory piece that effectively introduces the topic; provides facts, definitions, and details that effectively support the topic; uses linking words and phrases; and provides an effective concluding statement.
Detailed	3.W.4-6	produces writing with guidance and support that includes incomplete and insufficient development, incomplete revision, and collaborative elements	produces writing with guidance and support that includes incomplete or insufficient development, minimal revision, and collaborative elements.	produces writing with guidance and support that includes and exhibits development, revision, and collaborative elements.	produces writing with guidance and support that includes and exhibits complex development, concise revision, and collaborative elements.
Detailed	3.W.7-8	conducts minimal research and recalls some information from experiences and sources, sorting evidence into provided categories while providing evidence that is not relevant to the categories.	conducts some research and recalls some information from experiences and sources, sorting evidence into provided categories while providing some evidence that may not be sorted into the provided categories.	conducts research and recalls information from experiences and sources, sorting relevant evidence into provided categories.	conducts focused research and recalls applicable information from experiences and sources, sorting relevant evidence into provided categories.

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	3.SL.2	identifies details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	identifies the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	determines the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	accurately summarizes the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
Detailed	3.SL.3	asks and answers simple questions about information from a speaker.	asks and answers explicit questions about information from a speaker.	asks and answers questions about information from a speaker, offering appropriate elaboration and detail.	asks and answers complex questions about information from a speaker, offering relevant and effective elaboration and detail.
<b>Language</b>					
Detailed	3.L.1	demonstrates command of grammar in simple sentences.	demonstrates command of grammar in simple and compound sentences including a limited understanding of the function of common and straightforward nouns, pronouns, adjectives, adverbs, and conjunctions.	demonstrates command of grammar in simple, compound, and complex sentences, including the function of nouns (plural and abstract), pronouns, adjectives (comparative and superlative), adverbs (comparative and superlative), conjunctions (coordinating and subordinating), verbs (regular and irregular) and simple verb tenses, and subject-verb and pronoun-antecedent agreement.	demonstrates strong command of grammar in simple, compound, and complex sentences, including the function of nouns (plural and abstract), pronouns, adjectives (comparative and superlative), adverbs (comparative and superlative), conjunctions (coordinating and subordinating), verbs (regular and irregular) and verb tenses, and subject-verb and pronoun-antecedent agreement.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	3.L.2	demonstrates limited command of capitalization conventions in titles and of commas in addresses; spells high-frequency words correctly.	demonstrates command of capitalization conventions in titles and of commas in addresses; spells high-frequency words correctly and uses spelling patterns and generalizations in writing unknown words.	demonstrates command of capitalization conventions in titles, commas in addresses, commas and quotation marks in dialogue, and how to form and use possessives; spells high-frequency words correctly; uses spelling patterns and generalizations in writing unknown words and for adding suffixes to bases.	demonstrates strong command of capitalization conventions in titles, commas in addresses, commas and quotation marks in dialogue, and how to form and use possessives; spells most words correctly; uses spelling patterns and generalizations in writing unknown words and for adding suffixes to bases, including use of complex patterns and irregularly spelled words.
Detailed	3.L.3	chooses words/phrases without concern for effect.	chooses words/phrases for effect and recognizes the differences between spoken and written English.	chooses words/phrases for effect and recognizes and observes the differences between spoken and written English.	carefully chooses words/phrases for effect and to strengthen the message of the writing; recognizes and observes the differences between spoken and written English.
Detailed	3.L.4	clarifies the meaning of unknown words using immediate, explicit context clues.	clarifies the meaning of multiple-meaning words using sentence-level context clues; clarifies the meaning of unknown words using morphology (grade-level roots and affixes) and/or reference resources.	clarifies the meaning of unknown and multiple-meaning words using sentence-level context clues, morphology (grade-level roots and affixes), and/or reference resources.	clarifies the meaning of unknown and multiple-meaning words using sentence- and paragraph-level context clues, morphology (roots and affixes), and/or reference resources.



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	3.L.5	recognizes simple figurative language, simple word relationships, and nuances in word meanings; identifies explicit real-life connections between words and their use (e.g., describe people who are friendly or helpful).	demonstrates understanding of simple figurative language, simple word relationships, and nuances in word meanings; recognizes the literal and nonliteral use of words and phrases in context (e.g., take steps); identifies real-life connections between words and their use (e.g., describe people who are friendly or helpful).	demonstrates understanding of figurative language, word relationships, and nuances in word meanings; distinguishes the literal and nonliteral meanings of words and phrases in context (e.g., take steps); identifies real-life connections between words and their use (e.g., describe people who are friendly or helpful); distinguishes shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).	demonstrates understanding of complex figurative language, complex word relationships, and subtle nuances in word meanings; distinguishes the literal and nonliteral meanings of words and phrases in context (e.g., take steps); identifies subtle or complex real-life connections between words and their use (e.g., describe people who are friendly or helpful); distinguishes subtle shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	4.RL.1	identifies details and examples from the text and draws simple inferences.	explains what the text says explicitly and draws simple inferences; identifies key details and examples in the text.	refers to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	quotes accurately from a text and refers to key details and examples when explaining what the text says explicitly and when drawing complex inferences from the text.
Detailed	4.RL.2	identifies an explicitly stated theme in a story, drama, or poem; identifies some details from the text.	recognizes a stated theme of a story, drama, or poem; determines the key details in the text.	determines the theme of a story, drama, or poem; summarizes the text.	determines an implicitly stated theme, or multiple themes, of a story, drama, or poem; comprehensively summarizes the text
Detailed	4.RL.3	identifies aspects of a character, setting, or event in a story or drama, drawing on explicitly stated details in the text.	describes a character, setting, or event in a story or drama, using explicit details in the text.	describes in depth a character, setting, or event in a story or drama, drawing on specific details in the text.	describes in depth and analyzes a complex character, setting, or event in a story or drama, drawing on implicit, specific details in the text.
Detailed	4.RL.4	identifies the meaning of familiar words and phrases as they are used in a text.	uses details from the text to understand the general meaning of words and phrases as they are used in a text, recognizing those that allude to significant characters found in mythology.	determines the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology.	analyzes the meaning of unfamiliar words and phrases as they are used in a text, including those that allude to significant characters found in mythology.
Detailed	4.RL.5	identifies basic differences between poems, drama, and prose, and identifies common structural elements.	describes differences between poems, drama, and prose, and recognizes the structural elements.	explains major differences between poems, drama, and prose, and refers to the structural elements.	analyzes major how differences between poems, drama, and prose affect meaning, and refers to complex structural elements.
Detailed	4.RL.6	identifies the narrator's point of view in a story; identifies first- and third-person narrations.	determines the point of view from which different stories are narrated, including distinguishing between first- and third-person narrations.	compares and contrasts the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	compares and contrasts, then analyzes, the point of view from which different stories are narrated, including the difference between first- and third-person narrations.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	4.RL.7	identifies obvious similarities between the text of a story or drama and the visual or oral presentation of the text.	makes simple connections between the text of a story or drama and the visual or oral presentation of the text.	makes connections between the text of a story or drama and the visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.	analyzes complex connections between the text of a story or drama and the visual or oral presentation of the text, determining where each version reflects specific descriptions and directions in the text.
Detailed	4.RL.9	identifies similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.	describes the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.	compares and contrasts the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.	analyzes the different treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Reading Informational Text</b>			
Detailed	4.RI.1	identifies details and examples from the text and draws simple inferences.	identifies key details and examples in the text; explains what the text says explicitly and draws simple inferences.	refers to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	quotes accurately from a text and refers to key details and examples when explaining what the text says explicitly and when drawing complex inferences from the text.
Detailed	4.RI.2	identifies an explicitly stated main idea and key details of a text.	recognizes a stated main idea of a text and determines key details; provides a simple summary of the text.	determines the main idea of a text and explains how it is supported by key details; summarizes the text.	determines an implicitly stated main idea of a text and explains, using textual evidence, how it is supported by key details; comprehensively summarizes the text.
Detailed	4.RI.3	identifies events, procedures, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.	describes events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	explains events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	analyzes events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, using evidence from the text to justify the explanation.
Detailed	4.RI.4	identifies the loose meaning of frequently used academic and domain-specific words and phrases in a text.	determines the approximate meaning of basic academic and domain-specific words or phrases in a text.	determines the meaning of general academic and domain-specific words or phrases in a text.	determines and analyzes the meaning of academic and domain-specific words or phrases in a text.
Detailed	4.RI.5	identifies the structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in part of a text.	determines 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.	describes 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.	analyzes 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, including how it contributes to the meaning of the text.
Detailed	4.RI.6	identifies whether texts written on the same event or topic are a firsthand or secondhand account; determines the focus of the account.	determines the differences between a firsthand and secondhand account of the same event or topic; recognizes the difference in focus and the information provided.	compares and contrasts a firsthand and secondhand account of the same event or topic; describes the difference in focus and the information provided.	compares and contrasts, then analyzes, a firsthand and secondhand account of the same event or topic, including the difference in focus and the information provided.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.RI.7	identifies or describes information presented visually, orally, or quantitatively.	identifies or describes information presented visually, orally, or quantitatively and recognizes how the information contributes to an understanding of the text in which it appears	interprets information presented visually, orally, or quantitatively and explains how the information contributes to an understanding of the text in which it appears.	analyzes information presented visually, orally, or quantitatively and explains how the information contributes to the overall understanding of the text in which it appears
Detailed	4.RI.8	identifies reasons and evidence an author includes in a text.	describes how an author uses reasons and evidence to support the overall point in a text.	explains how an author uses reasons and evidence to support particular points in a text.	analyzes how an author uses reasons and evidence to support particular points in a text.
Detailed	4.RI.9	identifies information from two texts on the same topic in order to answer questions, orally or in writing, about the subject.	utilizes information from two texts on the same topic to write or speak about the subject knowledgeably.	integrates information from two texts on the same topic in order to write or speak about the subject knowledgeably.	synthesizes complex information and textual evidence from two texts on the same topic in order to write or speak about the subject knowledgeably

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	4.W.1	<p>writes opinion pieces that lack organization and a clear point of view.</p> <p>a. states an opinion but uses an ineffective or inappropriate organizational structure to present ideas.</p> <p>b. provides facts and details that are not relevant to the topic.</p> <p>c. opinion and reasons are not linked with transitions.</p> <p>d. includes an ineffective concluding statement.</p>	<p>writes moderately organized opinion pieces on topics or texts.</p> <p>a. introduces a topic or text by stating an opinion, and generally groups ideas together in a way that supports the writer's purpose.</p> <p>b. provides both relevant and irrelevant facts and details.</p> <p>c. links opinion and reasons using basic transitional words.</p> <p>d. provides a concluding statement.</p>	<p>writes opinion pieces on topics or texts, supporting a point of view with reasons and information.</p> <p>a. introduces a topic or text clearly, states an opinion, and creates an organizational structure in which related ideas are grouped to support the writer's purpose.</p> <p>b. provides reasons that are supported by facts and details.</p> <p>c. links opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).</p> <p>d. provides a concluding statement or section related to the opinion presented.</p>	<p>writes well-organized opinion pieces on topics or texts, fully supporting a point of view with reasons and information.</p> <p>a. effectively introduces a topic or text clearly, states an opinion, and creates an organizational structure in which related ideas are logically grouped to support the writer's purpose.</p> <p>b. provides logically ordered reasons that are supported by facts and details.</p> <p>c. smoothly links opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).</p> <p>d. provides a relevant and effective concluding statement or section related to the opinion presented.</p>

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.W.2	<p>writes informative/explanatory texts to discuss a topic.</p> <p>a. states the topic and groups information in an illogical or unrelated manner; includes irrelevant or distracting formatting, illustrations, and multimedia.</p> <p>b. provides irrelevant or unreliable facts, definitions, details, quotations, or other information and examples.</p> <p>c. ideas are not clearly or effectively linked.</p> <p>d. uses simple vocabulary when explaining the topic.</p> <p>e. provides an incomplete concluding statement.</p>	<p>writes moderately organized informative/explanatory texts to discuss a topic and convey ideas and information.</p> <p>a. introduces the topic and groups related information logically; includes formatting (e.g., headings), illustrations, and multimedia.</p> <p>b. supports the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. links ideas within categories of information using simple transitional words or phrases.</p> <p>d. uses domain-specific vocabulary in an attempt to explain the topic.</p> <p>e. provides a concluding statement.</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. introduces a topic clearly and group related information in paragraphs and sections; includes formatting (e.g., headings), illustrations, and multimedia when useful to aid comprehension.</p> <p>b. develops the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. links ideas within categories of information using words and phrases (e.g., another, for example, also, because).</p> <p>d. uses precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. provides a concluding statement or section related to the information or explanation presented.</p>	<p>writes informative/explanatory texts to thoroughly examine a topic and convey ideas and information clearly and completely.</p> <p>a. clearly and effectively introduces the topic and groups related information logically in paragraphs and sections; includes effective formatting (e.g., headings), illustrations, and multimedia that enhance comprehension.</p> <p>b. fully develops the topic with relevant facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. smoothly links ideas within categories of information using purposeful transitional words and phrases.</p> <p>d. uses precise language and domain-specific vocabulary efficiently and effectively to inform or explain about the topic.</p> <p>e. provides a relevant and effective</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.W.4-6	produces writing with guidance and support in which the development, organization, and style are evident; develops writing with some planning, revising, and editing, including editing for conventions; demonstrates basic command of keyboarding skills.	produces clear writing in which the development, organization, and style are largely appropriate to task, purpose, and audience; with guidance and support, develops writing by planning, revising, and editing, including editing for conventions; demonstrates sufficient command of keyboarding skills to type up to one page in a single sitting.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; with guidance and support, develops and strengthens writing by planning, revising, and editing, including editing for conventions; demonstrates sufficient command of keyboarding skills to type a minimum of one page in a single sitting.	produces clear and well-developed writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing on an ongoing basis by planning, revising, and editing, including editing for conventions; demonstrates sufficient command of keyboarding skills to type one or more pages in a single sitting.
Detailed	4.W.7-8	conducts short research projects about a topic; recalls some information from experiences and sources; provides notes regarding information.	conducts short research projects that use several sources to discuss a topic; recalls some information from experiences and gathers information from sources; provides brief notes about information.	conducts short research projects that build knowledge through investigation of different aspects of a topic; recalls relevant information from experiences or gathers relevant information from print and digital sources; takes notes and categorizes information.	conducts research projects that use several high-quality sources to build knowledge by fully investigating a topic; uses relevant information from experiences and gathered from print and digital sources; fully summarizes or paraphrases information in notes and efficiently categorizes information.



**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	4.SL.2	identifies key details from a text read aloud or information presented in a single media format, including visually, quantitatively, and orally.	describes key details from a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	paraphrases portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	clearly, coherently, and efficiently paraphrases portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
Detailed	4.SL.3	identifies the points a speaker makes.	identifies the points a speaker makes and key details about the topic.	identifies the reasons and evidence a speaker provides to support particular points.	evaluates the reasons and evidence a speaker provides to support particular points.
<b>Language</b>					
Detailed	4.L.1	demonstrates a basic understanding of the conventions of standard English grammar and usage when writing; forms and uses simple prepositional phrases.	demonstrates an understanding of the conventions of standard English grammar and usage when writing, including using relative pronouns and relative adverbs and forming and using the progressive verb tense; orders adjectives within sentences according to conventional patterns; forms and uses simple prepositional phrases; produces complete sentences, recognizing and correcting inappropriate fragments and run-ons.	demonstrates command of the conventions of standard English grammar and usage when writing, including using relative pronouns and relative adverbs, forming and using the progressive verb tenses, and using modal auxiliaries (e.g., can, may, must) to convey various conditions; orders adjectives within sentences according to conventional patterns; forms and uses prepositional phrases; produces complete sentences, recognizing and correcting inappropriate fragments and run-ons; correctly uses frequently confused words (e.g., to, too, two; there, their).	demonstrates strong command of the conventions of standard English grammar and usage when writing, including using relative pronouns and relative adverbs, forming and using the progressive verb tenses, and using modal auxiliaries (e.g., can, may, must) to convey various conditions; orders adjectives within sentences according to conventional patterns; forms and uses complex prepositional phrases; produces complete sentences with varying complexity, recognizing and correcting inappropriate fragments and run-ons; correctly uses frequently confused words (e.g., to, too, two; there, their).

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.L.2	demonstrates a basic understanding of the conventions of standard English capitalization, punctuation, and spelling when writing; uses commas and/or quotation marks to mark direct speech and quotations from a text; spells most words correctly, consulting references as needed.	demonstrates understanding of the conventions of standard English capitalization, punctuation, and spelling when writing; uses commas and/or quotation marks to mark direct speech and quotations from a text; spells most words correctly, consulting references as needed.	demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing; uses commas and quotation marks to mark direct speech and quotations from a text; uses a comma before a coordinating conjunction in a compound sentence; spells words correctly, consulting references as needed.	demonstrates strong command of the conventions of standard English capitalization, punctuation, and spelling when writing; uses commas and quotation marks to mark direct speech and quotations from a text; uses a comma before a coordinating conjunction in a compound sentence; spells low-frequency and above-grade-level words correctly, consulting references as needed.
Detailed	4.L.3	uses a basic knowledge of language and its conventions when writing, speaking, reading, or listening; chooses words and phrases to form sentences; uses some punctuation.	uses a basic knowledge of language and its conventions when writing, speaking, reading, or listening; chooses words and phrases to convey ideas; uses appropriate punctuation; uses a consistently formal or informal tone.	uses knowledge of language and its conventions when writing, speaking, reading, or listening; chooses words and phrases to convey ideas precisely; chooses punctuation for effect; differentiates between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).	uses deep knowledge of language and its conventions when writing, speaking, reading, or listening; chooses words and phrases to convey ideas precisely; chooses punctuation for effect; differentiates between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	L.4.4	clarifies the meaning of unknown words and phrases, choosing from a limited range of strategies; uses immediate and explicit context as a clue to the meaning of a word or phrase; consults reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to determine the meaning of words and phrases.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing from a range of strategies; uses immediate context as a clue to the meaning of a word or phrase; recognizes Greek and Latin affixes and roots; consults reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the meaning of key words and phrases.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies; uses context as a clue to the meaning of a word or phrase; uses common grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word; consults 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.	determines or clarifies and applies the meaning of unknown and multiple-meaning words and phrases, choosing strategically from a range of strategies; uses sentence- and paragraph-level context as a clue to the meaning of a word or phrase; uses Greek and Latin affixes and roots as clues to the meaning of a word; consults 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.
Detailed	4.L.5	recognizes simple figurative language, simple word relationships, and nuances in word meanings; recognizes simple similes and metaphors; recognizes common idioms, adages, and proverbs; understands that words have direct opposites (antonyms) and some words have similar but not identical meanings (synonyms).	demonstrates understanding of simple figurative language, simple word relationships, and nuances in word meanings; identifies the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context; recognizes and identifies the meaning of common, simple idioms, adages, and proverbs; demonstrates a limited understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).	demonstrates understanding of figurative language, word relationships, and nuances in word meanings; explains the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context; recognizes and explains the meaning of common idioms, adages, and proverbs; demonstrates understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).	demonstrates understanding of complex figurative language, complex word relationships, and subtle nuances in word meanings; explains the meaning of complex and implicit similes and metaphors in context; recognizes and explains the meaning of idioms, adages, and proverbs; demonstrates deep understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	5.RL.1	explains what the text says explicitly and draws simple inferences.	paraphrases parts of the text to explain what the text says explicitly and when drawing inferences from the text.	quotes accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	accurately quotes strong textual evidence when explaining what the text says explicitly and when drawing complex inferences from the text.
Detailed	5.RL.2	identifies an explicitly stated theme of a story, drama, or poem; provides a basic list of events in a text.	identifies a theme of a story, drama, or poem; identifies the key events or details in a text.	determines 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; summarizes the text.	determines implicitly stated themes of a story, drama, or poem, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; comprehensively summarizes the text.
Detailed	5.RL.3	identifies differences or similarities between two characters, settings, or events in a story or drama, drawing on simple, explicit details in the text.	determines differences or similarities between two or more characters, settings, or events in a story or drama, using explicit details in the text.	compares and contrasts two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).	analyzes the similarities and differences between two or more characters, settings, or events in a story or drama, drawing on implicitly stated details in the text (e.g., how characters interact).
Detailed	5.RL.4	identifies the literal meaning of familiar words and phrases as they are used in a text.	distinguishes between literal and figurative meanings of words and phrases as they are used in a text, including recognizing figurative language such as metaphors and similes.	determines the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.	analyzes the meaning of unfamiliar words and phrases as they are used in a text, including figurative language such as metaphors and similes.
Detailed	5.RL.5	identifies a particular chapter, scene, or stanza that provides structure to a particular story, drama, or poem.	explains how a series of chapters, scenes, or stanzas affects the basic structure of a particular story, drama, or poem.	explains how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.	analyzes how a series of chapters, scenes, or stanzas fits together and interacts to provide the overall structure of a particular story, drama, or poem.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	RL.5.6	identifies a narrator's or speaker's point of view.	describes how a narrator or speaker describes events in a text.	describes how a narrator's or speaker's point of view influences how events are described.	analyzes how a narrator's or speaker's point of view influences how complex events are developed.
Detailed	5.RL.7	identifies how visual and multimedia elements support the meaning of a portion of the text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem)	describes how visual and multimedia elements contribute to the meaning of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).	analyzes 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)	analyzes, then evaluates, 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)
Detailed	RL.5.8	N/A	N/A	N/A	N/A
Detailed	5.RL.9	identifies various genre-specific characteristics of stories in the same genre (e.g., mysteries and adventure stories), but with little or no connection to the themes and topics.	determines various genre-specific characteristics of stories in the same genre (e.g., mysteries and adventure stories) with similar themes and topics.	compares and contrasts stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.	compares, contrasts, and analyzes/evaluates stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Reading: Informational Text</b>					
Detailed	5.RI.1	explains what the text says explicitly and draws simple inferences.	paraphrases parts of the text to explain what the text says explicitly and when drawing inferences from the text.	quotes accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	accurately quotes strong textual evidence when explaining what the text says explicitly and when drawing complex inferences from the text.
Detailed	5.RI.2	identifies two or more explicitly stated main ideas of a text; identifies relevant details from the text; provides a basic list of events or facts from the text.	determines two or more explicitly stated main ideas of a text and explains how they are related to relevant details; provides a simple summary of the text.	determines two or more main ideas of a text and explains how they are supported by key details; summarizes the text.	analyzes the relationship between two or more main ideas of a text and explains how they are supported by key details; provides a comprehensive summary of the text.
Detailed	5.RI.3	identifies straightforward relationships or interactions between two individuals, events, ideas, or concepts in a historical, scientific, or technical text.	describes the relationships or interactions between two individuals, events, ideas, or concepts in a historical, scientific, or technical text, relying on a general understanding of the text.	explains 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.	analyzes complex relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text, providing evidence based on specific information in the text.
Detailed	5.RI.4	identifies the loose meaning of frequently used academic and domain-specific words and phrases in a text.	determines the approximate meaning of basic academic and domain-specific words and phrases in a text.	determines the meaning of general academic and domain-specific words and phrases in a text.	determines and analyzes the meaning and effect of advanced academic and domain-specific words and phrases in a text.
Detailed	5.RI.5	identifies the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.	explains the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.	compares and contrasts the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.	compares and contrasts, then analyzes, the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts, including how that structure contributes to the overall meaning.
Detailed	5.RI.6	identifies the point of view in multiple accounts of the same event or topic.	determines similarities and differences in the points of view in multiple accounts of the same event or topic.	analyzes multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.	analyzes multiple accounts of the same event or topic, explains important similarities and differences in the point of view they represent, and evaluates the effectiveness of the accounts.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	5.RI.7	identifies explicit information within print or digital sources in order to locate an answer to a basic question or solve a basic problem.	draws on information from multiple print or digital sources, demonstrating the ability to locate a simple answer to an explicit question or to solve an explicit problem.	draws 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.	draws on relevant information from reliable multiple print or digital sources, demonstrating the ability to fully answer complex questions or to solve a complex problem efficiently.
Detailed	5.RI.8	identifies which reasons or evidence support a particular point in a text.	describes how an author uses reasons and evidence to support particular points in a text, identifying relevant supporting details.	explains how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).	evaluates the strength of the reasons and evidence an author uses to support particular points in a text, explaining how the reasons and evidence support the point(s).
Detailed	5.RI.9	identifies information from one or two texts and provides an incomplete response when writing or speaking about the subject.	finds relevant information from several texts on the same topic in order to write or speak about the subject.	integrates information from several texts on the same topic in order to write or speak about the subject knowledgeably.	integrates complex or inferred information from several texts on the same topic in order to write or speak about the subject knowledgeably, using textual evidence as support.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	5.W.1	<p>writes opinion pieces that lack organization and a clear point of view.</p> <p>a. states an opinion but uses an ineffective or inappropriate organizational structure to present ideas.</p> <p>b. provides facts and details that are not relevant to the topic.</p> <p>c. opinions and reasons are not linked with transitions.</p> <p>d. includes an ineffective concluding statement.</p>	<p>writes moderately organized opinion pieces on topics or texts, providing a clear point of view.</p> <p>a. introduces a topic or text by stating an opinion and organizes ideas in a generally effective organizational structure.</p> <p>b. provides both relevant and irrelevant reasons that are logically ordered.</p> <p>c. links opinions and reasons using basic transitional words.</p> <p>d. provides a concluding statement.</p>	<p>writes opinion pieces on topics or texts, supporting a point of view with reasons and information.</p> <p>a. introduces a topic or text clearly, states an opinion, and creates an organizational structure in which ideas are logically grouped to support the writer's purpose.</p> <p>b. provides logically ordered reasons that are supported by facts and details.</p> <p>c. links opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically).</p> <p>d. provides a concluding statement or section related to the opinion presented.</p>	<p>writes well-organized, multi-paragraph opinion pieces, supporting a point of view with effective reasons and relevant information.</p> <p>a. effectively introduces a topic or text clearly, states an opinion, and creates an effective organizational structure in which ideas are logically and effectively grouped, emphasizing the writer's purpose.</p> <p>b. provides effective, relevant reasons that are logically and purposefully ordered and supported by facts and details.</p> <p>c. smoothly links opinions and reasons using words, phrases, and clauses (e.g., consequently, specifically)</p> <p>d. provides a relevant and effective concluding statement or section related to the opinion presented.</p>



**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	5.W.2	<p>writes informative/explanatory texts to discuss a topic.</p> <p>a. states the topic, writes with little focus, and groups information in an illogical or unrelated manner; includes irrelevant or distracting formatting, illustrations, and multimedia.</p> <p>b. provides irrelevant or unreliable facts, definitions, details, quotations, or other information and examples.</p> <p>c. ideas are not clearly or effectively linked.</p> <p>d. uses simple vocabulary when explaining the topic.</p> <p>e. provides an incomplete concluding statement.</p>	<p>writes informative/explanatory texts to discuss a topic and convey ideas and information.</p> <p>a. introduces the topic, provides a general observation with a loose focus, and groups related information logically; includes formatting (e.g., headings), illustrations, and multimedia.</p> <p>b. supports the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. links ideas within categories of information using simple transitional words or phrases.</p> <p>d. uses domain-specific vocabulary in an attempt to explain the topic.</p> <p>e. provides a concluding statement.</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. introduces a topic clearly, provides a general observation and focus, and groups related information logically; includes formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p> <p>b. develops the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. links ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).</p> <p>d. uses precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. provides a concluding statement or section related to the information or explanation presented.</p>	<p>writes informative/explanatory texts to thoroughly examine a topic and convey complex ideas and information clearly.</p> <p>a. clearly and effectively introduces the topic, provides a specific observation and clear focus, and groups related information logically; includes effective and purposeful formatting (e.g., headings), illustrations, and multimedia to enhance comprehension.</p> <p>b. fully develops the topic with relevant facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. smoothly links supported ideas within and across categories of information using purposeful transitional phrases and clauses,</p> <p>d. uses precise language and domain-specific vocabulary efficiently and effectively to inform or explain about the topic.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	5.W.4-6	produces clear writing in which the development, organization, and style are evident; develops writing with some planning, revising, and editing, including editing for conventions; demonstrates basic command of keyboarding skills.	produces clear writing in which the development, organization, and style are largely appropriate to task, purpose, and audience; develops writing by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type up to two pages in a single sitting.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; with guidance and support, develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.	produces clear and well-developed writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing on an ongoing basis by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type two or more pages in a single sitting.
Detailed	5.W.7-8	conducts short research projects about a topic; recalls some information from experiences and sources; provides an incomplete summary or list of information in notes.	conducts short research projects that use several sources to discuss a topic; recalls some information from experiences and gathers information from sources; provides a brief summary of information in notes and finished work.	conducts short research projects that use several sources to investigate a topic; recalls relevant information from experiences and gathers relevant information from sources; summarizes or paraphrases information in notes and finished work.	conducts research projects that use several high-quality sources to fully investigate a topic; uses relevant information from experiences and gathered from sources; fully summarizes or paraphrases information in notes and finished work.

**Appendix D Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	5SL.2	identifies details of a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	determines the key details of a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	clearly and coherently summarizes a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
Detailed	5SL.3	identifies the points a speaker makes.	determines the points a speaker makes and identifies key details that support the points.	summarizes the points a speaker makes and explains how each claim is supported by reasons and evidence.	provides a comprehensive summary of the points a speaker makes and evaluates how each claim is supported by reasons and evidence.
<b>Language</b>					
Detailed	5.L.1	demonstrates a basic understanding of the conventions of standard English grammar and usage when writing or speaking; attempts to form and use the perfect verb tenses; attempts to use correlative conjunctions (e.g., either/or, neither/nor).	demonstrates an understanding of the conventions of standard English grammar and usage when writing or speaking, understanding the function of conjunctions, prepositions, and interjections in general and their function in particular sentences; forms and uses the perfect verb tenses, uses verb tense to convey various times, sequences, states, and conditions, and recognizes inappropriate shifts in verb tense; uses correlative conjunctions (e.g., either/or, neither/nor).	demonstrates command of the conventions of standard English grammar and usage when writing or speaking, explaining the function of conjunctions, prepositions, and interjections in general and their function in particular sentences; forms and uses the perfect verb tenses, uses verb tense to convey various times, sequences, states, and conditions, and recognizes and corrects inappropriate shifts in verb tense; uses correlative conjunctions (e.g., either/or, neither/nor).	demonstrates strong command of the conventions of standard English grammar and usage when writing or speaking, explaining the function of conjunctions, prepositions, and interjections in general and their function in particular sentences; forms and uses the perfect verb tenses, uses verb tense to convey various specific times, sequences, states, and conditions, and recognizes and corrects inappropriate shifts in verb tense; uses correlative conjunctions (e.g., either/or, neither/nor).

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	5.L.2	demonstrates limited understanding of the conventions of standard English capitalization, punctuation, and spelling when writing; uses punctuation to separate items in a series; spells words correctly, consulting references as needed.	demonstrates an understanding of the conventions of standard English capitalization, punctuation, and spelling when writing; uses punctuation to separate items in a series; uses a comma to separate an introductory element from the rest of the sentence; uses a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address; spells words correctly, consulting references as needed.	demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing; uses punctuation to separate items in a series; uses a comma to separate an introductory element from the rest of the sentence; uses a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address; uses underlining, quotation marks, or italics to indicate titles of works; spells words correctly, consulting references as needed.	demonstrates strong command of the conventions of standard English capitalization, punctuation, and spelling when writing; uses punctuation to separate items in a series; uses a comma to separate an introductory element from the rest of the sentence; uses a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address; uses underlining, quotation marks, or italics to indicate titles of works; spells words correctly, consulting references as needed.
Detailed	5.L.3	uses a basic knowledge of language and its conventions when writing, speaking, reading, or listening; expands and reduces sentences for meaning; identifies the type of language used in stories, dramas, or poems.	uses knowledge of language and its conventions when writing, speaking, reading, or listening; expands, combines, and reduces sentences for meaning; recognizes the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.	uses knowledge of language and its conventions when writing, speaking, reading, or listening; expands, combines, and reduces sentences for meaning, reader/listener interest, and style; compares and contrasts the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.	uses deep knowledge of language and its conventions when writing, speaking, reading, or listening; effectively expands, combines, and reduces sentences for meaning, reader/listener interest, and style; compares and contrasts, then analyzes, the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	5.L.4	clarifies the meaning of unknown words and phrases, choosing from a limited range of strategies; uses immediate and explicit context as a clue to the meaning of a word or phrase; consults reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to determine the meaning of key words and phrases.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies; uses immediate context as a clue to the meaning of a word or phrase; recognizes Greek and Latin affixes and roots; consults reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the meaning of key words and phrases.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies; uses context as a clue to the meaning of a word or phrase; uses common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word; consults 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.	determines or clarifies and applies the meaning of unknown and multiple-meaning words and phrases, choosing strategically from a range of strategies; uses sentence and paragraph level context as a clue to the meaning of a word or phrase; uses Greek and Latin affixes and roots as clues to the meaning of a word; consults 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.
Detailed	5.L.5	recognizes figurative language, basic word relationships, and nuances in word meanings; recognizes common idioms, adages, and proverbs; understands the relationship between particular words (e.g., synonyms, antonyms, homographs).	demonstrates understanding of basic figurative language, basic word relationships, and nuances in word meanings; interprets basic figurative language, including similes and metaphors, in context; recognizes common idioms, adages, and proverbs; recognizes that the relationship between particular words (e.g., synonyms, antonyms, homographs) can increase understanding of each of the words.	demonstrates understanding of figurative language, word relationships, and nuances in word meanings; interprets figurative language, including similes and metaphors, in context; recognizes and explains the meaning of common idioms, adages, and proverbs; uses the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.	demonstrates a strong understanding of complex figurative language, complex word relationships, and subtle nuances in word meanings; interprets complex figurative language, including similes and metaphors, in context; recognizes and analyzes the meaning of idioms, adages, and proverbs; uses the relationship between particular words (e.g., synonyms, antonyms, homographs) to fully understand each of the words.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Level 1 student	For grade-appropriate, low- to moderate-complexity texts, the Level 2 student	For grade-appropriate, moderate- to high-complexity texts, the Level 3 student	For grade-appropriate, high-complexity texts, the Level 4 student
<b>Reading: Literature</b>					
Detailed	6.RL.1	loosely refers to the text to support analysis of what the text says explicitly.	identifies textual evidence that supports analysis of what the text says explicitly.	cites textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	applies strong textual evidence in supporting a complex inference or analysis of the text.
Detailed	6.RL.2	identifies a theme or central idea of a text; provides a basic list of events in a text.	identifies a theme or central idea of a text; provides a simple summary of a text distinct from personal opinions or judgments.	determines a theme or central idea of a text and how it is conveyed through particular details; provides a summary of the text distinct from personal opinions or judgments.	evaluates themes or central ideas in regard to major/minor themes and how they are conveyed through particular details; provides a comprehensive summary of a text distinct from personal opinions or judgments.
Detailed	6.RL.3	identifies a basic plot of a particular story or drama and recognizes that the characters change during the story.	describes how the plot of a particular story or drama unfolds and how the characters change overall.	describes how the plot of a particular story or drama unfolds in a series of episodes, as well as how the characters respond or change as the plot moves toward a resolution.	analyzes how the plot of a particular story or drama unfolds in a series of episodes, as well as how the responses and changes of complex characters contribute to the plot as it moves toward a resolution.
Detailed	6.RL.4	identifies the literal meaning of simple words and phrases as they are used in a text.	distinguishes between literal, figurative, and connotative meanings of words and phrases as they are used in a text; identifies the impact of specific word choice on meaning and tone.	determines the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyzes the impact of specific word choice on meaning and tone.	analyzes the meaning of words and phrases as they are used in a text, including figurative and connotative meanings, and assesses their effectiveness; evaluates the impact of specific word choice on meaning and tone.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	6.RL.5	identifies a particular sentence, chapter, scene, or stanza that contributes to the overall structure of a text.	describes how a particular sentence, chapter, scene, or stanza contributes to the overall structure and development of a text.	analyzes 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.	articulates why the author includes a particular sentence, chapter, scene, or stanza, and analyzes how it affects the overall structure of a text and contributes to the development of the theme, setting, or plot throughout the text.
Detailed	6.RL.6	identifies the point of view of the narrator or speaker in a text.	describes the point of view of the narrator or speaker in a text.	explains how an author develops the point of view of the narrator or speaker in a text.	analyzes how an author develops the point of view of the narrator or speaker in a text, citing evidence to support the analysis.
Detailed	6.RL.7	determines the similarities in the experience of reading a story, drama, or poem and listening to or viewing an audio, video, or live version of the text.	compares and contrasts the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text.	compares and contrasts 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 s/he "sees" and "hears" when reading the text to what s/he perceives when listening or watching.	compares and contrasts, then analyzes, the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text. Analyzes what s/he "sees" and "hears" when reading the text compared to what s/he perceives when listening or watching.
Detailed	6.RL.9	identifies various textual elements in different forms or genres with similar themes or topics.	determines differing textual elements in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) with similar themes or topics.	compares and contrasts 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.	compares, contrasts, and analyzes/evaluates 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.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Reading: Informational Text					
Detailed	6.RI.1	loosely refers to the text to support analysis of what the text says explicitly.	identifies textual evidence that supports analysis of what the text says explicitly.	cites textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	applies strong textual evidence in supporting a complex inference or analysis of the text.
Detailed	6.RI.2	identifies a central idea of a text; provides a basic list of events in a text.	identifies a central idea of a text; provides a simple summary of a text distinct from personal opinions or judgments.	determines a central idea of a text and how it is conveyed through particular details; provides a summary of the text distinct from personal opinions or judgments.	evaluates central ideas and how they are conveyed through particular details; provides a comprehensive summary of a text distinct from personal opinions or judgments.
Detailed	6.RI.3	identifies how a key individual, event, or idea is introduced and illustrated in a text.	explains how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).	analyzes in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).	analyzes in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes) and analyzes relationships among key individuals, events, or ideas.
Detailed	6.RI.4	identifies the literal meaning of simple words and phrases as they are used in a text.	distinguishes between some literal, figurative, and connotative meanings of words and phrases as they are used in a text.	determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.	analyzes the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; evaluates the impact of specific word choice.
Detailed	6.RI.5	locates a particular sentence, paragraph, chapter, or section that contributes to the development of the key ideas of a text.	explains how a particular sentence, paragraph, chapter, or section contributes to the overall structure of a text and contributes to the development of the ideas.	analyzes how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.	articulates why the author uses a particular sentence, paragraph, chapter, or section, and analyzes how it affects the overall structure of a text and contributes to the development of the ideas.
Detailed	6.RI.6	identifies an author's explicit point of view or purpose in a text.	identifies an author's point of view or purpose in a text and identifies an example of where it is conveyed in the text.	determines an author's point of view or purpose in a text and explains how it is conveyed in the text.	analyzes an author's point of view <i>and</i> purpose in a text; provides textual evidence to show how the author's point of view and purpose are conveyed in the text.



**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	6.RI.7	identifies key information presented in different media or formats (e.g., visually, quantitatively) as well as in words.	integrates information presented in different media or formats (e.g., visually, quantitatively) as well as in words to show a partially developed understanding of a topic or issue.	integrates 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.	evaluates and synthesizes information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a comprehensive understanding of a topic or issue.
Detailed	6.RI.8	identifies specific claims, reasoning, and evidence in a text.	determines the argument and specific claims, reasoning, and evidence in a text.	traces and evaluates the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.	traces and evaluates the argument and specific claims in a text, analyzing how the reasoning and evidence support or do not support the claim.
Detailed	6.RI.9	identifies explicit similarities or differences between two authors' presentation of events.	compares and contrasts the ways in which two authors present events differently.	compares and contrasts one author's presentation of events with that of another (e.g., a memoir by one person and a biography of that person).	compares and contrasts one author's presentation of events with that of another (e.g., a memoir by one person and a biography of that person); evaluates the effect and impact of the different presentations.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	6.W.1	writes arguments to support claims.  a. introduces claim(s).  b. supports claim(s) with reasons, using sources or non-textual evidence and demonstrating a basic understanding of the topic or text.  c. uses words, phrases, and clauses to state the claim(s) and reasons.  d. uses an informal style.  e. provides a concluding statement or section that illogically follows from the argument presented.	writes arguments to support claims with clear reasons and evidence.  a. introduces claim(s) and organizes the reasons and evidence with purpose.  b. supports claim(s) with reasons and evidence, using appropriate sources and demonstrating a general understanding of the topic or text.  c. uses words, phrases, and clauses to state the relationships among claim(s) and reasons.  d. establishes a formal style but does not consistently maintain it.  e. provides a concluding statement or section that partially follows from the argument presented.	writes arguments to support claims with clear reasons and relevant evidence.  a. introduces claim(s) and organizes the reasons and evidence clearly.  b. supports claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.  c. uses words, phrases, and clauses to clarify the relationships among claim(s) and reasons.  d. establishes and maintains a formal style.  e. provides a concluding statement or section that follows from the argument presented.	writes arguments to support claims with clear reasons and relevant evidence.  a. introduces solid claim(s) and organizes the reasons and evidence clearly and logically.  b. supports claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating a thorough understanding of the topic or text.  c. uses words, phrases, and clauses to clarify and elaborate on the relationships among claim(s) and reasons.  d. establishes and maintains a formal style.  e. provides a well-developed concluding section that clearly and logically follows from the argument presented.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	6.W.2	<p>writes informative/explanatory texts to restate a topic and convey ideas, concepts, and information through the selection, organization of content.</p> <p>a. partially introduces a topic; organizes ideas, concepts, and information, but inconsistently applies strategies such as definition, classification, comparison/contrast, and cause/effect.</p> <p>b. develops the topic with facts.</p> <p>c. uses basic transitions to connect ideas and concepts.</p> <p>d. uses some domain-specific vocabulary to inform about or explain the topic.</p> <p>e. uses an informal style.</p> <p>f. provides a concluding statement or section that illogically follows from the information or explanation</p>	<p>writes informative/explanatory texts to explain a topic and convey ideas, concepts, and information through the selection and organization of relevant content.</p> <p>a. introduces a topic; organizes ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; includes formatting (e.g., headings), graphics (e.g., charts, tables) when useful to aiding comprehension.</p> <p>b. develops the topic with facts, definitions, details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to connect ideas and concepts.</p> <p>d. uses some precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. establishes a formal style but does not consistently maintain it.</p> <p>f. provides a basic concluding</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. introduces a topic; organizes ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; includes formatting (e.g., headings) and graphics (e.g., charts, tables) and multimedia when useful to aiding comprehension.</p> <p>b. develops the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to clarify the relationships among ideas and concepts.</p> <p>d. uses precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. establishes and maintains a formal style.</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. clearly introduces a topic; logically organizes ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; includes formatting (e.g., headings) and graphics (e.g., charts, tables) in a way that enhances the explanation.</p> <p>b. develops the topic with significant facts, definitions, concrete details, insightful quotations, or other information and examples.</p> <p>c. uses appropriate transitions to clarify and elaborate on the relationships among ideas and concepts.</p> <p>d. uses precise language and domain-specific vocabulary to enhance the explanation of the topic.</p>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		presented.	statement or section that partially follows from the information or explanation presented.	f. provides a concluding statement or section that follows from the information or explanation presented.	e. establishes and maintains a formal style.  f. provides a well-developed concluding statement or section that clearly and logically follows from the information or explanation presented.
Detailed	6.W.4-6	produces clear writing in which the development, organization, and style are evident; develops writing with some planning, revising, and editing, including editing for conventions; demonstrates basic command of keyboarding skills.	produces clear writing in which the development, organization, and style are largely appropriate to task, purpose, and audience; develops writing by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type up to three pages in a single sitting.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.	produces clear and well-developed writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing on an ongoing basis by planning, revising, editing, rewriting, or trying a new approach, including editing for conventions; demonstrates sufficient command of keyboarding skills to type three or more pages in a single sitting.
Detailed	6.W.7-8	conducts short research projects to answer a question, drawing on one or two sources; uses information from one or two sources; paraphrases the conclusions of others while avoiding plagiarism.	conducts short research projects to answer a question, drawing on several sources; uses information from multiple sources; assesses the credibility of some sources; paraphrases the data and conclusions of others while avoiding plagiarism.	conducts short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate; gathers relevant information from multiple sources; assesses the credibility of sources as appropriate; quotes or paraphrases the data and conclusions of others while avoiding plagiarism.	conducts research projects to answer an important question, drawing on several sources and refocusing the inquiry when appropriate; gathers relevant, high-quality information from multiple sources; assesses the credibility of sources as appropriate; cites the data and conclusions of others while avoiding plagiarism and using standard format for citation.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	6.SL.2	recalls information presented in diverse media and formats and identifies a topic, text, or issue under study.	recalls information presented in diverse media and formats and describes details related to a topic, text, or issue under study.	interprets information presented in diverse media and formats and explains how it contributes to a topic, text, or issue under study.	interprets and evaluates information presented in diverse media and formats and explains how it contributes to a topic, text, or issue under study.
Detailed	6.SL.3	identifies a speaker's argument and specific claims.	identifies a speaker's argument and specific claims and recognizes that some claims are not supported by reasons and evidence.	delineates a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.	delineates a speaker's argument and specific claims, critiquing claims and evaluating whether or not they are supported by reasons and evidence.
<b>Language</b>					
Detailed	6.L.1	demonstrates basic understanding of the conventions of standard English grammar and usage when writing or speaking: inconsistently uses pronouns in the correct case; inconsistently recognizes inappropriate shifts in pronoun number and person; and identifies some variations from standard English, using basic strategies to improve expression in conventional language.	demonstrates understanding of the conventions of standard English grammar and usage when writing or speaking: ensures that pronouns are in the proper case; uses intensive pronouns; recognizes inappropriate shifts in pronoun number and person; recognizes vague pronouns; and identifies variations from standard English and uses strategies to improve expression in conventional language.	demonstrates command of the conventions of standard English grammar and usage when writing or speaking: ensures that pronouns are in the proper case; uses intensive pronouns; recognizes and corrects inappropriate shifts in pronoun number and person; recognizes and corrects vague pronouns; and recognizes variations from standard English and uses strategies to improve expression in conventional language.	demonstrates strong command of the conventions of standard English grammar and usage when writing or speaking: ensures that pronouns are in the proper case; uses intensive pronouns; recognizes and corrects inappropriate shifts in pronoun number and person; and recognizes and corrects vague pronouns; and identifies variations from standard English and uses specific strategies to significantly improve expression in conventional language.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	6.L.2	demonstrates a limited understanding of the conventions of standard English capitalization, punctuation, and spelling when writing: inconsistently uses punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements; spells correctly.	demonstrates an understanding of the conventions of standard English capitalization, punctuation, and spelling when writing: generally uses punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements; spells correctly.	demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing: uses punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements; spells correctly.	demonstrates strong and strategic command of the conventions of standard English capitalization, punctuation, and spelling when writing: uses punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements; spells correctly.
Detailed	6.L.3	uses basic knowledge of language and its conventions when writing, speaking, reading, or listening, applying basic variations in sentence patterns for meaning, interest, reader/listener interest, and style while attempting some consistency in style and tone.	uses knowledge of language and its conventions when writing, speaking, reading, or listening, generally varying sentence patterns for meaning, interest, reader/listener interest, and style while demonstrating some consistency in style and tone.	uses knowledge of language and its conventions when writing, speaking, reading, or listening, varying sentence patterns for meaning, interest, reader/listener interest, and style while maintaining consistency in style and tone.	strategically uses knowledge of language and its conventions when writing, speaking, reading, or listening, varying sentence patterns for meaning, interest, reader/listener interest, and style while maintaining strong consistency in style and tone.
Detailed	6.L.4	with strong support, determines or clarifies the explicit meaning of basic words and phrases, using context and Greek and Latin affixes and roots as clues to the meaning, consulting reference materials as needed.	generally determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing from a range of strategies; uses immediate context as a clue to the meaning of a word or phrase; uses common, simple Greek and Latin affixes and roots as clues to the meaning of the word; consults reference materials as needed.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing from a range of strategies; uses context as a clue to the meaning of a word or phrase; uses common Greek and Latin affixes and roots as clues to the meaning of the word; consults reference materials as needed; and verifies the preliminary determination of the meaning of a word or phrase.	definitively determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing from a range of strategies; uses sentence- and passage-level context as a clue to the meaning of a word or phrase; uses common Greek and Latin affixes and roots as clues to the meaning of the word; consults specific and appropriate reference materials as needed; and verifies the preliminary determination of the meaning of a word or phrase.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	6.L.5	demonstrates a limited understanding of figurative language and word relationships in word meanings, including in identifying figures of speech and using the relationship between particular words to better understand each of the words, and in inconsistently distinguishing among the connotations of words with similar denotations.	demonstrates a basic understanding of figurative language, word relationships, and nuances in word meanings, including identifying figures of speech in context, using the relationship between particular words to better understand each of the words, and distinguishing among the connotations of words with similar denotations.	demonstrates understanding of figurative language, word relationships, and nuances in word meanings, including interpreting figures of speech in context, using the relationship between particular words to better understand each of the words, and distinguishing among the connotations of words with similar denotations.	demonstrates command of figurative language, word relationships, and nuances in word meanings, including interpreting complex figures of speech in context, evaluating the relationship between particular words to better understand each of the words, and distinguishing among the connotations of words with similar denotations and applying them in speaking and writing.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	7.RL.1	loosely refers to the text to support analysis of what the text says explicitly.	identifies some textual evidence that supports analysis of what the text says explicitly.	cites several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	applies numerous, strong pieces of textual evidence in supporting a complex inference or analysis of the text.
Detailed	7.RL.2	identifies a theme or central idea of a text; provides a sequence of events in a text.	identifies a theme or central idea of a text; provides a simple objective summary of a text.	determines a theme or central idea of a text and analyzes its development over the course of a text; provides an objective summary of a text.	evaluates themes or central ideas of a text and analyzes their development over the course of a text; provides a comprehensive, objective summary of a text.
Detailed	7.RL.3	identifies particular elements of a story or drama (e.g., setting or characters).	explains how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	analyzes how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	evaluates the relationships between particular elements of a story or drama (e.g., how setting shapes the characters or plot) and analyzes the impact.
Detailed	7.RL.4	identifies the literal or figurative meaning of words and phrases as they are used in a text; identifies rhymes and other repetitions of sounds in a specific verse or stanza of a poem or section of a story or drama.	distinguishes between literal, figurative, and connotative meanings of words and phrases as they are used in a text; describes 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.	determines the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyzes 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.	determines the meaning and analyzes the impact of words and phrases as they are used in a text, including figurative and connotative meanings, and assesses their effectiveness; analyzes and evaluates 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.
Detailed	7.RL.5	identifies a drama's or poem's form or structure (e.g., soliloquy, sonnet).	describes a drama's or poem's form or structure (e.g., soliloquy, sonnet) and how it contributes to the meaning of the text.	analyzes how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning.	analyzes and evaluates how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning and impact.



**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	7.RL.6	identifies the points of view of different characters or narrators in a text.	explains the differences in points of view of different characters or narrators in a text.	analyzes how an author develops and contrasts the points of view of different characters or narrators in a text.	analyzes and evaluates the effectiveness of how an author develops and contrasts the points of view of different complex characters or narrators in a text.
Detailed	7.RL.7	identifies similarities or differences between a written story, drama, or poem to its audio, filmed, staged, or multimedia version.	compares and contrasts a written story, drama, or poem to its audio, filmed, staged, or multimedia version, and identifies the techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).	compares and contrasts 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).	analyzes and critiques an audio, filmed, staged, or multimedia version of a written story, drama or poem as compared to its written version; evaluates the impact and effectiveness of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film)
Detailed	7.RL.9	identifies similarities or differences between a fictional portrayal of a time, place, or character and a historical account of the same period.	compares and contrasts a fictional portrayal of a time, place, or character and a historical account of the same period; identifies how an author of fiction alters history.	compares and contrasts 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.	compares and contrasts, then analyzes, a fictional portrayal of a time, place, or character and a historical account of the same period to understand and evaluate how authors of fiction use or alter history.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Reading: Informational Text					
Detailed	7.RI.1	loosely refers to the text to support analysis of what the text says explicitly.	identifies some textual evidence that supports analysis of what the text says explicitly.	cites several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	applies numerous, strong pieces of textual evidence in supporting a complex inference or analysis of the text.
Detailed	7.RI.2	identifies a central idea of the text; provides a basic sequence of events or ideas in a text.	identifies two or more central ideas of a text; provides a summary of a text.	determines two or more central ideas in a text and analyzes their development over the course of the text; provides an objective summary of a text.	evaluates two or more central ideas and analyzes their development over the course of the text; provides a comprehensive, objective summary of a text.
Detailed	7.RI.3	identifies some of the relationships between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).	determines the relationships between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).	analyzes 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).	analyzes and evaluates complex relationships between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).
Detailed	7.RI.4	identifies the literal or figurative meaning of words and phrases as they are used in a text; recognizes that a specific word choice has an impact on meaning and tone.	distinguishes between literal, figurative, connotative, and technical meanings of words and phrases as they are used in a text; describes the impact of a specific word choice on meaning and tone.	determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyzes the impact of a specific word choice on meaning and tone.	analyzes the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; evaluates the effect of a specific word choice on meaning and tone.
Detailed	7.RI.5	describes the structure an author uses to organize a text; identifies the major sections of the text.	determines the structure an author uses to organize a text; describes how the major sections contribute to the structure of the whole text or to the development of the ideas.	analyzes 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.	evaluates the effectiveness of the structure an author uses to organize a text and analyzes how the major sections contribute to the whole and to the development of the ideas; can articulate how a different text structure might impact the meaning of the text.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.RI.6	identifies an author's purpose in a text and what distinguishes his or her position from that of others.	identifies an author's point of view or purpose in a text and describes how the author distinguishes his or her position from that of others.	determines an author's point of view or purpose in a text and analyzes how the author distinguishes his or her position from that of others.	analyzes an author's point of view and purpose in a text; evaluates how effectively the author distinguishes his or her position from that of others to accomplish his or her purpose.
Detailed	7.RI.7	identifies similarities or differences between a text and an audio, video, or multimedia version of the text.	compares and contrasts a text to an audio, video, or multimedia version of the text, identifying how each medium portrays the subject (e.g., how the delivery of a speech affects the impact of the words).	compares and contrasts 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).	evaluates the effectiveness and impact of a text as compared to an audio, filmed, staged, or multimedia version, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).
Detailed	7.RI.8	traces the argument and a claim in a text, identifying the reasoning and evidence used to support the claim.	traces and evaluates the argument and claims in a text, describing the reasoning and evidence used to support the claims.	traces and evaluates 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.	explicates and evaluates the argument and specific claims in a complex text; cites specific language or examples in the text in an assessment of whether or not the reasoning is sound and the evidence is relevant and sufficient to support the claims.
Detailed	7.RI.9	describes how two or more authors writing about the same topic shape their presentations of key information.	describes how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence.	analyzes 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.	cites textual evidence in an evaluation of the different rhetorical effects used by 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.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	7.W.1	<p>writes arguments that include a claim supported by extratextual evidence.</p> <p>a. introduces claim(s) and organizes the reasons and evidence.</p> <p>b. supports claim(s), demonstrating a basic understanding of the topic or text.</p> <p>c. uses transitional words to link claim(s), reasons, and evidence.</p> <p>d. writes in an informal style.</p> <p>e. provides a concluding statement or section.</p>	<p>writes arguments to support claims with reasons and evidence to support a claim.</p> <p>a. introduces claim(s) and organizes the reasons and evidence logically.</p> <p>b. supports claim(s) with reasoning and evidence from the text (extratextual evidence may occasionally be present) that demonstrates an understanding of the topic or text.</p> <p>c. uses words, phrases, and clauses to link claim(s), reasons, and evidence.</p> <p>d. establishes formal style, but does not consistently maintain it.</p> <p>e. provides a concluding statement or section that follows from the argument presented.</p>	<p>writes arguments to support claims with clear reasons and relevant evidence.</p> <p>a. introduces claim(s), acknowledges alternate or opposing claims, and organizes the reasons and evidence logically.</p> <p>b. supports claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p> <p>c. uses words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.</p> <p>d. establishes and maintains a formal style.</p> <p>e. provides a concluding statement or section that follows from and supports the argument presented.</p>	<p>writes clear arguments to support claims with logical reasoning and relevant evidence.</p> <p>a. introduces supportable claim(s), acknowledges and evaluates alternate or opposing claim(s), and organizes the reasons and evidence logically.</p> <p>b. supports claim(s) with logical reasoning and specific evidence, using accurate, credible sources and demonstrating an acute understanding of the topic or text.</p> <p>c. uses precise words, phrases, and clauses to create cohesive links among major sections of the essay and clarify the relationships among claim(s), reasons, and evidence.</p> <p>d. establishes and maintains a formal style and objective tone.</p> <p>e. provides a compelling concluding statement or section that includes analysis of the evidence and follows and supports the argument presented.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.W.2	<p>writes informative/explanatory text to describe a topic through the selection and organization of content.</p> <p>a. introduces a topic; attempts an organization of ideas, concepts, and information using strategies such as definition, classification, comparison/contrast, and cause/effect.</p> <p>b. describes the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses basic transitions to link ideas and concepts.</p> <p>d. uses topic-appropriate language and vocabulary to inform about or describe the topic.</p> <p>e. uses an informal style.</p> <p>f. provides a concluding statement or section.</p>	<p>writes informative/explanatory text to explain a topic through the selection and organization of relevant content.</p> <p>a. introduces a topic clearly; organizes ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; includes formatting (e.g., headings) and graphics (e.g., charts, tables) when useful to aid comprehension.</p> <p>b. develops the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to create cohesion.</p> <p>d. uses topic-appropriate language and vocabulary to inform about or explain the topic.</p> <p>e. establishes formal style, but does not consistently maintain it.</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. introduces a topic clearly, previewing what is to follow; organizes ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; includes formatting (e.g., headings) and graphics (e.g., charts, tables) when useful to aiding comprehension.</p> <p>b. develops the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. uses precise language and domain-specific vocabulary to inform about or explain the topic.</p>	<p>writes informative/explanatory texts to examine a topic and convey complex ideas, concepts, and information with a strongly developed focus through the selection, organization, and analysis of relevant content.</p> <p>a. introduces a topic with a strongly developed focus using appropriate strategies such as definition, classification, comparison/contrast, and cause and effect; includes formal formatting (e.g., headings) and graphics (e.g., charts, tables) to enhance comprehension.</p> <p>b. develops the topic with analysis of relevant facts, complex ideas, definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. uses appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. uses precise language and domain-</p>

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	7.W.4-6	produces writing in which the development, organization, and style are appropriate to the task; develops writing by applying planning, revising, editing, or rewriting; editing should demonstrate basic command of Language standards 1–3 up to and including grade 7; uses technology to produce writing.	produces clear writing in which the development, organization, and style are appropriate to task and purpose; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose has been addressed; editing should demonstrate basic command of Language standards 1–3 up to and including grade 7; uses technology to produce writing and refer to sources.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed; editing should demonstrate command of Language standards 1–3 up to and including grade 7; uses technology to produce writing and cite sources.	produces well-developed and cohesive writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, successfully addressing the intended purpose and audience; editing should demonstrate skillful command of Language standards 1–3 up to and including grade 7; uses technology to produce writing and cite sources as well as connect ideas efficiently.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.W.7-8	conducts short research projects to answer a question, drawing on minimal sources; gathers information from a few sources; assesses the credibility of sources; paraphrases the data and conclusions of others while avoiding plagiarism.	conducts short research projects to answer a question, drawing on several sources; gathers relevant information from multiple sources and redirects inquiry as appropriate; assesses the credibility and accuracy of each source; and quotes or paraphrases the data and conclusions of others while avoiding plagiarism.	conducts short research projects to answer a question, drawing on several sources and generating additional related, focused ideas; gathers relevant information from multiple sources; assesses the credibility and accuracy of each source; and quotes or paraphrases the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	conducts short research projects to answer an important question, drawing on several sources and generating additional related, focused, and evaluative ideas; gathers relevant information from multiple sources; evaluates the credibility and accuracy of each source; and judiciously quotes or paraphrases the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
<b>Listening</b>					
Detailed	7.SL.2	identifies the main ideas and supporting details presented in diverse media and formats.	explains the main ideas and supporting details presented in diverse media and formats and how they relate to the topic.	analyzes the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explains how the ideas clarify a topic, text, or issue under study.	analyzes the main ideas and supporting details presented in diverse media and formats and evaluates how well the ideas clarify a topic, text, or issue under study.
Detailed	7.SL.3	identifies a speaker's argument and specific claims.	explains a speaker's argument and specific claims, identifying the relevance of the evidence introduced.	delineates a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.	delineates a speaker's argument and specific claims, evaluating the soundness of reasoning and the relevance and sufficiency of the evidence using real world application, rhetorical analysis, or examination of discourse style.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Language</b>			
Detailed	7.L.1	<p>demonstrates basic understanding of the conventions of standard English grammar and usage when writing or speaking in the following areas:</p> <p>a. recognizes the function of phrases and clauses in general and their function in specific sentences.</p> <p>b. relies on simple, compound, and complex sentences to signal differing relationships among ideas.</p> <p>c. places phrases and clauses within a sentences.</p>	<p>demonstrates understanding of the conventions of standard English grammar and usage when writing or speaking in the following areas:</p> <p>a. identifies the function of phrases and clauses in general and their function in specific sentences.</p> <p>b. chooses among simple, compound, complex, and compound-complex sentences to signal relationships among ideas.</p> <p>c. places phrases and clauses within a sentence, avoiding misplaced and dangling modifiers.</p>	<p>demonstrates command of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. explains the function of phrases and clauses in general and their function in specific sentences.</p> <p>b. chooses among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</p> <p>c. places phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.</p>	<p>demonstrates correct application and command of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. analyzes the function of phrases and clauses in general and explains their function in specific sentences.</p> <p>b. makes informed choices among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</p> <p>c. effectively places phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.</p>



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.L.2	<p>demonstrates basic understanding of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. inconsistently uses 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. spells grade-level words correctly.</p>	<p>demonstrates understanding of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. uses 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. spells grade-level words correctly.</p>	<p>demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. uses 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. spells correctly.</p>	<p>demonstrates correct application and command of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. uses 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. spells above-grade-level words correctly.</p>
Detailed	7.L.3	<p>uses a basic knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. inconsistently chooses language that expresses ideas without wordiness and redundancy.</p>	<p>uses knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. chooses language that expresses ideas precisely and concisely, occasionally recognizing and eliminating wordiness and redundancy.</p>	<p>uses knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. chooses language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.</p>	<p>uses comprehensive knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. strategically chooses language that expresses ideas precisely and concisely, consciously recognizing and eliminating wordiness and redundancy.</p>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.L.4	<p>inconsistently determines or clarifies the meaning of unknown and multiple-meaning words and phrases, using at least one strategy:</p> <p>a. uses 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. uses common, below-grade Greek or Latin affixes and roots as clues to the meaning of a word</p> <p>c. consults 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. verifies 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>determines or clarifies the meaning of unknown and multiple-meaning words and phrases, using one or more strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies 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>determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies 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>authoritatively determines or clarifies the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies 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>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.L.5	<p>demonstrates limited understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. inconsistently identifies figures of speech (e.g., literary, biblical, mythological allusions) in context.</p> <p>b. inconsistently identifies the relationship between particular basic words (e.g., synonym/antonym, analogy) to better understand each of the words.</p> <p>c. inconsistently identifies the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).</p>	<p>demonstrates basic understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. identifies figures of speech (e.g., literary, biblical, mythological allusions) in context.</p> <p>b. identifies the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.</p> <p>c. identifies the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).</p>	<p>demonstrates understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. interprets figures of speech (e.g., literary, biblical, and mythological allusions) in context.</p> <p>b. uses the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.</p> <p>c. distinguishes among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).</p>	<p>demonstrates deep understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. interprets figures of speech (e.g., literary, biblical, mythological allusions) in context to evaluate the effect of diction upon the text.</p> <p>b. uses the relationship between particular words (e.g., synonym/antonym, analogy) to evaluate the effect of diction upon the text.</p> <p>c. distinguishes among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending) to evaluate the effect of diction upon the text.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literary Text</b>					
Detailed	8.RL.1	cites textual evidence to support an analysis of what the text says explicitly.	cites textual evidence to support an analysis of what the text says explicitly as well as inferences drawn from the text.	cites the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	applies thorough textual evidence to strongly support a deep analysis of the text as well as complex inferences drawn from the text.
Detailed	8.RL.2	identifies a theme or central idea of a text; identifies characters, setting, and plot; provides a list of events from the text.	identifies a theme or central idea of a text and determines details or events that develop it; explains characters, setting, and plot; provides a simple, objective summary of the text.	determines a theme or central idea of a text and analyzes its development over the course of a text, including its relationship to the characters, setting, and plot; provides an objective summary of the text.	determines two or more themes or central ideas and analyzes their development over the course of a text; evaluates the theme(s) or central idea(s) and the relationship to narrative elements; provides a concise and comprehensive objective summary of the text.
Detailed	8.RL.3	identifies specific lines of dialogue or incidents in a story or drama that propel the action and reveal aspects of the character.	describes how specific lines of dialogue or incidents in a story or drama propel the action and reveal aspects of the character.	analyzes how specific lines of dialogue or incidents in a story or drama propel the action, reveal aspects of the character, or provoke a decision.	analyzes and evaluates the effectiveness of an author's use of dialogue or incidents in a story or drama to propel the action, reveal aspects of the character, or provoke a decision.
Detailed	8.RL.4	identifies the literal or figurative meaning of words and phrases as they are used in a text; identifies words that impact meaning and tone.	distinguishes between literal, figurative, and connotative meanings of words and phrases as they are used in a text; determines the effect of specific word choices on meaning and tone, including analogies or allusions to other texts.	determines the meaning of words and phrases, including figurative and connotative meanings; analyzes the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	determines the meaning and evaluates the impact of words and phrases, including figurative and connotative meanings; analyzes and evaluates the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.RL.5	compares and contrasts the structure of two texts.	compares and contrasts the structure of two or more texts, describing the connection to their meaning and style.	compares and contrasts the structure of two or more texts, analyzing how the differing structure of each text contributes to its meaning and style.	compares and contrasts, then evaluates for effectiveness, the structure of two or more texts, analyzing how the differing structure of each text contributes to meaning and style.
Detailed	8.RL.6	identifies that differences in the points of view of the characters or the reader affect the meaning of the text.	describes how differences in the points of view of the characters or the reader contribute to an understanding of the text.	analyzes how differences in the points of view of the characters or the reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor in the text.	evaluates the impact of differences in the points of view of the characters or the reader (e.g., created through the use of dramatic irony) and the effectiveness of creating suspense or humor in the text.
Detailed	8.RL.7	identifies the extent to which a film of a story or drama stays faithful to or departs from the text or script.	describes the extent to which a film of a story or drama stays faithful to or departs from the text or script, identifying the choices made by the director or actors.	analyzes the extent to which a film of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.	evaluates the extent to which a film of a story or drama stays faithful to or departs from the text or script; critiques the choices made by the director or actors and proposes alternate treatments.
Detailed	8.RL.9	identifies a relationship between a modern work of fiction and patterns of events or character types from myths, traditional stories, or religious works.	determines how a modern work of fiction draws on explicit themes, patterns of events, or character types from myths, traditional stories, or religious works, describing how the material is rendered new.	analyzes how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works, including how the material is rendered new.	evaluates how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works; evaluates the impact of the newly rendered material.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Reading: Informational Text</b>					
Detailed	8.RI.1	cites textual evidence to support an analysis of what the text says explicitly.	cites textual evidence to support an analysis of what the text says explicitly as well as inferences drawn from the text.	cites the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	applies thorough textual evidence to strongly support a deep analysis of the text as well as complex inferences drawn from the text.
Detailed	8.RI.2	identifies a central idea of a text; provides a list of events or details from the text.	identifies a central idea of a text and describes its development over the course of a text; provides a simple, objective summary of the text.	determines a central idea of a text and analyzes its development over the course of a text, including its relationship to supporting ideas; provides an objective summary of the text.	determines and analyzes the central ideas of a text and analyzes their development over the course of a text; evaluates the strength of the supporting ideas; provides a comprehensive objective summary of the text.
Detailed	8.RI.3	identifies that a text makes explicit connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).	describes how a text makes explicit connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).	analyzes how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).	evaluates how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
Detailed	8.RI.4	identifies the literal or figurative meaning of words and phrases as they are used in a text; identifies the impact of specific word choices on meaning and tone.	determines the meaning of basic words and phrases as they are used in a text, including common figurative, connotative, and technical meanings; describes the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyzes the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	analyzes the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; evaluates the rhetorical effect of specific word choices on meaning and tone, including analogies or allusions to other texts.
Detailed	8.RI.5	describes the structure of a specific paragraph in a text; describes the role of particular sentences in creating that structure.	identifies the structure of a specific paragraph in a text and describes its effect on a text; describes the role of particular sentences in developing and refining a key concept.	analyzes in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.	evaluates the effect of the structure of a specific paragraph in a text and its role in the text as a whole, including the role of particular sentences in developing and refining a key concept.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.RI.6	identifies an author's point of view or purpose in a text; identifies examples where the author acknowledges or responds to conflicting evidence or viewpoints.	identifies an author's point of view or purpose in a text and describes how the author acknowledges and responds to conflicting evidence or viewpoints.	determines an author's point of view or purpose in a text and analyzes how the author acknowledges and responds to conflicting evidence or viewpoints.	analyzes an author's point of view or purpose in a text and evaluates the effect of how the author acknowledges and responds to conflicting evidence or viewpoints.
Detailed	8.RI.7	identifies differences or similarities in the presentation of a particular topic or idea as presented in different media (e.g., print or digital text, video, multimedia).	compares and contrasts the use of different media (e.g., print or digital text, video, multimedia) in presenting a particular topic or idea.	evaluates the advantages and disadvantages of using different media (e.g., print or digital text, video, multimedia) to present a particular topic or idea.	evaluates and critiques the use of different media (e.g., print or digital text, video, multimedia) to present a particular topic or idea, providing specific evidence as support.
Detailed	8.RI.8	identifies the argument or specific claims in a text, describing the reasoning and evidence used to support the argument or claims.	describes the argument and specific claims in a text, discussing whether the reasoning is sound and the evidence is relevant and sufficient.	delineates and evaluates 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.	synthesizes the argument and specific claims in a text, citing specific language to evaluate whether the reasoning is sound and the evidence is relevant and sufficient; recognizes irrelevant evidence and proves its irrelevancy.
Detailed	8.RI.9	identifies a case in which two or more texts provide conflicting information on the same topic, and identifies where the texts disagree.	describes a case in which two or more texts provide conflicting information on the same topic, and identifies where the texts disagree on matters of fact.	analyzes a case in which two or more texts provide conflicting information on the same topic, and identifies where the texts disagree on matters of fact or interpretation.	analyzes and evaluates a case in which two or more texts provide conflicting information on the same topic, and identifies where the texts disagree on matters of fact or interpretation, evaluating the strength or reliability of each.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	8.W.1	<p>writes arguments to support claims with reasons and evidence.</p> <p>a. introduces claim(s), states opposing claims, and organizes reasons and evidence.</p> <p>b. supports claims with extratextual evidence, and demonstrating a basic understanding of the topic or text.</p> <p>c. uses transition words to link claim(s), counterclaims, reasons, and evidence.</p> <p>d. attempts to establish a formal style.</p> <p>e. provides a concluding statement or section.</p>	<p>writes arguments to support claims with reasons and relevant evidence.</p> <p>a. introduces claim(s), states alternate or opposing claims, and organizes the reasons and evidence logically.</p> <p>b. supports claims with reasoning and evidence, using sources and demonstrating an understanding of the topic or text.</p> <p>c. uses words, phrases, and clauses to clarify the relationships among claim(s), counterclaims, reasons, and evidence.</p> <p>d. establishes a formal style.</p> <p>e. provides a concluding statement or section that supports the argument presented.</p>	<p>writes arguments to support claims with clear reasons and relevant evidence.</p> <p>a. introduces claim(s), acknowledges and distinguishes the claim(s) from alternate or opposing claims, and organizes the reasons and evidence logically.</p> <p>b. supports claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p> <p>c. uses words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</p> <p>d. establishes and maintains a formal style.</p> <p>e. provides a concluding statement or section that follows from and supports the argument presented.</p>	<p>writes arguments to support claims with clear reasons and analysis of relevant evidence.</p> <p>a. introduces claims, acknowledges and distinguishes the claims from alternate or opposing claims, evaluating their validity, and organizes the reasons and evidence logically.</p> <p>b. supports claims with a clear position based on logical reasoning and relevant evidence using accurate, credible sources and demonstrating a deep understanding of the topic or text.</p> <p>c. uses a variety of words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</p> <p>d. establishes and maintains a formal style and objective tone that enhances the argument.</p> <p>e. provides a compelling concluding statement or section that follows from and supports the argument presented.</p>



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.W.2	<p>writes informative/explanatory text to describe a topic through the selection and organization of content.</p> <p>a. introduces a topic; attempts an organization of ideas, concepts, and information.</p> <p>b. summarizes the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to create cohesion.</p> <p>d. uses topic-appropriate language and vocabulary to inform.</p> <p>e. attempts a formal style.</p> <p>f. provides a concluding statement or section.</p>	<p>writes informative/explanatory texts to explain a topic and convey ideas, concepts, and information through the selection and organization of content.</p> <p>a. introduces a topic clearly, previewing what is to follow; organizes ideas, concepts, and information into broader categories.</p> <p>b. develops the topic with facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. uses topic-appropriate language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. establishes a formal style.</p> <p>f. provides a concluding</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. introduces a topic clearly, previewing what is to follow; organizes ideas, concepts, and information into broader categories; includes formatting (e.g., headings), graphics (e.g., charts, tables), when useful to aid comprehension.</p> <p>b. develops the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. uses precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. establishes and maintains a formal style.</p>	<p>writes informative/explanatory texts to examine a topic and convey ideas, concepts, and information with a strongly-developed focus through the selection, organization, and analysis of highly relevant content.</p> <p>a. introduces a complex topic clearly, previewing what is to follow; organizes ideas, concepts, and information into broader categories; includes formatting (e.g., headings), and graphics (e.g., charts, tables) when useful to enhance comprehension.</p> <p>b. develops and analyzes the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. effectively uses appropriate and varied transitions to create cohesion and clarify the relationships among complex ideas and concepts.</p> <p>d. uses precise language and domain-specific vocabulary to manage the complexity of the topic.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	8.W.4-6	produces writing in which the development, organization, and style are appropriate to task and purpose; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on purpose and audience; editing should demonstrate basic command of Language standards 1-3 up to and including grade 8; uses technology to produce writing.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed; editing should demonstrate command of Language standards 1-3 up to and including grade 8; uses technology to produce writing and present the relationships between information and ideas.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens 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; uses technology to produce writing and present the relationships between information and ideas efficiently.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens 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 skillful command of Language standards 1-3 up to and including grade 8; uses technology to produce writing and present the relationships between information and ideas in a dynamic way.
Detailed	8.W.7-8	conducts short research projects to answer a question, drawing on minimal sources; gathers relevant information from sources and redirects inquiry as appropriate; assesses the credibility of each source; quotes or paraphrases the data and conclusions of others while avoiding plagiarism. Attempts to follow a standard format for citation.	conducts short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional ideas; gathers relevant information from multiple sources; assesses the credibility and accuracy of each source; quotes or paraphrases the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	conducts 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; gathers relevant information from multiple sources; assesses the credibility and accuracy of each source; and quotes or paraphrases the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	conducts 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 and evaluation; gathers and synthesizes relevant information from multiple sources; assesses the credibility and accuracy of each source; and judiciously quotes or paraphrases the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Listening					
Detailed	8.SL.2	identifies the purpose of information presented in diverse media and formats.	determines the purpose of information presented in diverse media and formats and describes the motives behind its presentation	analyzes the purpose of information presented in diverse media and formats and evaluates the motives behind its presentation.	analyzes and evaluates the information presented in diverse media and formats to critique the motives and evaluate the impact of the presentation.
Detailed	8.SL.3	identifies a speaker's argument and specific claims.	explains a speaker's argument and specific claims, identifying whether the reasoning is sound.	delineates a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.	traces and analyzes the argument and specific claims of a speaker, citing specific examples to evaluate whether the reasoning is sound and the evidence is relevant and sufficient; recognizes irrelevant evidence and proves its irrelevancy.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		Language			
Detailed	8.L.1	<p>demonstrates basic understanding of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. recognizes the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.</p> <p>b. inconsistently forms and uses verbs in the active and passive voice.</p> <p>c. inconsistently forms and uses verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.</p> <p>d. recognizes inappropriate shifts in verb voice and mood.</p>	<p>demonstrates understanding of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. describes the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.</p> <p>b. forms and uses verbs in the active and passive voice.</p> <p>c. generally forms and uses verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.</p> <p>d. recognizes and occasionally corrects inappropriate shifts in verb voice and mood.</p>	<p>demonstrates command of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. explains the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.</p> <p>b. forms and uses verbs in the active and passive voice.</p> <p>c. forms and uses verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.</p> <p>d. recognizes and corrects inappropriate shifts in verb voice and mood.</p>	<p>demonstrates strong command of the conventions of standard English grammar and usage when writing or speaking:</p> <p>a. explains the function of verbals (gerunds, participles, infinitives) in general and evaluates their function in particular sentences.</p> <p>b. intentionally forms and uses verbs in the active and passive voice to achieve a desired style.</p> <p>c. strategically forms and uses verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.</p> <p>d. analyzes and corrects inappropriate shifts in verb voice and mood.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.L.2	<p>demonstrates awareness of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. inconsistently uses punctuation (comma, ellipsis, dash) to indicate a pause or break.</p> <p>b. inconsistently uses an ellipsis to indicate an omission.</p> <p>c. spells below grade-level correctly.</p>	<p>demonstrates basic understanding of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. generally uses punctuation (comma, ellipsis, dash) to indicate a pause or break.</p> <p>b. uses an ellipsis to indicate an omission.</p> <p>c. spells grade-level words correctly.</p>	<p>demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. uses punctuation (comma, ellipsis, dash) to indicate a pause or break.</p> <p>b. uses an ellipsis to indicate an omission.</p> <p>c. spells correctly.</p>	<p>demonstrates strong and purposeful command of the conventions of standard English capitalization, punctuation, and spelling when writing:</p> <p>a. judiciously uses punctuation (comma, ellipsis, dash) to indicate a pause or break.</p> <p>b. uses an ellipsis to indicate an omission.</p> <p>c. spells unfamiliar and above-grade level words correctly.</p>
Detailed	8.L.3	<p>attempts to apply of the conventions of language when writing, speaking, reading, or listening:</p> <p>a. inconsistently uses 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; expressing uncertainty or describing a state contrary to fact).</p>	<p>demonstrates basic knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. uses 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; expressing uncertainty or describing a state contrary to fact).</p>	<p>uses knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. uses 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; expressing uncertainty or describing a state contrary to fact).</p>	<p>uses comprehensive knowledge of language and its conventions when writing, speaking, reading, or listening:</p> <p>a. strategically uses 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; expressing uncertainty or describing a state contrary to fact).</p>

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.L.4	<p>inconsistently determines or clarifies the meaning of unknown and multiple-meaning words or phrases, using at least one strategy:</p> <p>a. uses 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. uses common, below-grade Greek or Latin affixes and roots as clues to the meaning of a word.</p> <p>c. consults 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. verifies the preliminary determination of the meaning of a word or phrase (e.g., by</p>	<p>generally determines or clarifies the meaning of unknown and multiple-meaning words or phrases, using one or more strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies the preliminary determination of the meaning of</p>	<p>determines or clarifies the meaning of unknown and multiple-meaning words or phrases, choosing flexibly from a range of strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies 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>authoritatively determines or clarifies the meaning of unknown and multiple-meaning words or phrases, choosing flexibly from a range of strategies:</p> <p>a. uses 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. uses 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. consults 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. verifies 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>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.L.5	<p>demonstrates limited understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. identifies figures of speech (e.g., verbal irony, puns) in context.</p> <p>b. uses the relationship between particular basic words to better understand each of the words.</p> <p>c. generally distinguishes among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).</p>	<p>demonstrates basic understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. interprets figures of speech (e.g., verbal irony, puns) in context.</p> <p>b. uses the relationship between particular words to better understand each of the words.</p> <p>c. distinguishes among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).</p>	<p>demonstrates understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. interprets figures of speech (e.g., verbal irony, puns) in context.</p> <p>b. uses the relationship between particular words to better understand each of the words.</p> <p>c. distinguishes among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).</p>	<p>demonstrates deep understanding of figurative language, word relationships, and nuances in word meanings:</p> <p>a. interprets figures of speech (e.g., verbal irony, puns) in context.</p> <p>b. uses the relationship between particular words to better understand each of the words.</p> <p>c. distinguishes and evaluates the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	9-10.RL.1	cites textual evidence to support analysis of what the text says explicitly.	cites textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	cites strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	cites strong and thorough textual evidence to support a deep analysis of what the text says explicitly as well as complex inferences drawn from the text.
Detailed	9-10.RL.2	identifies a theme or central idea of a text and describes its development over the course of a text; provides a restatement of the text.	determines a theme or central idea of a text and describes in detail its development over the course of a text; provides a basic summary of the text.	determines a theme or central idea of a text and analyzes in detail its development over the course of a text, including how it emerges and is shaped and refined by specific details; provides an objective summary of the text.	determines and evaluates a theme or central idea of a text and analyzes in detail its development over the course of a text, including how it emerges and is shaped and refined by specific details; provides a comprehensive, objective summary of the text.
Detailed	9-10.RL.3	identifies how characters develop, interact with other characters, and advance the plot or develop the theme.	describes how characters develop over the course of the text, interact with other characters, and advance the plot or develop the theme.	analyzes how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of the text, interact with other characters, and advance the plot or develop the theme.	analyzes the effectiveness of the author's development of complex characters (e.g., those with multiple or conflicting motivations) over the course of the text, including how they interact to advance the plot or shape the theme.



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.RL.4	with textual support (e.g., context clues, embedded definition, etc.), determines the literal meaning of words and phrases as they are used in the text; describes the impact of specific word choices on meaning.	with textual support (e.g., context clues, embedded definition, etc.), determines the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyzes the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).	determines the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyzes the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).	determines the meaning of complex words and phrases as they are used in the text, including figurative and connotative meanings; analyzes and evaluates the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).
Detailed	9-10.RL.5	identifies an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks).	describes an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks).	analyzes how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.	analyzes how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise, and evaluates their impact on the text as a whole.
Detailed	9-10.RL.6	identifies a particular point of view or cultural experience reflected in a work of literature from outside the United States.	describes a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on general knowledge of world literature.	analyzes a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.	analyzes competing points of view or cultural experiences reflected in a work of literature from outside the United States, drawing on a deep understanding of world literary traditions.
Detailed	9-10.RL.7	identifies the differences in a depiction of a subject or a key scene in two different artistic media (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).	compares and contrasts the differences in a depiction of a subject or a key scene in two different artistic media, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).	analyzes the representation of a subject or a key scene in two different artistic media, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).	analyzes the effect of the representation of a subject or a key scene in two different artistic media, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.RL.9	recognizes that an author draws on source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).	describes how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).	analyzes how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).	analyzes the effectiveness of how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare) in a demonstration of deeper understanding of the text.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Reading: Informational Text</b>			
Detailed	9-10.RI.1	cites textual evidence to support analysis of what the text says explicitly as well as simple inferences drawn from the text.	cites strong textual evidence to support analysis of what the text says explicitly as well as simple inferences drawn from the text.	cites strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	cites strong and thorough textual evidence to support a deep analysis of what the text says explicitly as well as complex inferences drawn from the text.
Detailed	9-10.RI.2	identifies a central idea of a text and describes its development; provides a restatement of the text.	determines a central idea of a text and describes its development over the course of a text; provides a summary of the text.	determines a central idea of a text and analyzes its development over the course of the text, including how it emerges and is shaped and refined by specific details; provides an objective summary of the text.	determines and evaluates a central idea of a text and analyzes in detail its development over the course of a text, including how it emerges and is shaped and refined by specific details; provides a comprehensive, objective summary of the text.
Detailed	9-10.RI.3	identifies how the author unfolds an analysis or series of ideas or events, including the order in which the points are made and how they are introduced and developed.	describes how the author unfolds an analysis or a series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.	analyzes how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.	evaluates the effect of how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
Detailed	9-10.RI.4	with textual support (e.g., context clues, embedded definition, etc.), determines the meaning of words and phrases as they are used in a text; identifies the impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).	with textual support (e.g., context clues, embedded definition, etc.), determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; describes the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).	determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyzes the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).	analyzes the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; evaluates the cumulative rhetorical effect of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.RI.5	identifies how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).	describes how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).	analyzes in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).	evaluates how an author develops his or her ideas or claims and refines them with particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).
Detailed	9-10.RI.6	identifies an author's point of view or purpose in a text; identifies the author's use of rhetoric to advance that point of view or purpose.	identifies an author's point of view or purpose in a text and describes how an author uses rhetoric to advance that point of view or purpose.	determines an author's point of view or purpose in a text and analyzes how an author uses rhetoric to advance that point of view or purpose.	analyzes an author's point of view or purpose in a text and evaluates the effectiveness of an author's use of rhetoric to advance that point of view or purpose.
Detailed	9-10.RI.7	describes various accounts of a subject told in different media (e.g., a person's life story in both print and multimedia).	compares and contrasts various accounts of a subject told in different media (e.g., a person's life story in both print and multimedia), identifying which details are emphasized in each account.	analyzes various accounts of a subject told in different media (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.	analyzes various accounts of a subject told in different media (e.g., a person's life story in both print and multimedia), evaluating the effect of the emphasis of different details in each account.
Detailed	9-10.RI.8	delineates and evaluates the argument and claims in a text, describing the reasoning and evidence used to support the claim.	delineates and evaluates the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient.	delineates and evaluates the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identifies false statements and fallacious reasoning.	explicates and evaluates the argument and specific claims in a text, citing specific language from the text in an assessment of whether the reasoning is valid and the evidence is relevant and sufficient; identifies subtle instances of false statements and fallacious reasoning.
Detailed	9-10.RI.9	describes specific aspects of seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail").	analyzes specific aspects of seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail").	analyzes seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail"), including how they address related themes and concepts.	evaluates the reasoning and rhetorical strategies employed in seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail"), including how they address related themes and concepts.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	9-10.W.1	writes arguments to support claims in an analysis of substantive topics or texts, using reasoning and evidence.  a. introduces claim(s) and creates an organization, establishing relationships among claim(s), reasons, and evidence.  b. develops claim(s), supplying evidence in a manner that anticipates the audience's concerns.  c. uses words, phrases, and clauses to link the major sections of the text and clarify the relationships between claim(s) and reasons, and between reasons and evidence.  d. attempts a formal style and	writes arguments to support claims in an analysis of substantive topics or texts, using reasoning and relevant evidence.  a. introduces claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an organization that establishes relationships among claim(s), counterclaims, reasons, and evidence.  b. develops claim(s) and counterclaims, supplying evidence for each while pointing out the strengths of both in a manner that anticipates the audience's concerns.  c. uses words, phrases, and clauses to link the major sections of the text and clarify the relationships between claim(s) and reasons, between	writes arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.  a. introduces precise claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.  b. develops claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.  c. uses words, phrases, and clauses to link the major sections of the text,	writes highly effective arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.  a. introduces strong and precise claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an effective organization that establishes strong, clear relationships among claim(s), counterclaims, reasons, and evidence.  b. develops strong claim(s) and counterclaims fairly, supplying thorough evidence for each while pointing out the strengths and limitations of both in a manner that effectively anticipates the audience's knowledge level and concerns.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<p>objective tone while demonstrating awareness of the norms and conventions of standard English.</p> <p>e. provides a concluding statement or section.</p>	<p>reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes a formal style and objective tone while demonstrating awareness of the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides a concluding statement or section that supports the argument presented.</p>	<p>create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides a concluding statement or section that follows from and supports the argument presented.</p>	<p>c. uses precise words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes and maintains a rhetorically appropriate formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides an effective concluding statement or section that follows from and supports the argument presented.</p>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.W.2	<p>writes informative/explanatory texts to examine and convey ideas, concepts, and information through the selection, organization, and analysis of content.</p> <p>a. states a topic; attempts an organization of ideas, concepts, and information to make connections and distinctions.</p> <p>b. develops the topic with information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. uses appropriate transitions to link the major sections of the texts.</p> <p>d. uses topic-appropriate language and vocabulary to describe the topic.</p> <p>e. attempts a formal style and objective tone while demonstrating awareness of the norms and conventions of standard English.</p>	<p>writes informative/explanatory texts to examine and convey ideas, concepts, and information accurately through the selection, organization, and analysis of content.</p> <p>a. states a topic; organizes ideas, concepts, and information to make connections and distinctions; includes formatting (e.g., headings) and graphics (e.g., figures, tables) to aid comprehension.</p> <p>b. develops the topic with relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience.</p> <p>c. uses appropriate transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>d. uses topic-appropriate language and domain-specific vocabulary to manage the complexity of the topic.</p> <p>e. establishes a formal style and</p>	<p>writes informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p> <p>a. introduces a topic; organizes complex ideas, concepts, and information to make important connections and distinctions; includes formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to aiding comprehension.</p> <p>b. develops the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. uses appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>	<p>writes highly effective informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p> <p>a. clearly introduces a topic; strategically organizes complex ideas, concepts, and information to make important connections and distinctions; includes important formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to aiding comprehension.</p> <p>b. thoroughly develops the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. consistently and effectively uses appropriate and varied transitions to link the major sections of the text, creates cohesion, and clarifies the relationships among complex ideas</p>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		f. provides a concluding statement or section.	objective tone while demonstrating awareness of the norms and conventions of the discipline in which he or she is writing.  f. provides a concluding statement or section that supports the information or explanation presented.	d. uses precise language and domain-specific vocabulary to manage the complexity of the topic.  e. establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.  f. provides a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).	and concepts.  d. uses precise language, domain-specific vocabulary, and figures of speech to manage the complexity of the topic.  e. establishes and maintains a rhetorically effective formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.  f. provides an effective concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.W.4-6	produces writing in which the development, organization, and style are appropriate to the task and purpose; strengthens writing as needed by revising and editing; uses technology to produce writing.	produces coherent writing in which the development, organization, and style are appropriate to the task, purpose, and audience; strengthens writing as needed by planning, revising, and editing; uses technology, including the Internet, to produce and publish writing products, taking advantage of technology's capacity to display information flexibly and dynamically.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience; develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience; uses technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.	produces clear and coherent writing in which the development, organization, and style are highly effective for the task, purpose, and audience; develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience; uses technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
Detailed	9-10.W.7	conducts short research projects to answer a given simple question or solve a given simple problem; uses discrete information from sources on the subject, demonstrating a developing understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a simple question (including a self-generated question) or solve a simple problem; narrows or broadens the inquiry when appropriate; synthesizes sources on the subject, demonstrating understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrows or broadens the inquiry when appropriate; synthesizes multiple sources on the subject, demonstrating understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a complex question (including a self-generated question) or solve a complex problem; narrows or broadens the inquiry when appropriate; synthesizes multiple high-quality sources on the subject, demonstrating complete understanding of the subject under investigation.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.W.8	gathers information from print and digital sources; integrates information into the text, avoiding plagiarism and following a standard format for citation.	gathers relevant information from multiple print and digital sources, using searches effectively; assesses the usefulness of each source in answering the research question; integrates information into the text to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	gathers relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assesses the usefulness of each source in answering the research question; integrates information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	gathers highly relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assesses and analyzes the usefulness of each source in answering the research question; seamlessly integrates information into the text selectively to create and maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	9-10.SL.2	uses multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally).	uses multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally), evaluating the credibility and accuracy of each source.	integrates multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally), evaluating the credibility and accuracy of each source.	effectively integrates multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) to meet the needs of a specific task, audience, and purpose, while evaluating the credibility and accuracy of each source.
Detailed	9-10.SL.3	summarizes a speaker's point of view, reasoning, and use of evidence.	evaluates a speaker's point of view, reasoning, and use of evidence, identifying any fallacious reasoning.	evaluates a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.	thoroughly evaluates a speaker's point of view, reasoning, and use of evidence and rhetoric, analyzing any fallacious reasoning or exaggerated or distorted evidence.
<b>Language</b>					
Detailed	9-10.L.1	attempts to meet the conventions of standard English grammar and usage when writing or speaking: uses various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, noun, relative, adverbial) to add interest to writing or presentations.	demonstrates basic understanding of the conventions of standard English grammar and usage when writing or speaking.  a. uses parallel structure.  b. uses various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, noun, relative, adverbial) to convey meanings and add interest to writing or presentations.	demonstrates command of the conventions of standard English grammar and usage when writing or speaking.  a. uses parallel structure.  b. uses various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.	demonstrates strong command of the conventions of standard English grammar and usage when writing or speaking.  a. uses parallel structure.  b. uses various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, noun, relative, adverbial) to convey specific meanings and add variety, craft, style, depth of meaning, and interest to writing or presentations.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.L.2	attempts to meet the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>demonstrates basic understanding of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>a. attempts to use a semicolon to link two or more closely related independent clauses.</p> <p>b. attempts to use a colon to introduce a list or quotation.</p> <p>c. spells correctly.</p>	<p>demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>a. uses a semicolon to link two or more closely related independent clauses.</p> <p>b. uses a colon to introduce a list or quotation.</p> <p>c. spells correctly.</p>	<p>demonstrates strong command of the conventions of standard English capitalization, punctuation, and spelling when writing, using that command to enhance style and meaning.</p> <p>a. uses a semicolon to link two or more closely related independent clauses.</p> <p>b. uses a colon to introduce a list or quotation.</p>
Detailed	9-10.L.3	uses knowledge of language for comprehension when reading or listening and makes choices for meaning or style.	uses knowledge of language for comprehension when reading or listening and makes choices for meaning or style; writes and edits work to conform to a formal or informal style.	applies knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. Writes and edits work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook, Turabian's Manual for Writers) appropriate for the discipline and writing type.	applies knowledge of language to demonstrate how language functions in different contexts, to make highly effective choices for meaning or style, and to fully comprehend when reading or listening; writes and edits work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook, Turabian's Manual for Writers) appropriate for the discipline and writing type.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	9-10.L.4	determines the meaning of unknown or multiple-meaning grade-level words by using immediate context clues or attempting to use patterns of word changes.	determines the meaning of unknown or multiple-meaning grade-level words by using context clues within the same sentence; identifies and attempts to use patterns of word changes that indicate different meanings; or consults general reference materials, both print and digital.	determines and clarifies the meaning of unknown or multiple-meaning grade level words by using context clues within the text; identifies and correctly uses patterns of word changes that indicate different meanings or parts of speech; consults general and specialized reference materials, both print and digital, to determine its part of speech or its etymology; and/or verifies the preliminary determination of the meaning of a word or phrase.	determines and clarifies the meanings of unknown and multiple-meaning words, including above-grade-level words, by using context clues within the text; identifies and correctly uses patterns of word changes that indicate different meanings or parts of speech; consults general and specialized reference materials, both print and digital, to determine its part of speech or its etymology; and/or verifies the meaning of a word or phrase.
Detailed	9-10.L.5	recognizes figurative language and word relationships by identifying figures of speech and nuances in word meanings.	demonstrates understanding of straightforward figurative language, clear word relationships, and nuances in word meanings by identifying and attempting to interpret figures of speech in texts and recognizing nuances in the meaning of words.	<p>demonstrates understanding of figurative language, word relationships, and nuances in word meanings.</p> <p>a. interprets figures of speech in context and analyzes their role in texts.</p> <p>b. analyzes nuances in the meaning of words with similar denotations.</p>	<p>demonstrates understanding of complex figurative language, complex word relationships, and subtle nuances in word meanings.</p> <p>a. interprets and uses figures of speech in context and analyzes their role in texts.</p> <p>b. analyzes and uses nuances in the meaning of words with similar denotations.</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		For grade-appropriate, low-complexity texts, the Minimally Proficient student	For grade-appropriate, low- to moderate-complexity texts, the Partially Proficient student	For grade-appropriate, moderate- to high-complexity texts, the Proficient student	For grade-appropriate, high-complexity texts, the Highly Proficient student
<b>Reading: Literature</b>					
Detailed	11.RL.1	cites textual evidence to support analysis of what the text says explicitly as well as simple inferences drawn from the text.	cites strong textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	cites strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	cites strong and thorough textual evidence to support a deep analysis of what the text says explicitly as well as complex inferences drawn from the text, including determining where the text leaves matters uncertain and how they could be clarified.
Detailed	11.RL.2	determines two explicit themes or central ideas of a text and describes their development over the course of the text; provides a simple summary of the text.	determines two themes or central ideas of a text and analyzes their development over the course of the text; provides a simple objective summary of the text.	determines two or more themes or central ideas of a text and analyzes their development over the course of the text, including how they interact and build on one another to produce a complex account; provides an objective summary of the text.	determines two or more subtle themes or central ideas of a text; analyzes and evaluates their development over the course of the text, including how they interact and build on one another to produce a complex account; provides a comprehensive objective summary of the text.
Detailed	11.RL.3	describes the author's choices regarding how to develop and relate basic elements of a story or drama (e.g., setting, characters, plot).	analyzes the impact of the author's choices regarding how to develop and relate basic elements of a story or drama (e.g., setting, characters, plot).	analyzes the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).	analyzes and evaluates the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	11.RL.4	with textual support (e.g., context clues, embedded definitions), determines the literal meaning of words and phrases as they are used in the text, including figurative and connotative meanings.	with textual support (e.g., context clues, embedded definitions), determines the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyzes the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.	determines the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyzes the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.	determines the meaning of complex words and phrases as they are used in the text, including figurative and connotative meanings; analyzes and evaluates the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.
Detailed	11.RL.5	identifies an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution).	describes an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution).	analyzes how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.	analyzes and evaluates the effectiveness of an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution), including how they contribute to its overall structure and meaning as well as its aesthetic impact.
Detailed	11.RL.6	identifies a clear case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).	identifies a subtle case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).	analyzes a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).	analyzes a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement), and evaluates its rhetorical effect and aesthetic impact.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.RL.7	describes differences in interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), identifying how each version interprets the source text.	compares and contrasts multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), describing how each version interprets the source text.	analyzes multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text.	analyzes multiple, subtly different interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating each version's interpretation of the source text and how that interpretation affects the overall meaning.
Detailed	11.RL.9	demonstrates knowledge of some eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two texts treat similar topics.	demonstrates knowledge of a core group of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two texts from the same period treat similar themes or topics.	demonstrates knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.	demonstrates thorough knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, analyzing and evaluating how two or more texts from the same period in an analysis of their treatment of similar themes or topics.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		Reading: Informational Text			
Detailed	11.RI.1	cites textual evidence to support analysis of what the text says explicitly as well as simple inferences drawn from the text.	cites strong textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	cites strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	cites strong and thorough textual evidence to support a deep analysis of what the text says explicitly as well as complex inferences drawn from the text, including determining where the text leaves matters uncertain and how they could be clarified.
Detailed	11.RI.2	determines two explicit central ideas of a text and describes their development over the course of the text; provides a simple summary of the text.	determines two central ideas of a text and analyzes their development over the course of the text; provides a simple, objective summary of the text.	determines two or more central ideas of a text and analyzes their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provides an objective summary of the text.	determines two or more subtle central ideas of a text; analyzes and evaluates their development over the course of the text, including how they interact and build on one another to produce a complex analysis; provides a comprehensive, objective summary of the text.
Detailed	11.RI.3	describes a set of ideas or sequence of events and identifies how specific individuals, ideas, or events interact and develop in specific sections of the text.	analyzes a set of ideas or sequence of events and identifies how specific individuals, ideas, or events interact and develop in specific sections of the text.	analyzes a complex set of ideas or sequence of events and explains how specific individuals, ideas, or events interact and develop over the course of the text.	evaluates the effect of the presentation of a complex set of ideas or sequence of events and explains how specific individuals, ideas, or events interact and develop over the course of the text.
Detailed	11.RI.4	with textual support (e.g., context clues, embedded definitions), determines the meaning of words and phrases as they are used in a text; identifies how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in <i>Federalist</i> No. 10).	with textual support (e.g., context clues, embedded definitions), determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; describes how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in <i>Federalist</i> No. 10).	determines the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyzes how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in <i>Federalist</i> No. 10).	analyzes the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; evaluates the rhetorical effect of how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in <i>Federalist</i> No. 10).

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	11.RI.5	analyzes the structure the author uses in his or her exposition or argument.	analyzes and evaluates the effectiveness of the structure an author uses in his or her exposition or argument.	analyzes and evaluates the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.	analyzes and evaluates the effectiveness of both the structure an author uses in his or her exposition or argument and alternate structures, including whether the structure makes points clear, convincing, and engaging.
Detailed	11.RI.6	identifies an author's point of view or purpose in a text in which the rhetoric is particularly effective; identifies the contribution of the text's style and content.	identifies an author's point of view or purpose in a text in which the rhetoric is particularly effective, describing how style and content contribute to the power, persuasiveness, or beauty of the text.	determines an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.	analyzes an author's point of view or purpose in a text in which the rhetoric is particularly effective; evaluates the effectiveness of the author's style and content, including their contribution to the power, persuasiveness, or beauty of the text.
Detailed	11.RI.7	uses information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.	integrates multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.	integrates and evaluates multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.	synthesizes, integrates, and evaluates multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem; evaluates the effect of the proposed answer or solution.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.RI.8	delineates and evaluates the reasoning in seminal U.S. texts, describing the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents).	delineates and evaluates the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents).	delineates and evaluates the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., <i>The Federalist</i> , presidential addresses).	explicates and evaluates the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., <i>The Federalist</i> , presidential addresses); extrapolates and evaluates the effects of these decisions on public life.
Detailed	11.RI.9	describes the themes, purposes, and rhetorical features of seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address).	performs a basic analysis of the themes, purposes, and rhetorical features in seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address).	analyzes seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address) for their themes, purposes, and rhetorical features.	refers to specific textual evidence in an analysis of seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address), evaluating the implications of their themes, purposes, and rhetorical features.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Writing</b>			
Detailed	11.W.1	writes arguments to support claims in an analysis of substantive topics or texts, using reasoning and evidence.  a. introduces claim(s), states the significance of the claim(s), and establishes relationships among some claim(s), reasons, and evidence.  b. develops claim(s), supplying evidence in a manner that anticipates the audience's concerns.  c. uses words, phrases, and clauses to link sections of the text and clarify the relationships between claim(s) and reasons, and between reasons and evidence.	writes arguments to support claims in an analysis of substantive topics or texts, using reasoning and relevant evidence.  a. introduces claim(s), states the significance of the claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an organization that establishes relationships among claim(s), counterclaims, reasons, and evidence.  b. develops claim(s) and counterclaims, supplying evidence for each while pointing out the strengths of both in a manner that anticipates the audience's concerns.  c. uses words, phrases, and clauses to link sections of the text and clarify the relationships between claim(s)	writes arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.  a. introduces precise claim(s), establishes the significance of the claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.  b. develops claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.  c. uses words, phrases, and clauses	writes highly effective arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.  a. introduces strong and precise claim(s), establishes the significance of the claim(s), distinguishes the claim(s) from alternate or opposing claims, and creates an effective organization that establishes strong, clear relationships among claim(s), counterclaims, reasons, and evidence.  b. develops strong claim(s) and counterclaims fairly, supplying thorough evidence for each while establishing the strengths and limitations of both in a manner that effectively anticipates the audience's knowledge level and concerns.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<p>d. attempts a formal style and objective tone while demonstrating awareness of the norms and conventions of standard English.</p> <p>e. provides a concluding statement or section.</p>	<p>and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes a formal style and objective tone while demonstrating awareness of the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides a concluding statement or section that supports the argument presented.</p>	<p>to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides a concluding statement or section that follows from and supports the argument presented.</p>	<p>c. uses precise words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. establishes and maintains a rhetorically appropriate formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>e. provides an effective concluding statement or section that follows from and supports the argument presented.</p> <p>f. evaluates and reflects on the writing and how well it addresses the purpose, audience, and task.</p>

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.W.2	<p>writes informative/explanatory texts to examine and convey ideas, concepts, and information through the selection, organization, and analysis of content.</p> <p>a. states a topic; organizes ideas, concepts, and information to make connections and distinctions.</p> <p>b. develops the topic by selecting relevant facts, extended definitions, concrete details, quotations, or other information and examples.</p> <p>c. uses appropriate transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>d. uses topic-appropriate language, vocabulary, and techniques such as metaphor, simile, and analogy to describe the topic.</p>	<p>writes informative/explanatory texts to examine and convey ideas, concepts, and information accurately through the effective selection, organization, and analysis of content.</p> <p>a. introduces a topic; organizes ideas, concepts, and information to make connections and distinctions; includes formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia in an attempt to aid comprehension.</p> <p>b. develops the topic by selecting significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience.</p> <p>c. uses appropriate transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> <p>d. uses topic-appropriate language, domain-specific vocabulary, and</p>	<p>writes informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p> <p>a. introduces a topic; organizes complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; includes formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to aiding comprehension.</p> <p>b. develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>c. uses appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p>	<p>writes highly effective informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p> <p>a. clearly introduces a topic; strategically organizes complex ideas, concepts, and information to make important connections and distinctions; includes important formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to aiding comprehension.</p> <p>b. develops the topic strategically by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate and relevant to the audience's knowledge of the topic.</p> <p>c. consistently and effectively uses appropriate and varied transitions to link the major sections of the text, creates cohesion, and clarifies the relationships among complex ideas</p>

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<p>e. attempts a formal style and objective tone while demonstrating awareness of the norms and conventions of standard English.</p> <p>f. provides a concluding statement or section.</p>	<p>techniques such as metaphor, simile, and analogy to manage the complexity of the topic.</p> <p>e. establishes a formal style and objective tone while demonstrating awareness of the norms and conventions of the discipline in which he or she is writing.</p> <p>f. provides a concluding statement or section that supports the information or explanation presented.</p>	<p>d. uses precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.</p> <p>e. establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>f. provides a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>	<p>and concepts.</p> <p>d. effectively uses precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic and achieve a desired rhetorical effect.</p> <p>e. establishes and maintains a rhetorically effective formal style and objective tone while attending to the norms and conventions of the discipline in which he or she is writing.</p> <p>f. provides an effective concluding statement or section that articulates the significance of the topic, and follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p>

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.W.4-6	produces writing in which the development, organization, and style are appropriate to the task and purpose. Strengthens writing as needed by revising and editing. Uses technology to produce and update writing products.	produces coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. Strengthens writing as needed by planning, revising, and editing. Uses technology, including the Internet, to produce, publish, and update writing products in response to ongoing feedback, including new arguments or information.	produces clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. Develops and strengthens writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Uses technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	produces clear and coherent writing in which the development, organization, and style are highly effective for the task, purpose, and audience. Develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Uses technology, including the Internet, to produce, publish, and effectively update individual or shared writing products in response to ongoing feedback, including new arguments or information.
Detailed	11.W.7	conducts short research projects to answer a given simple question or solve a given simple problem; uses discrete information from sources on the subject, demonstrating a developing understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a simple question (including a self-generated question) or solve a simple problem; narrows or broadens the inquiry when appropriate; synthesizes sources on the subject, demonstrating an understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrows or broadens the inquiry when appropriate; synthesizes multiple sources on the subject, demonstrating understanding of the subject under investigation.	conducts short as well as more sustained research projects to answer a complex question (including a self-generated question) or solve a complex problem; narrows, broadens, or reformulates the inquiry when appropriate; synthesizes multiple high quality sources on the subject, demonstrating complete understanding of the subject under investigation.



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.W.8	gathers information from multiple print and digital sources; assesses the strengths of each source in terms of the task, purpose, and audience; integrates information into the text, avoiding plagiarism and following a standard format for citation.	gathers relevant information from multiple print and digital sources, using searches effectively; assesses the strengths and limitations of each source in terms of the task, purpose, and audience; integrates information into the text to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	gathers relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assesses the strengths and limitations of each source in terms of the task, purpose, and audience; integrates information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	gathers highly relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assesses the strengths and limitations of each source in terms of the task, purpose, and audience; seamlessly integrates information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and adhering to a standard format for citation.

## Grade 11

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Listening</b>					
Detailed	11.SL.2	uses multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems.	uses multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.	integrates multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.	effectively integrates multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
Detailed	11.SL.3	describes a speaker's point of view, reasoning, and use of evidence and rhetoric.	describes a speaker's point of view, reasoning, and use of evidence and rhetoric, including the stance, premises, links among ideas, word choice, points of emphasis, and tone used.	evaluates a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.	evaluates and critiques a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing and analyzing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.
<b>Language</b>					
Detailed	11.L.1	attempts to meet the conventions of standard grade level English grammar and usage when writing or speaking: (a) demonstrates the understanding that usage is a matter of convention; (b) clarifies issues of usage, consulting references (e.g., Merriam-Webster's <i>Dictionary of English Usage</i> , Garner's <i>Modern American Usage</i> ) as needed.	demonstrates awareness of the conventions of standard grade level English grammar and usage when writing or speaking: (a) demonstrates the understanding that usage is a matter of convention, can change over time, and is sometimes contested; (b) resolves issues of complex or contested usage, consulting references (e.g., Merriam-Webster's <i>Dictionary of English Usage</i> , Garner's <i>Modern American Usage</i> ) as needed.	demonstrates command of the conventions of standard grade level English grammar and usage when writing or speaking: (a) applies the understanding that usage is a matter of convention, can change over time, and is sometimes contested; (b) resolves issues of complex or contested usage, consulting references (e.g., Merriam-Webster's <i>Dictionary of English Usage</i> , Garner's <i>Modern American Usage</i> ) as needed.	demonstrates strong command of the conventions of standard grade level English grammar and usage when writing or speaking: (a) applies the understanding that usage is a matter of convention, can change over time, and is sometimes contested; (b) resolves issues of complex or contested usage, consulting references (e.g., Merriam-Webster's <i>Dictionary of English Usage</i> , Garner's <i>Modern American Usage</i> ) as needed.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.L.2	attempts to meet the conventions of standard English capitalization, punctuation, and spelling when writing.	demonstrates awareness of the conventions of standard English capitalization, punctuation, and spelling when writing: (a) attempts to observe hyphenation conventions; (b) spells correctly.	demonstrates command of the conventions of standard English capitalization, punctuation, and spelling when writing: (a) observes hyphenation conventions; (b) spells correctly.	demonstrates strong command of the conventions of standard English capitalization, punctuation, and spelling when writing: (a) observes hyphenation conventions; (b) spells correctly.
Detailed	11.L.3	uses knowledge of language for comprehension when reading or listening.	uses knowledge of language to make effective choices for meaning or style, and to comprehend more fully when reading or listening. Varies syntax for effect, consulting references (e.g., Tufte's <i>Artful Sentences</i> ) for guidance as needed.	applies knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. Varies syntax for effect, consulting references (e.g., Tufte's <i>Artful Sentences</i> ) for guidance as needed; applies an understanding of syntax to the study of complex texts when reading.	applies deep knowledge of language to understand how language functions in different contexts, to make highly effective choices for meaning or style, and to aid deep comprehension when reading or listening. Varies syntax for effect, consulting references (e.g., Tufte's <i>Artful Sentences</i> ) for guidance as needed; applies a thorough understanding of syntax to the study of complex texts when reading.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	11.L.4	determines the meaning of unknown and multiple-meaning words and phrases by using immediate context clues and consulting general reference materials, both print and digital, to find the pronunciation of a word or determine its meaning or its standard usage; and verifying the preliminary determination of the meaning of a word or phrase.	determines the meaning of unknown and multiple-meaning words and phrases by using context clues within the same sentence; identifying patterns of word changes that indicate different meanings or parts of speech; consulting general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage; and verifying the preliminary determination of the meaning of a word or phrase.	determines or clarifies the meaning of unknown and multiple-meaning grade-level words and phrases by using context clues as a clue to the meaning of a word or phrase; identifying and correctly using patterns of word changes that indicate different meanings or parts of speech; consulting general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage; and verifying the preliminary determination of the meaning of a word or phrase.	determines or clarifies the meaning of unknown and multiple-meaning words and phrases, including above-grade-level content, by using context clues as a clue to the meaning of a word or phrase; identifying and correctly using patterns of word changes that indicate different meanings or parts of speech; consulting general and specialized reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage; and verifying the preliminary determination of the meaning of a word or phrase.
Detailed	11.L.5	recognizes figurative language and word relationships. Recognizes figures of speech in context. Recognizes nuances in the meaning of words with similar denotations.	demonstrates understanding of straightforward figurative language, clear word relationships, and nuances in word meanings. Interprets figures of speech in context. Recognizes nuances in the meaning of words with similar denotations.	demonstrates understanding of figurative language, word relationships, and nuances in word meanings. Interprets figures of speech in context and analyzes their role in the text. Analyzes nuances in the meaning of words with similar denotations.	demonstrates a deep understanding of figurative language, complex word relationships, and complex nuances in word meanings. Interprets complex figures of speech in context and analyzes their role in the text. Analyzes nuances in the meaning of words with similar denotations.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Operations and Algebraic Thinking</b>					
Detailed	3.OA.A [1 to 4]	Interprets whole number products and quotients with visual support. Multiplies and divides within 100 to solve word problems involving equal groups and arrays when a visual model is given. Determines the unknown whole number in a multiplication or division equation, when the unknown number is the product or quotient. Factors and divisors are less than or equal to 5 for all problems.	Interprets whole number products and quotients with visual support. Multiplies and divides within 100 to solve word problems involving equal groups and arrays when a visual model is given. Determines the unknown whole number in a multiplication or division equation, when the unknown number is the product or quotient. Factors and divisors are less than or equal to 9 for all problems.	Interprets products and quotients of single-digit whole numbers using equal groups of objects, arrays of objects and comparison. Multiplies and divides within 100 to solve single-step word problems involving equal groups, arrays, and measurement quantities. Determines an unknown whole number, in any position, in a multiplication and division equation.	Interprets products and quotients of whole numbers within 100, representing context using pictures, numbers, and words. Multiplies and divides within 100 to solve multi-step word problems involving equal groups, arrays, and measurement quantities. Determines an unknown whole number in a multiplication and division equation. Students will use the given context to generate an equation or create a word problem.
Detailed	3.OA.B [5 to 6]	Applies the properties of operations to multiply and divide. Solves division as unknown factor problems by finding missing number in the second factor position with visual support. Factors and divisors are less than or equal to 5 for all problems.	Applies the properties of operations to multiply and divide. Solves division as unknown factor problems by finding missing number in any position with visual support. Factors and divisors are less than or equal to 9 for all problems.	Applies the properties of operations as strategies to multiply and divide. Determines an appropriate strategy for a given situation. Understands that division can be expressed as an unknown factor problem by using the relationship between multiplication and division.	Applies multiple strategies of operations within a word problem. Solves division as unknown factor problems by using the relationship between multiplication and division, models multiplication and division in a variety of ways.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	3.OA.C [7]	Multiplies and divides single-digit numbers using a variety of strategies and supports.	Fluently multiplies and divides all single-digit numbers using variety strategies.	Knows from memory all products of two single-digit numbers, fluently multiplies products within 100, fluently divides dividends that are less than 100.	Fluently multiplies and divides within 100 using a wide range of contexts.
Detailed	3.OA.D [8 to 9]	Solve two-step word problems using addition and subtraction with simple context and concrete objects or visual representations. Identifies additive arithmetic patterns using visual supports, such as an addition table.	Solve two-step word problems using the four operations with simple context and visual representations (with the unknown in a variety of positions). Identifies multiplicative and subtractive arithmetic patterns using visual supports.	Solve two-step word problems using equations in the four operations (using a letter standing for the unknown quantity). Recognizes the reasonableness of answers using mental computation and estimation strategies. Identifies arithmetic patterns and explains them using properties of operations.	Creates two-step word problems using multiple operations. Creates and extends arithmetic patterns, explains patterns using properties of operations.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Number and Operations in Base Ten</b>					
Detailed	3.NBT.A [1 to 3]	Uses place value understanding to round a two-digit number to the nearest 10. Adds and subtracts two digit numbers using visual models or support. Skip counts by 10, 20 or 50 to multiply single-digit whole numbers by multiples of 10 in the range 10-90.	Uses place value understanding to round a three-digit number to the nearest 100. Adds and subtracts numbers within 1,000 using visual models or support. Uses grouping strategies (associative property) to multiply single-digit whole numbers by multiples of 10 in the range 10-90.	Uses place value understanding to round whole numbers (up to 1,000) to the nearest 10 or 100. Fluently adds and subtracts within 1,000 using any strategy. Multiplies single-digit whole numbers by multiples of 10 in the range 10-90 using any of a variety of strategies.	Uses rounding strategies in real-world situations. Explains the method used in finding the sum or difference; recognizes and identifies an error and shows the correct answer. Shows product of single-digit whole numbers by multiples of 10 using multiple strategies.
<b>Number and Operations - Fractions</b>					
Detailed	3.NF.A [1 to 2b]	Identifies the numerator and denominator of a fraction or a fraction on a number line where the increments are equal to the denominator.	Identifies the meaning of the numerator and denominator of a fraction. Represents a fraction on a partitioned number line.	Understands $1/b$ is equal to one part when the whole is partitioned into $b$ equal parts (where the denominators are 2, 3, 4, 6 or 8). Represents a fraction on a number line by partitioning into equal parts.	Applies understanding of unit fractions to real world situations and problems. Represents a set of fractions with unlike denominators on a number line by partitioning into equal parts.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	3.NF.A [3a to 3d]	Understands, recognizes, and generates equivalent fractions using denominators of 2, 4 and 8 given visual models. Expresses and recognizes fractions that are equivalent to 1. Compares two fractions with the same denominator and records results using symbols.	Understands, recognizes, and generates equivalent fractions using denominators of 2, 4 and 8. Expresses and recognizes fractions that are equivalent to whole numbers. Compares two fractions with the same numerator and records results using symbols.	Understand, recognizes, and generates equivalent fractions using denominators of 2, 3, 4, 6, and 8; explains why the fractions are equivalent using a visual model. Expresses whole numbers as fractions. Compares two fractions that have the same numerator or same denominator using symbols and visual fraction models.	Explains why two fractions are equivalent. Identifies equivalent fractions by creating fraction models to compare fractions with different denominators that pertain to the same whole. Compares two fractions that have the same numerator or same denominator using symbols.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Measurement and Data	Proficient	Highly Proficient
Detailed	3.MD.A [1 to 2]	Tells, writes, and measures time to the nearest minute. Using grams, kilograms or liters, measures and estimates liquid volumes and masses of objects using models.	Solves one-step word problems involving addition or subtraction of time intervals in minutes with scaffolding. Using grams, kilograms or liters, solves simple one-step measurement word problems using either addition or subtraction.	Solves one-step word problems involving addition and subtraction of time intervals in minutes. Using grams, kilograms or liters, estimates and solves one-step measurement word problems involving any of the four operations.	Solves two-step real world problems involving addition and subtraction of time intervals in minutes. Using grams, kilograms or liters, estimates and solves two-step measurement word problems involving any of the four operations.
Detailed	3.MD.B [3 to 4]	Completes a scaled picture graph or bar graph (with a scale factor of 1 or 5) to represent data set with support. Generates measurement data by measuring lengths to the nearest half-inch. Shows the data by making a line plot, where the horizontal scale is marked by whole numbers or halves with supports.	Completes a scaled picture graph or bar graph to represent a data set with support. Solves one-step "how many more" and "how many less" problems using information presented in scaled bar graphs. Generates measurement data by measuring lengths to the nearest quarter-inch. Shows the data by making a line plot, where the horizontal scale is marked by whole numbers, halves, or quarters with supports.	Creates a scaled picture graph or bar graph to represent a data set. Solves two-step "how many more" and how many less" problems using information presented in scaled bar graphs. Shows the data by making a line plot, where the horizontal scale is marked by whole numbers, halves or quarters.	Solves multi-step "how many more" and how many less" problems using information presented in scaled bar graphs. Uses a line plot to answer questions or solve problems.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	3.MD.C [5a to 7d ]	Understands what a square unit is and that a plane figure can be covered without gaps or overlaps to find an area. Finds the area of one or two rectangles by tiling.	Understands area is measured using square units, finds area of a rectangle by counting the square units. Shows that the area of a rectangle find by tiling is the same as would be found by multiplying the side lengths. Finds the area of two rectangles by tiling and adds the areas of the rectangles.	Understands area is measured using square units, finds area of a plane figure by counting the square units or multiplying the side lengths, in the context of solving real-world and mathematical problems. Represents whole number products as rectangular areas.	Finds the area of 2 plane figures by counting the square units or multiplying their side lengths and compares their sizes. Creates a word problem using the distributive property to find the area of rectangles.
Detailed	3.MD.D [8]	Finds the perimeter and area of polygons (given the side lengths).	Solves mathematical problems involving perimeters of polygons, including finding the perimeter and area (given the side lengths); compares and contrasts area and perimeter.	Solves real-word and mathematical problems involving perimeters of polygons, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	Constructs rectangles that have the same perimeter but different areas and the reverse.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Geometry	Proficient	Highly Proficient
Detailed	3.G.A [1 to 2]	Identifies examples of quadrilaterals; recognizes that examples of quadrilaterals have shared attributes, and that the shared attributes can define a larger category. Partitions shapes into parts with equal areas and expresses the area as a unit fraction of the whole (limited to halves and quarters).	Understands the properties of quadrilaterals and the subcategories of quadrilaterals. Partitions shapes into parts with equal areas and expresses the area as a unit fraction of the whole (limited to halves, quarters, and eighths).	Recognizes and sorts examples of quadrilaterals that have shared attributes and that the shared attributes can define a larger category; draws examples of quadrilaterals that don't belong to the categories of rhombuses, rectangles, and squares. Partitions shapes into parts with equal areas and expresses the area as a unit fraction (with denominator of 2, 3, 4, 6, or 8) of the whole.	Recognizes and sorts examples of quadrilaterals that have shared attributes and that the shared attributes can define a larger category; draws examples and non-examples of quadrilaterals that are not rhombuses, rectangles, or squares. Partitions shapes in multiple ways into parts with equal areas and expresses the area as a unit fraction of the whole.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Operations and Algebraic Thinking</b>					
Detailed	4.OA.A [1 to 3.1]	Recognizes that any two factors and their product can be read as a comparison. Solves word problems involving multiplicative comparison (where the unknown is the product or quotient), given visual representations. Solves multi-step word problems using the four operations with simple context and scaffolding, where the final answer is the unknown. Solves a counting problem with two attributes using a visual representation.	Represents comparisons of two factors and their product as equations using supports. Solve word problems involving multiplicative comparison (where the unknown is in a variety of positions), given visual representations. Solves multi-step word problems (which may include interpreting remainders) using the four operations with simple context and scaffolding, where the final answer is the unknown. Creates and uses any visual representation of a counting problem with two attributes.	Represents comparisons of two factors and their product as equations without support. Solves word problems involving multiplicative comparison, where the unknown is in a variety of positions. Solves multi-step word problems (including interpreting remainders) using the four operations. The unknown is in a variety of positions and can be represented by a symbol or letter. Recognizes the reasonableness of answers using mental computation and estimation strategies. Creates and uses any representation of counting problems; analyzes simple relationships between counting problem representations.	Recognizes that any two factors and their product can be read as a comparison; uses multiple strategies and creates his or her own to represent and describe those comparisons. Creates own context for multiplicative comparison. Solves complex multi-step word problems with multiple possible solutions and determines which would be the most reasonable based upon given criteria. Analyzes relationships between any two representations of a counting problem and makes connections to the multiplication principle.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.OA.B [4]	Finds factor pairs for a multiple of 10. Determines whether a whole number in the range of 1 to 25 is prime or composite, given visual representations.	Finds factor pairs for any whole number. Determines whether a whole number in the range of 1 to 50 is prime or composite, given visual representations.	Recognizes that a whole number is a multiple of each of its factors and determines a given whole number in the range of 1 to 100 is a multiple of a given single-digit number. Determines whether a whole number in the range of 1 to 100 is prime or composite.	Applies the concepts of both factors and prime and composite numbers in problem-solving contexts.
Detailed	4.OA.C [5]	Generates a number or shape pattern that follows a given rule, using visual models.	Generates a number or shape pattern that follows a given rule.	Generates a number or shape pattern that follows a given rule; identifies apparent features that are not explicit in the rule.	Generates a number or shape pattern that combines two operations for a given rule.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Number and Operations in Base Ten	Proficient	Highly Proficient
Detailed	4.NBT.A [1 to 3]	With numbers within 10,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	With numbers within 100,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	With numbers within 1,000,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	Uses place value strategies, comparisons of two numbers, and rounding in a real-world context.
Detailed	4.NBT.B [4 to 6]	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm without regrouping. Finds products of a whole number (of up to three digits) by a single-digit whole number and whole number quotients and remainders (with up to double-digit dividends and single-digit divisors).	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm with supports. Finds products of a whole number (of up to four digits) by a single-digit whole number and whole number quotients and remainders (with up to three-digit dividends and single-digit divisors).	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm. Finds products of a whole number (of up to four digits) by a single-digit whole number or two double-digit numbers and whole number quotients and remainders (with up to four-digit dividends and single-digit divisors) in context. Illustrates and explains calculations by using equations, rectangular arrays, and/or area models.	Recognizes and identifies an error in an addition or subtraction and shows the correct answer. Interprets a multiplication or division context and explains strategies used to solve. Fluently adds and subtracts multidigit whole numbers using the standard algorithm.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		<b>Number and Operations - Fractions</b>			
Detailed	4.NF.A [1 to 2]	Uses area fraction models to represent equivalent fractions by partitioning unit fraction pieces into smaller equal pieces. Uses a visual fraction model to compare two fractions with different numerators and different denominators.	Uses area fraction models to represent equivalent fractions by partitioning unit fraction pieces into smaller pieces (and understands that this is the same), and multiplies by 1 represented as a fraction.	Uses area fraction models and double number lines to generate and explain why fraction $a/b$ is equivalent to a fraction $(n \times a)/(n \times b)$ , where $n$ is a non-negative whole number. Compares two fractions with different numerators and different denominators and justifies answers using visual fraction models.	Uses a variety of strategies to generate and explain why fraction $a/b$ is equivalent to a fraction $(n \times a)/(n \times b)$ , where $n$ is a non-negative whole number. Extends understanding to compare and order fractions with different numerators and different denominators.
Detailed	4.NF.B [3]	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole with or without context using visual or manipulative models, with no or a simple context. Converts mixed numbers to equivalent fractions.	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole using visual or manipulative models, with no or a simple context. Decomposes a fraction into a sum of fractions with the same denominator and records the decomposition using an equation. Converts mixed numbers into equivalent fractions and adds and subtracts them.	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole, with or without context. Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.	Adds and subtracts more than 2 fractions with like denominators by joining and separating parts referring to the same whole, with or without context. Decomposes a fraction into a sum of fractions with the same denominator in multiple ways and records the decomposition using an equation.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.NF.B [4]	Understands a fraction $a/b$ as a multiple of $1/b$ by using visual fraction models.	Understands a fraction $a/b$ as a multiple of $1/b$ , and uses this understanding to multiply a fraction by a whole number, using visual fraction model.	Understands and solves simple word problems by recognizing that fraction $a/b$ is a multiple of $1/b$ , and uses that construct to multiply a fraction by a whole number (in general, $n \times a/b$ is $(n \times a)/b$ ).	Understands and solves more complex word problems by recognizing that fraction $a/b$ is a multiple of $1/b$ , and uses that construct to multiply a fraction by a whole number (in general, $n \times a/b$ is $(n \times a)/b$ ).
Detailed	4.NF.C [5 to 7]	Expresses a fraction with denominator 10 as an equivalent fraction with denominator 100 by using a model. Uses decimal notation for fractions with a denominator of 10, with supports. Compares two decimals with the same number of places (tenths or hundredths) using supports.	Adds two fractions with respective denominators 10 and 100 by first finding equivalent fractions with like denominators by using a model. Uses decimal notation for fractions with denominators of 10 or 100, with supports. Compares two decimals to the hundredth by reasoning about their size using models.	Adds two fractions with respective denominators 10 and 100 by first finding equivalent fractions with like denominators. Uses decimal notation for fractions with denominators of 10 or 100. Compares two decimals in the tenths and the hundredths (using $<$ , $>$ , and $=$ ) by reasoning about their size and records the result of the comparison using the correct symbols.	Solves missing addend problems with respective denominators 10 and 100 by first finding equivalent fractions with like denominators. Demonstrates knowledge of decimal notation for fractions with denominators of 10 or 100 by converting a number with decimal notation to a decimal fraction. Orders decimal set composed of tenths and hundredths by reasoning about their size. Recognizes that the decimals must refer to the same whole.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Measurement and Data	Proficient	Highly Proficient
Detailed	4.MD.A [1 to 3]	Knows relative size of measurement units, within one system of units. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time and money), including problems involving whole numbers, using supports. Applies the area and perimeter formulas when given all side measurements, using supports.	Expresses measurements in a larger unit in terms of a smaller unit, within a single system, using supports and adjacent units. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time and money, area, and perimeter), including problems involving simple fractions or decimals, using supports.	Expresses measurements in a larger unit in terms of a variety of smaller units, within a single system, and records that data in a two-column table. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time 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. Represents measurement quantities using diagrams. Applies the area and perimeter formulas for rectangles in real-world and mathematical problems, including those where the area/perimeter and one factor (length or width) are known.	Given a context, determines the appropriate unit needed and expresses the measurement to the level of accuracy needed. Uses the four operations to solve multi-step word problems (involving distance, liquid volumes, masses of objects, intervals of time and money), including problems involving fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represents measurement quantities using diagrams. Applies the area and perimeter formulas for rectilinear shapes in real-world and mathematical problems.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	4.MD.B [4]	Makes a line plot to display a data set of measurements in fractions of a unit (with like denominators of 2 or 4).	Makes a line plot to display a data set of measurements in fractions of a unit (with like denominators of 2 or 4), and uses addition and subtraction of fractions to solve problems involving information in the line plot.	Makes a line plot to display a data set of measurements in fractions of a unit (with like denominators limited to 2, 4 and 8), and uses addition and subtraction of fractions to solve problems involving information in the line plot.	Uses data in a line plot to solve a multi-step word problem.
Detailed	4.MD.C [5 to 7]	Measures benchmark angles. Recognizes that angle measure is additive. Solves addition real-world mathematical problems to find unknown angles on a diagram with no more than two angles, within a 90-degree angle.	Understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Solves addition and subtraction real-world mathematical problems to find unknown angles on a diagram with no more than two angles, within a 180-degree angle.	Understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Sketches angles of specific measure. Solves addition and subtraction real-world mathematical problems to find unknown angles on a diagram.	Recognizes how angles are formed, understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Sketches angles of specific measure. Given angle parameters, decomposes into multiple angles and gives the measure of each angle in relationship to the whole.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Geometry	Proficient	Highly Proficient
Detailed	4.G.A [1 to 3]	Identifies points, lines, line segments, rays, perpendicular and parallel lines, two-dimensional figures, including right triangles, and line-symmetric regular figures; classifies angles (right, acute, obtuse).	Identifies and draws points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Classifies two-dimensional figures based on the presence or absence of parallel or perpendicular lines; identifies triangles. Draws lines of symmetry for regular two-dimensional figures.	Draws points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines; identifies these in two-dimensional figures. Classifies two-dimensional figures based on the presence or absence of angles of specified size. Draws lines of symmetry for any two-dimensional figure.	Creates a two-dimensional shape when given specific attributes, including the presence or absence of parallel or perpendicular lines, the presence or absence of angles of specified size, and particular lines of symmetry.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Operations and Algebraic Thinking</b>					
Detailed	5.OA.A [1 to 2]	Evaluates a simple numerical expression using parentheses, brackets, or braces (without nesting). Writes a numerical expression, using one operation, from a written statement.	Evaluates a numerical expression using parentheses, brackets, or braces (without nesting). Writes simple numerical expressions and interprets numerical expressions, without evaluating them.	Uses parentheses, brackets, or braces in numerical expressions (without nesting), and evaluates expressions with these symbols. Writes numerical expressions and interprets numerical expressions, without evaluating them.	Inserts parentheses, brackets, or braces (without nesting), in numerical expressions to make a statement true. Writes numerical expressions using multiple operations, involving real-world and mathematical contexts.
Detailed	5.OA.B [3]	Continues two numerical patterns (when given a table), using two given rules.	Continues two numerical patterns using two given rules.	Generates two numerical patterns using two given rules. Identifies apparent relationships between corresponding terms.	Generates two numerical patterns using two multi-step given rules, in mathematical contexts. Explains the relationship between corresponding terms.
<b>Number and Operations in Base Ten</b>					

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	5.NBT.A [1 to 2]	Uses visual models or calculation to demonstrate a digit in one place of a whole number represents 10 times as much as it represents in the place to its right, <b>or</b> 1/10 of what it represents in the place to its left. Continues a given pattern that shows the number of zeroes of the product when multiplying a number by powers of 10.	Uses visual models or calculation to recognize that a digit in one place in a whole number represents 10 times as much as it represents in the place to its right <b>and</b> 1/10 of what it represents in the place to its left. Recognizes patterns in the number of zeroes of products when multiplying a number by powers of 10. Uses whole number exponents greater than zero to denote powers of 10.	Recognizes (in any multi-digit number, including decimals to thousandths) that a digit in one place represents 10 times as much as it represents in the place to its right <b>and</b> 1/10 of what it represents in the place to its left. Explains patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explains patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Uses whole number exponents to denote powers of 10, including 10 to the power of zero.	Recognizes (in any multi-digit number, including decimals to thousandths) that 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, in real-world or mathematical context problems. Interprets a multiplication problem to identify the factor of 10 by which one number is greater or lesser than another.
Detailed	5.NBT.A [3 to 4]	Reads decimals to the thousandths place. Compares two decimals to the tenths place, using >, =, and < symbols to record the results of comparisons. Uses place value understanding to round multi-digit numbers to the tenths place.	Reads and writes decimals to the thousandths place, using base-ten numerals and number names. Compares two decimals to the hundredths place, using >, =, and < symbols to record the results of comparisons. Uses place value understanding to round multi-digit whole numbers to the hundredths place.	Reads and writes decimals to the thousandths place, using base-ten numerals, number names, and expanded form (e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ ). Compares two decimals to the thousandths place (with varying place values), using >, =, and < symbols to record the results of comparisons. Uses place value understanding to round multi-digit numbers up to any place (within content limits).	Writes numbers in expanded form in a variety of formats (e.g., $347.392 = 7 \times 1 + 3.4 \times 100 + 3 \times (1/10) + 2 \times (1/1000) + (1/100) \times 9$ ). Compares and orders decimals to the thousandths place (with varying place values), from least to greatest or vice-versa. Uses rounding strategies in real-world situations.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	5.NBT.B [5 to 6]	Multiplies two two-digit numbers using a standard algorithm. Finds whole-number quotients of whole numbers (with up to two digit dividends and two-digit divisors), using rectangular arrays or area models.	Multiplies three-digit by two-digit whole numbers, using a standard algorithm. Finds whole-number quotients of whole numbers (with up to three digit dividends and two-digit divisors), using strategies based on place value and the properties of operations.	Fluently multiplies multi-digit whole numbers using a standard algorithm. Finds 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. Illustrates and explains the calculation by using equations, rectangular arrays, and/or area models.	Fluently multiplies multi-digit whole numbers, in real-world and mathematical contexts, using a standard algorithm. Finds whole-number quotients of whole numbers (with up to four digit dividends and two-digit divisors) in context.
Detailed	5.NBT.B [7]	Adds, subtracts, multiplies, and divides decimals to the tenths place, using concrete models, drawings, <b>or</b> strategies based on place value.	Adds, subtracts, multiplies, and divides decimals to the hundredths place, using concrete models or drawings, strategies based on place value, and/or the relationship between addition and subtraction; relates the strategy to a written method.	Adds, subtracts, multiplies, and divides decimals to the hundredths place, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relates the strategy to a written method and explains the reasoning used.	Adds, subtracts, multiplies, and divides decimals to the hundredths place, using multiple strategies, in a real-world or mathematical context; relates the strategy to a written method and explains the reasoning used.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Number and Operations - Fractions</b>					
Detailed	5.NF.A [1 to 2]	Adds/subtracts fractions with unlike denominators, where one denominator is a multiple of the other denominator, with the use of a visual model. Solves word problems involving addition and subtraction of fractions with unlike denominators, where one denominator is a multiple of the other denominator, using visual representations. Determines a common denominator, with use of a visual model.	Adds/subtracts fractions with unlike denominators, where one denominator is a multiple of the other denominator. Solves word problems involving addition and subtraction of fractions with unlike denominators, where one denominator is a multiple of the other denominator.	Adds and subtracts fractions with unlike denominators (including mixed numbers). Solves word problems involving addition and subtraction of fractions with unlike denominators (including mixed numbers). Assesses and justifies reasonableness of the answer by using benchmark fractions, visual models, or equations.	Adds or subtracts at least 3 or more fractions with unlike denominators (including mixed numbers). Solves word problems involving addition or subtraction with at least 3 or more fractions with unlike denominators (including mixed numbers).
Detailed	5.NF.B [3]	Rewrites a fraction as a division problem; uses manipulatives or visual models to solve problems involving division of whole numbers, leading to answers in the form of fractions or mixed numbers.	Solves word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.	Interprets a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ); solves word problems involving division of whole numbers, leading to answers in the form of fractions or mixed numbers.	Creates his or her own model to demonstrate division of fractions.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	5.NF.B [4 to 5]	Shows the product of a fraction by a whole number by repeated addition, using visual fraction models. Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor, without performing the indicated multiplication (where both factors are whole numbers).	Shows the product of two fractions by using an area model. Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor, without performing the indicated multiplication (where one factor is a fraction less than one).	Shows the product of two fractions using an area model and creates a story context for the product. Finds the area of a rectangle with fractional side lengths by tiling it with squares with unit fraction side lengths, and shows that the area is the same as would be found by multiplying the side lengths. Multiplies fractional side lengths to find areas of rectangles, and represents fraction products as rectangular areas. Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor, without performing the indicated multiplication.	Creates a real-world context and models representing multiplication of fractions. Demonstrates reasoning about fractions in both an additive and multiplicative sense with different wholes, and displays the quantities with visual models. Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor by performing the indicated multiplication with 2 fractions.
Detailed	5.NF.B [6 to 7]	Solves real-world problems involving multiplication of fractions (limited to fractions with single-digit numerators or denominators) or division of whole numbers by unit fractions by using visual fraction models or equations to represent the problem.	Solves real-world problems involving multiplication of fractions or division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions (limited to single digit whole numbers and denominators) by using visual fraction models or equations to represent the problem.	Solves real-world problems involving multiplication of fractions and mixed numbers or division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, using visual fraction models and equations to represent the problem.	Uses several mixed numbers, often with multi-digit numerators or denominators, to solve real-world problems involving multiplication of fraction or mixed numbers. Creates real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, using visual fraction models and equations to represent the problem.



## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Measurement and Data</b>					
Detailed	5.MD.A [1]	Converts among different-sized standard measurement units within a given measurement system.	Converts among different-sized standard measurement units within a given measurement system; uses these conversions to solve single-step problems, using manipulatives or visual models.	Converts among different-sized standard measurement units within a given measurement system; uses these conversions in solving multi-step, real-world problems.	Creates real-world multi-step problems. Chooses the appropriate measurement unit based on the given context.
Detailed	5.MD.B [2]	Plots data on a given line plot with a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ), where the given data set is limited to a common denominator. Solves addition and subtraction comparison problems using the data.	Makes a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , or $\frac{1}{8}$ ), where the given data set is limited to a common denominator. Solves problems using all four operations.	Makes a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Uses operations on fractions to solve problems involving information presented in line plots (division is limited to a whole number divided by a fraction or a fraction divided by a whole number).	Makes a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solves multi-step word problems using the four operations and interprets the solution to the data.
Detailed	5.MD.C [3 to 5]	Uses unit cubes to find the volume of rectangular prisms with whole number edges (limited to single digit dimensions). Solves volume problems of a right rectangular prism by using unit cubes.	Uses unit cubes (number of unit cubes, edge length, height) to find the volume of rectangular prisms. Uses the information that the number of unit cubes is related to the edge length; uses visual models. Solves volume problems by relating the number of unit cubes in a prism to the multiplication of the edge lengths.	Uses unit cubes (number of unit cubes, edge length, height) to find the volume of rectangular prisms. Represents the volume of a solid figure as $n$ cubic units. Solves real-world and mathematical problems by applying the formulas for volume. Finds the volume of two non-overlapping right rectangular prisms by adding the volumes of the two non-overlapping parts.	Compares the volumes of different prisms by using unit cubes. Creates real-world mathematical problems that would be solved by finding volume.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Geometry	Proficient	Highly Proficient
Detailed	5.G.A [1 to 2]	Identifies the key components of the coordinate plane ( $x$ -axis, $x$ -coordinate, $y$ -axis, $y$ -coordinate and origin). Locates given points in the first quadrant of the coordinate plane.	Interprets coordinate values of points in the first quadrant (e.g., reading line graphs), in context.	Represents real-world and mathematical problems by locating and graphing points in the first quadrant of the coordinate plane.	Using real-world data, creates a representation and draws conclusions based on the data presented.
Detailed	5.G.B [3 to 4]	Identifies two-dimensional figures based on properties limited to sides and angles.	Classifies some two-dimensional figures into categories based on their properties (sides and angles).	Understands that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category and classifies two-dimensional figures in the hierarchy based on these properties.	Draws or constructs specific two-dimensional figures according to the definitions provided, attributes described, or categories given.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Ratios and Proportional Relationships</b>					
Detailed	6.RP.A [1 to 2]	Identifies unit rates and describes them using basic language or notation.	Describes the concept of ratio using a limited variety of representations and determines a unit rate.	Uses the concept of a ratio, ratio language, ratio notation, and unit rate associated with a ratio to precisely describe a ratio relationship between two quantities and within context.	Uses and connects between representation for ratio situations and finds unit rates requiring multiple steps.
Detailed	6.RP.A.3 [a to c]	Identifies proportional relationships presented in graphical, tabular, or verbal formats, knows the meaning of a percent of a quantity as a rate per hundred, and finds missing values in tables and plots values on the coordinate plane using whole numbers.	Uses a limited variety of representations to solve ratio and unit rate problems involving whole numbers and to convert measurement units, finds the percent of a quantity, and manipulates units appropriately when multiplying or dividing quantities.	Uses ratio and rate reasoning to convert measurement units and solve real-world problems, solves unit rate problems including those involving unit pricing and constant speed, determines the percent of a quantity as a rate per 100, and solves problems involving finding the whole given a part and a percent.	Creates and applies ratio reasoning to solve real-world problems including those involving percent or conversion of measurement units.
<b>The Number System</b>					
Detailed	6.NS.A [1]	Solves problems in contexts involving division of whole numbers by unit fractions using visual fraction models and equations.	Solves problems in contexts involving division of fractions by non-zero whole numbers and vice versa using visual fraction models and equations.	Solves problems in contexts involving division of fractions by fractions and interprets the solution in context.	Solves problems in contexts involving multi-step division problems involving mixed numbers and interprets the solution in context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	6.NS.B [2 to 3]	Adds, subtracts, multiplies where decimals are limited to hundredths, and finds whole number quotients and remainders where dividends are up to four digits and divisors are one digit using strategies based on place value, the properties of operations, and the relationship between operations.	Adds, subtracts, multiplies where dividends are limited to whole numbers, and finds whole number quotients and remainders where dividends are up to four digits and divisors are up to two digits using strategies based on place value, the properties of operations, and the relationship between operations.	Fluently adds, subtracts, multiplies and divides multi-digit numbers including multi-digit decimals using the standard algorithm for each operation.	Solves real world problems by adding, subtracting, multiplying and dividing multi-digit numbers including multi-digit decimals using the standard algorithm for each operation and assesses the reasonableness of the result.
Detailed	6.NS.B [4]	Finds common factors of two whole numbers less than or equal to 50 and common multiples of two whole numbers less than or equal to 10 using strategies including a visual model.	For two whole numbers, finds the greatest common factor less than or equal to 50 and the least common multiple less than or equal to 10.	For two whole numbers, finds the greatest common factor less than or equal to 100 and the least common multiple less than or equal to 12 and uses the distributive property to express a sum of two whole numbers from 1 to 100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	Interprets a context to construct an equivalent expression using the greatest common factor, least common multiple, and the distributive property.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	6.NS.C [5 to 9]	Plots integer pairs on a coordinate plane and on a horizontal number line, compares two numbers on a number line, finds the absolute value of a rational number, and determines the distance between two points on the coordinate plane by counting spaces.	Plots rational pairs on a coordinate plane and on a horizontal or vertical number line, determines the meaning of zero in context, compares two numbers including absolute values, and determines the distance between two points with the same first or second coordinate. Converts between expressions for positive rational numbers including fractions and decimals.	Uses positive and negative numbers to represent quantities in real world contexts, recognizes that when two ordered pairs differ only by sign then the locations are related to reflections over one or both axes, and uses absolute value to find the distance between two points with the same first or second coordinate. Converts between expressions for positive rational numbers including fractions, decimals, and percents.	Solves real world problems involving the coordinate plane and absolute values.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Expressions and Equations</b>					
Detailed	6.EE.A [1 to 4]	Recognizes exponential notation as repeated multiplication, identifies an expression matching a written statement where variables represent numbers, evaluates an expression at a specific value for a variable, and identifies when two simple expressions are equivalent.	Evaluates a single term involving whole number exponents, recognizes one or more parts of an expression as a single entity, evaluates an expression at specific values for each variable, and applies properties of operations to identify equivalent expressions.	Performs arithmetic operations including whole number exponents when no parenthesis or parentheses are present and applies properties of operations to identify and generate equivalent expressions.	Evaluates multi-step problems and generates equivalent expression involving rational numbers and whole number exponents in real world contexts.
Detailed	6.EE.B [5 to 8]	Uses substitution to determine whether a given value for a variable makes an equation or inequality true using whole numbers and recognizes that inequalities of the form $x < c$ and $x > c$ have infinitely many solutions and identifies them on a number line.	Solves an equation or inequality with a single operation using substitution to determine whether a given value in a set of values for a variable makes an equation or inequality true, and identifies solutions to compound inequalities on a number line.	Solves an equation or inequality as a process to answer a question and determines which value(s) in a set of values for a variable makes an equation or inequality true, and uses inequalities to show constraints in a real world context.	Creates a set of values that make an equation or inequality true, and creates a real world situation that corresponds to a given expression or constraint.
Detailed	6.EE.C [9]	Given a graph or table, identifies an algebraic equation for two quantities that change in relationship to one another.	Given a graph or table, identifies the dependent and independent variables and creates an algebraic equation to represent how these quantities change in relationship to one another.	Given a real world context, creates an equation to express the relationship between the dependent and independent variables and creates graphs and tables relating to the equation.	Creates a real world context using dependent and independent variables.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Geometry</b>					
Detailed	6.G.A [1 to 3]	Finds the area given all the measurements for triangles or polygons decomposed into rectangles and triangles, finds the volume of a right rectangular prism with whole number edges, and creates polygons in the coordinate plane given coordinates for the vertices.	Finds the area given some measures for triangles or polygons by decomposing into rectangles and triangles, finds the volume of a right rectangular prism with one fractional edge, and uses coordinates to find the length of a side joining points with the same first or second coordinate.	Solves a real world context by finding the area given some measures for triangles or polygons by decomposing into rectangles and triangles, finds the volume of a right rectangular prism with fractional edges, and using coordinates for vertices of a polygon.	Solves real world multi-step geometric problems including decimal and fractional measurements, finds missing side length of a right rectangular prism given a volume and fractional side lengths, and finds a missing vertex of a polygon given other vertices.
Detailed	6.G.A [4]	Represents three-dimensional figures using nets comprised of rectangles and triangles.	Finds surface area for three-dimensional figures using nets.	Solves real world problems by finding surface area for three-dimensional figures using nets with whole number edges.	Solves real world problems by finding surface area for three-dimensional figures using nets with fractional edges.
<b>Statistics and Probability</b>					
Detailed	6.SP.A [1 to 3]	Recognizes a statistical question from a list of questions, identifies a graph given a data set or vice versa, and recognizes mean, median, and mode as a measure of center and range as a measure of variation.	Changes a question from being non-statistical to statistical, demonstrates that a set of data collected to answer a statistical question has a distribution that can be described by its measure of center and spread, and determines mean, median, mode, and range.	Recognizes that a statistical question anticipates variability, demonstrates that a set of data collected to answer a statistical question can be described by its measure of center and spread and overall shape, and recognizes that a measure of center summarizes all the values of a data set with a single value.	Creates a statistical question given a context, creates a data set with a given measure of center and/or spread and/or overall shape, and determines how additional data points impact the measure of center and/or spread and/or overall shape.

**Appendix D. Performance Level Descriptors (PLDs)**

<b>PLD</b>	<b>Standard</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
Detailed	6.SP.A [4 to 5]	Identifies an appropriate display for numerical data including dot plots, histograms, and box plots, and summarizes data from a line plot by counting the number of observations, determining the range, and/or a measure of center.	Constructs an appropriate display for numerical data including dot plots, histograms, and box plots, and summarizes data from a line plot by counting the number of observations, determining the range, and/or a measure of center, and identifying outliers or other striking deviations.	Summarizes numerical data sets in relation to their context.	Creates a histogram or box plot given a dot plot and creates a data set given a display.



**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Ratio and Proportional Relationships</b>					
Detailed	7.RP.A [1]	Computes unit rates with ratios of two unit fractions having like or different units.	Computes unit rates with ratios of one non-unit fraction and one unit fraction having like or different units.	Computes unit rates with ratios of two non-unit fractions having like or different units. Ratios include side lengths.	Computes unit rates with ratios of two mixed numbers having like or different units. Ratios include areas.
Detailed	7.RP.A [2a to 2d]	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in a representation that includes (0,0).  Identifies the equation that models a relationship from a given representation with a proportional relationship.  Explains what any point (x,y) on the graph of a proportional relationship means in terms of the situation, but not identify the unit rate.	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in any simple representation, i.e. tables, equations, diagrams, verbal descriptions, graphs.  Models a proportional relationship using an equation when given a simple table, graph, or verbal description.  Explains what any point (x,y) on the graph of a proportional relationship means in terms of the situation, and can identify the unit rate when given the point (1,r).	Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in any complex representation, (i.e. tables, equations, diagrams, verbal descriptions, graphs).  Models a proportional relationship using an equation given a complex table, graph, or verbal description.  Explains what any point (x,y) on the graph of a proportional relationship means in terms of the situation and identify the unit rate.	Extends the given representation or creates a different representation that would represent the same proportional relationship.  Creates a representation with a context that would represent a given proportional equation.  Identifies a point (x,y) on the same graph as the point (1,r) for a proportional relationship and interprets the meaning of (x,y) in terms of the situation.
Detailed	7.RP.A [3]	Uses proportional relationships to solve simple ratio and percent problems.	Uses proportional relationships to solve simple ratio and percent problems in context.	Uses proportional relationships to solve multistep ratio and percent problems in context.	Creates equivalent proportional equations that could be used to solve the same ratio/percent problem in context.
<b>The Number System</b>					

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.NS.A [1a to 2d]	Adds, subtracts, multiplies and divides rational numbers using a number line or other manipulatives.	Adds, subtracts, multiplies and divides simple rational numbers. Recognizes that the sum of a number and its opposite equals zero.	Adds, subtracts, multiplies, and divides rational numbers and determines the reasonableness of the solution. Understands $p + q$ as the number located a distance $ q $ from $p$ in a positive or negative direction, and understand subtraction as adding the additive inverse. Understands that $-(q/p) = (-p)/q = p/(-q)$ . Converts a rational number to a decimal using long division and knows that the rational number terminates in 0 or eventually repeats. Knows that division by zero is undefined.	Interprets the sums of rational numbers in real-world contexts. Justifies the steps taken to add or subtract rational numbers. Interprets products and quotients of rational numbers in a real-world context.
Detailed	7.NS.A [3]	Solves simple real-world and mathematical problems involving the four operations with rational numbers using the number line or other manipulatives.	Solves simple real-world and mathematical problems involving the four operations with rational numbers.	Solves real-world and multistep mathematical problems involving the four operations with rational numbers.	Creates a story problem to model a given number sentence based on a real-world context and uses this to solve problems.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Expressions and Equations</b>					
Detailed	7.EE.A [1 to 2]	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with whole number coefficients). Recognizes and explains the meaning of an expression in context (with integer coefficients).	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with integer coefficients). Recognizes and explains the meaning of an expression in context (with rational coefficients).	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with simple rational coefficients). Understands 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.	Applies properties of operations as strategies to add, subtract, factor, and expand linear expressions (with complex rational coefficients). Creates equivalent expressions given a problem context and explains key terms and factors of the problem for each expression.
Detailed	7.EE.B [3 to 4b]	Solves equations of the form $px + q = r$ and $p(x + q) = r$ with (rational coefficients).	Solves real-world or mathematical problems of the form $px + q = r$ , $p(x + q) = r$ , $px + q > r$ , and $px + q < r$ with rational coefficients.	Creates a model and solves real-world or mathematical problems of the form $px + q = r$ , $p(x + q) = r$ , $px + q > r$ , and $px + q < r$ with rational coefficients.	Creates a model and solves real-world or mathematical problems using equations and inequalities with rational coefficients and explains what the solution means.
<b>Geometry</b>					
Detailed	7.G.A [1]	Finds actual lengths given a geometric figure and a scale factor.	Finds actual lengths given two geometric figures with some unknown side measure when given the scale factor that relates the two figures.	Computes actual lengths and areas from a scale drawing, creates a scale drawing based on a context, and reproduces a scale drawing using a different scale.	Explains the relationship between scale factors of length and scale factors of areas for geometric figures and reproduce a scale drawing using a different scale.
Detailed	7.G.A [2]	Identifies geometric shapes given conditions on the sides or angles.	Constructs geometric shapes given a combination of angle and side conditions and determines whether it makes a particular shape.	Notifies when conditions determine a unique triangle, more than one triangle, or no triangle.	Justifies the conditions for a unique triangle, more than one triangle or no triangle.
Detailed	7.G.A [3]	Identifies the 2-dimensional figure that results from a vertical or horizontal cut of a right rectangular prism.	Identifies the 2-dimensional figure that results from a vertical or horizontal cut of right rectangular pyramids.	Describes the 2-dimensional figure that results from a vertical, horizontal, or angled slice of a right rectangular prism.	Draws the 2-dimensional figure that results from a vertical, horizontal or angled slice of a right prism or pyramid.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	7.G.B [4]	Recognizes the formulas for area and circumference of a circle.	Calculates area and circumference given radius or diameter. Calculates radius or diameter given the circumference.	Determines the area given the circumference or vice versa. Solves real-world problems involving area and circumference. Gives an informal derivation of the relationship between circumference and area of a circle.	Understands how and why the formulas for area and circumference of a circle work. Explains the relationship between area of a circle and area of a parallelogram.
Detailed	7.G.B [5]	Identifies supplementary, complementary, vertical and adjacent angles.	Finds the unknown angle given another angle and their relationship.	Finds any of the unknown angles formed by two intersecting lines when measures are given algebraic expressions.	Creates and solves multi-step equations to find unknown angle measures given a figure with intersecting lines.
Detailed	7.G.B [6]	Finds the area of triangles, quadrilaterals and regular polygons. Finds the volume of cubes and right prisms.	Solves real-world problems involving surface area of 2-dimensional figures. Solve real-world volume problems for cubes and right prisms.	Solves real-world problems involving surface area of composite 2-dimensional figures. Solves real-world problems involving volume of 3-dimensional objects.	Uses relationships between volume and surface area of 3 dimensional shapes to solve real-world problems.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Statistics and Probability</b>					
Detailed	7.SP.A [1 to 2]	Identifies and recognizes sample populations given a scenario describing the entire population.	Recognizes that a random sample produces the most valid representation of the entire population.	Makes inferences about a population based on representative samples. Uses multiple samples to gauge variations in estimates or predictions.	Identifies and justifies the most representative sampling method for a situation. Chooses or creates a method of generating multiple samples to gauge variations in estimates or predictions.
Detailed	7.SP.B [3 to 4]	Identify basic measures of central tendency to compare two different populations.	Uses measures of central tendency to draw comparisons about two different populations.	Uses measures of central tendency and variability to make comparative inferences about two populations in any context.	Compares two visual representations of data to make comparative inferences about the central tendency and variability of two populations in context.
Detailed	7.SP.C [5]	Understands that the probability of a chance event is a number between 0 and 1.	Understands that if the probability of a chance event is closer to 1, it is likely to happen and if it is closer to 0, it is not likely to happen.	Identifies the probability of a chance event as impossible (0), unlikely, equally likely or unlikely (.5), more likely, or certain (1). Represents the probability as a fraction, decimal, or percent.	Compares probabilities of two or more events and justify the likelihood of each event.
Detailed	7.SP.C [6]	Makes approximations of probability for a chance event.	Uses the results of an experiment to make approximations of probability for an event.	Compares the relative frequency of an event to the theoretical probability of the event.	Recognizes and justifies why the experimental probability approaches the theoretical probability as the relative frequency of an event increases
Detailed	7.SP.C [7a to 7b]	Determines the theoretical probability of a simple event.	Determines the theoretical probability of a simple event and uses observed frequencies to create a uniform probability model.	Determines the theoretical probability of an event and uses observed frequencies to create a probability model for the data from a chance process (where outcomes are uniform or not uniform).	Compares and justifies the experimental and theoretical probability in a given situation.
Detailed	7.SP.C [8a to 8c]	Determines the sample space for compound events.	Determines the theoretical probability of a compound event.	Designs a simulation to generate frequencies for compound events.	Compares different simulations to see which best predicts the probability.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>The Number System</b>					
Detailed	8.NS.A [1 to 2]	Identifies square roots of nonsquare numbers and pi as irrational numbers. Understands that every number has a decimal expansion. Identifies rational or irrational numbers and converts familiar rational numbers with one repeating digit to fraction form.	Compares and orders rational and irrational numbers. Identifies irrational decimal expansions as approximations. Identifies rational and irrational numbers and converts less familiar rational numbers to fraction form.	Places irrational numbers on a number line. Uses approximations of irrational numbers to estimate the value of an expression. Converts decimals into rational numbers.	Explains how to get more precise approximations of square roots. Notices and explains the patterns that exist when writing rational numbers as fractions.
<b>Expressions and Equations</b>					
Detailed	8.EE.A [1 to 2]	Knows the properties of natural number exponents. Evaluates square roots of small perfect squares.	Applies the properties of natural number exponents to generate equivalent numerical expressions. Solves mathematical equations without context of the form $x^2=p$ and $x^3=p$ , where $p$ is a positive rational number.	Knows and applies the properties of integer exponents to generate equivalent numerical expressions. Uses square root and cube root symbols to represent solutions to equations of the form $x^2=p$ and $x^3=p$ , where $p$ is a positive rational number.	Uses properties of integer exponents to order or evaluate multiple numerical expressions with integer exponents. Explains how square roots and cube roots relate to each other and to their radicands.
Detailed	8.EE.A [3 to 4]	Uses numbers expressed in the form of a single digit times an integer power of 10. Represents very large and very small quantities in scientific notation.	Uses numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities. Multiplies and divides numbers in scientific notation.	Expresses how many times as much a number written as an integer power of 10 is than another number. Performs operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	Converts between decimal notation and scientific notation and compares numbers written in different forms. Calculates and interprets values written in scientific notation within a context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.EE.B [5 to 6]	Graphs proportional relationships, interpreting the unit rate as the slope. Determines the slope of a line given a graph.	Compares two different proportional relationships using the same representation. Derives the equation $y=mx$ for a line through the origin.	Compares two different proportional relationships represented in different ways. Recognizes and explains why the slope $m$ is the same between any two distinct points on a non-vertical line. Derives the equation $y=mx+b$ for a line that does not pass through the origin.	Generates a representation of a proportional relationship with specific qualities. Compares and contrasts situations in which similar triangles would and would not yield lines with the same slope.
Detailed	8.EE.C [7 to 8c]	Solves simple linear equations with integer coefficients. Identifies systems of equations that have one, infinite, or no solutions from graph. Estimates the solution of a system given a graph.	Solves multistep linear equations with rational coefficients and identifies equations that have one solution, infinitely many solutions, or no solutions. Solves a system of linear equations using any method.	Solves multistep linear equations with rational coefficients and variables on both sides and provides examples of equations that have one solution, infinitely many solutions, or no solutions. Provides examples of systems of equations that have a specified number of solutions. Creates and utilizes a system of linear equations to solve a real-world problem.	Justifies why an equation has one solution, infinitely many solutions, or no solution. Solves real-world and mathematical problems leading to two linear equations in two variables.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Functions	Proficient	Highly Proficient
Detailed	8.F.A [1 to 3]	Identifies whether a relation is a function from a graph or a mapping. Creates a graph from a function expressed as an equation. Determines whether a function is linear or nonlinear from a graph.	Identifies whether a relation is a function from any representation. Given a representation of a function, creates another representation of that function. Determines whether a function is linear or nonlinear from an equation.	Explains that a function is a rule that assigns to each input exactly one output and that the graph of a function is the set of ordered pairs consisting of an input and the corresponding output. Compares properties of two functions each represented in a different way. Determines whether or not a function is linear or nonlinear from any representation. Gives examples of functions that are not linear.	Creates any representation of a relation and explain why it is a function or not a function. Justifies whether two functions represented in different ways are equivalent or not by comparing their properties. Explains why the function is linear or nonlinear.
Detailed	8.F.B [4 to 5]	Determines the rate of change of the function from a graphical description of the linear function. Describes qualitatively the functional relationship between two quantities by analyzing some features of a graph (e.g., linear and nonlinear).	Determines the rate of change and initial value of the function from two (x,y) values. Creates a graph of identified information. Describes qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing).	Interprets the rate of change and initial value of a linear function in terms of the situation it models or its graph/table of values. Constructs a function to model a linear relationship between two quantities. Sketches a graph that exhibits given qualitative features of a function.	Identifies what prevents a set of values in either a table or graph from being linear and adjusts the values to make them linear. Interprets qualitative features of a function in a context.
Geometry					



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.G.A [1a to 4]	Identifies visual representations and congruent figures that result after one transformation. Recognizes that it takes a combination of transformations and dilations to produce a similar figure.	Identifies the angles that correspond after a transformation. Identifies a transformation between two congruent figures. Describes the effect of reflections and translations on two-dimensional figures using coordinates and coordinate notation. Identifies dilations of figures by a given scale factor and transformations.	Verifies experimentally the properties of rotations, reflections and translations. Describes the effect of transformations on two-dimensional figures using coordinates and coordinate notation, including whether the transformations lead to similar or congruent figures.	Recognizes and explains the properties of transformations in real-world graphic illustrations and visual representations, including whether the transformations lead to similar or congruent figures.
Detailed	8.G.A [5]	Knows that the sum of angles of a triangle equals 180 degrees, and identifies angle pairs when parallel lines are cut by a transversal.	Finds unknown angle measures in a triangle, and unknown angle measures for angle pairs when parallel lines are cut by a transversal.	Gives an informal argument for the sum of angles of a triangle, the measure of an exterior angle of a triangle, and congruent angle relationships when parallel lines are cut by a transversal.	Gives an informal argument that a triangle can only have one 90 degree angle. Gives an informal argument for the pairs of angles that are supplementary when parallel lines are cut by a transversal.
Detailed	8.G.B [6 to 8]	Knows the Pythagorean Theorem and that it applies to right triangles. Calculates unknown hypotenuse side length given the Pythagorean Theorem. Applies the Pythagorean Theorem to find the distance between two points in a coordinate system with the right triangle drawn where the Pythagorean Theorem is given.	Understands the proof of the Pythagorean Theorem and its converse. Calculates unknown side lengths using the Pythagorean Theorem given at least two different side lengths of a right triangle. Applies the Pythagorean Theorem to find the distance between two points in a coordinate system with the right triangle drawn where the Pythagorean Theorem is not given.	Understands and explains the proof of the Pythagorean Theorem and its converse. Applies the Pythagorean Theorem to a real-world situations in two and three dimensions to determine unknown side lengths. Applies the Pythagorean Theorem to find the distance between two points in a coordinate system.	Models a proof of the Pythagorean Theorem and its converse using a pictorial representation. Recognizes situations and applies the Pythagorean Theorem in multi- step problems. Finds the coordinates of a point which is a given distance (non-vertical and non- horizontal) from another point.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	8.G.C [9]	Finds the volume of a cylinder.	Finds the volume of a cone, cylinder or sphere.	Knows the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world mathematical problems.	Describes the relationship between the formulas for volumes of cones, cylinders, or spheres. Explains the derivation of the formulas for cones, cylinders, and spheres.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Statistics and Probability	Proficient	Highly Proficient
Detailed	8.SP.A [1 to 4]	Constructs a scatter plot. Recognizes a straight line can be used to describe a linear association on a scatter plot. Identifies the slope and y-intercept of a linear model on a scatter plot. Completes a partially filled-in two-way table and interpret the table by row or column.	Constructs a scatter plot and describes the pattern as positive, negative or no relationship. Draws a straight line on a scatter plot that closely fits the data points. Identifies possible data points given a linear model. Constructs a two-way table of categorical data.	Describes patterns in a scatter plot. Judges how well the trend line fits the data by looking at the closeness of the data points. Interprets the meaning of the slope and y-intercept in context. Interprets and describes relative frequencies for possible associations from a two-way table.	Constructs and interprets scatter plots to investigate patterns of association between two quantities. Compares more than one trend line for the same scatter plot and justifies which one best fits the data. Creates and uses a linear model based on a set of bivariate data to solve a real-world problem. Interprets and compares relative frequencies to identify patterns of association.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Number and Quantity</b>					
Detailed	N-RN.B [3]	Explains why adding and multiplying two rational numbers results in a rational number	Explains why adding a rational number to an irrational number results in an irrational number	Explains why multiplying a nonzero number to an irrational number results in an irrational number.	Generalizes and develops rules for sum and product properties of rational and irrational numbers.
<b>Algebra</b>					
Detailed	A-SSE.A [1a to 1b]	Identifies some of the basic terms (base, exponent, coefficient, and factor) of a linear or exponential expression.	Identifies all of the basic terms (base, exponent, coefficient, and factor) of linear and exponential expressions.	Interprets complicated expressions by viewing one or more of their parts as a single entity.	Explains the context of different parts of a formula presented as a complicated expression.
Detailed	A-SSE.A [2]	Can identify different forms for the same expression.	Justifies the different forms based on mathematical properties.	Recognizes equivalent forms of numerical and polynomial expressions in one variable and uses the structure of the expression to identify ways to rewrite it.	Rewrites numerical and polynomial expressions to equivalent forms, using the structure of the expression. Interprets different symbolic notation. Makes generalizations by rewriting expressions in context, using their structure.
Detailed	A-SSE.B [3a]	Identifies the zeroes of a quadratic expression written in factored form.	Factors a quadratic expression without a leading coefficient.	Factors a quadratic expression to reveal the zeroes of the function it defines.	Explains conditions for two, one, and no real roots.
Detailed	A-SSE.B [3b]	Identifies the maximum or minimum of a function, using the graph.	Identifies the maximum or minimum of a function when given in vertex form.	Completes the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	Completes the square in a quadratic expression (where $b$ is not divisible by two).

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	A-SSE.B [3c]	Knows the properties of exponents	Applies the properties of exponents.	Uses the properties of exponents to transform expressions for exponential functions with integer exponents modeling a real-world context.	Interprets properties of exponential functions by transforming them into equivalent expressions that reveal properties within a context.
Detailed	A-APR.A [1]	Identifies polynomial expressions.	Adds, subtracts, and multiplies polynomials.	Understands that polynomials are closed under the operations of addition, subtraction, and multiplication.	Creates equivalent polynomial expressions using the fact that polynomials are closed under the four operations.
Detailed	A-APR.B [3]	Identifies the zeros of a quadratic function from a graph.	Use zeros to sketch the graph of a quadratic function given in factored form.	Factor a quadratic function and use zeroes to sketch a graph of the function.	Identify zeros from the graph and use zeroes to construct the quadratic function.
Detailed	A-CED.A [1 and 4]; A-REI.B [3]	Distinguishes between linear equations, inequalities, and non-linear equations.	Solves linear equations and inequalities in one variable with constant coefficients.	Creates and solves linear equations and inequalities in one variable, including equations with coefficients represented by letters to solve problems with a real world context. Rearranges formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Creates, rearranges, and solves exponential equations with integer exponents or quadratic equations.
Detailed	A-CED.A [2]; A-REI.D [12]	Writes and graphs an equation to represent a linear relationship. Identifies a solution region when the graph of a linear inequality is given.	Writes and graphs an equation to represent an exponential relationship. Graphs the solutions to a linear inequality in two variables as a half-plane.	Constructs equations and graphs that model linear and exponential relationships (with context). Graphs solutions of the system of inequalities and identifies the solution set as a region of the coordinate plane that satisfies both inequalities.	Compares and contrasts equations and graphs that model linear and exponential relationships. Writes or creates a system of linear inequalities given a context or graph and identifies the solution set as a region of the coordinate plane that satisfies all inequalities.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	A-CED.A [3]	Determines whether a point is a solution to a system of equations and/or inequalities given a graph or equations.	Interprets solutions as viable or non-viable options in a modeling context where constraints are presented verbally.	Represents constraints by equations or inequalities, and by systems of equations and/or inequalities.	Defends and justifies solutions or non-solutions in a modeling context.
Detailed	A-REI.A [1]	Solves a quadratic equation with multiple steps, without justifying the steps involved in solving.	Describes the steps in solving quadratic equations.	Explains and justifies the steps in solving linear equations by applying the properties of equality, inverse, and identity.	Explains and justifies the steps in solving linear and quadratic equations by applying <b>and naming</b> the properties of equality, inverse, and identity.
Detailed	A-REI.B. [4a to 4b]	Solves quadratic equations with real solutions by simple inspection.	Solves quadratic equations by factoring.	Solves quadratic equations with real solutions by inspection (e.g., for $x^2 = 49$ )-- taking square roots, completing the square, the quadratic formula, and factoring-- as appropriate to the initial form of the equation.	Determines the most efficient method for solving a quadratic equation and justifies the choice selected. Recognize cases in which a quadratic equation has no real solutions.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	A-REI.C [5 to 6]	Explains the use of the multiplication property of equality to solve a system of equations. Solves a system of linear equations approximately when given a graph of the system.	Explains why the sum of two equations is justifiable in the solving of a system of equations. Tests a solution to the system in both original equations (both graphically and algebraically).	Relates the process of linear combinations with the process of substitution for solving a system of linear equations. Solves a system of linear equations exactly and approximately by choosing the best method depending on the representation of the equations	Proves that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. Analyzes the system of equations and is able to solve exactly and approximately given a context or real-world situation. Solves a system of equations and manipulates one of the equations to provide additional information or an additional given solution.
Detailed	A-REI.D [10 to 11]	Identifies solutions and non-solutions of linear equations in two variables. Finds the point where two lines or exponential curves intersect on a graph or approximates solutions using other methods such as a table or technology.	Identifies solutions and non-solutions of exponential equations in two variables. Finds and explains why the solution to a system linear, polynomial, rational, or absolute value equations is the point where the two intersect.	Graphs points that satisfy linear and exponential equations. Models the solutions of a system of linear equations and/or exponential equations showing the solutions using technology, tables, graphs, approximations. Finding the solutions approximately is limited to cases where $f(x)$ and $g(x)$ are polynomial functions.	Describes viable solutions using the knowledge that continuous lines and curves contain an infinite number of solutions. Explains why there are infinitely many solutions when $f(x) = g(x)$ .

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Functions	Proficient	Highly Proficient
Detailed	F-IF.A [1 to 2]; F-IF.B [5]	Identifies functions and their domains	Evaluates a function for inputs in the domain, and writes functions using function notation (without context).	Uses function notation and evaluates functions for inputs in their domain, and interprets statements that use function notation in terms of context.	Applies and extends knowledge of domain and range to real world situations and contexts; creates a function for a given context where the domain meets given parameters.
Detailed	F-IF.B [4]	Identifies the key features (as listed in the Standard) when given a linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions (with domains in the integers).	Interprets the key features (as listed in the Standard) when given a graph of a linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions (with domains in the integers).	Identifies and interprets the key features (as listed in the Standard) when given a table of values. Sketches graphs of linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions (with domains in the integers) showing key features, when given a verbal description of the relationship.	Accurately creates a story or context that models the given key features of linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions (with domains in the integers).
Detailed	F-IF.B [6]	Determines the rate of change of a linear function presented algebraically.	Determines the rate of change of an exponential function presented algebraically, over a given interval.	Calculates and interprets the average rate of change of a function presented symbolically or as a table over a specified interval.	Describes the different rates of change over given intervals of the graph .
Detailed	F-IF.C [7a to 7b, and 8a]	Evaluates linear, quadratic, piecewise, step, and absolute value functions	Identifies key features of linear, quadratic, piecewise, step, and absolute value functions when the graph is given.	Graphs linear, quadratic, piecewise, step, and absolute value functions, showing intercepts, maxima, and minima. Can graph functions expressed symbolically and can show key features of the graph (by hand in simple cases, and using technology for more complicated cases).	Graphs and compares linear, quadratic, piecewise, step, and absolute value functions in various forms.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	F-IF.C [9]	Compares slopes and y - intercepts of two linear functions where one is presented graphically and the other is presented in slope-intercept form.	Compares growth rates and intercepts of two functions where one is presented graphically and the other is presented in function notation.	Uses tables, graphs, algebra, and verbal descriptions to compare properties of two functions (linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions with domains in the integers), when each is presented a different way.	Constructs a linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions with domains in the integers that has a characteristic (i.e. slope, intercept, maximum) that is greater than or lesser than a given function.
Detailed	F-BF.A [1]; F-IF.A [3]; F-LE.A [2]	Identifies the parts of a recursive function or sequence.	Defines and expresses a recursive sequence as a function, constructs a linear function (not multi-step) given a graph, a description of a relationship, or two input-output pairs.	Recognizes that sequences are functions with a domain that is a subset of the integers, can generate a recursive function to express a sequence and generate a sequence given a recursive function, constructs an exponential function (not multi-step) given a graph, a description of a relationship, or two input-output pairs.	Applies sequences, sometimes expressed as recursive functions, to real world contexts.
Detailed	F-BF.B [3]	Relates the vertical translation of a linear function to its y-intercept.	Performs vertical translations on linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions with domains in the integers.	Performs vertical translations on graphs. Describes what will happen to a function when $f(x)$ is replaced by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x+k)$ for different values of $k$ .	Finds the value of $k$ given $f(x)$ replaced by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x+k)$ on a graph of linear, quadratic, square root, cube root, piecewise-defined functions (including step functions and absolute value functions), and exponential functions with domains in the integers.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	F-LE.A [1a to 1c]	Recognizes situations in which one quantity changes at a constant rate per unit interval relative to another.	Recognizes relationships in tables and graphs that can be modeled with linear functions (constant rate of change) and with exponential functions (multiplicative rate of change)	Justifies that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals. (ex- percent change)	Describes the rate of change per unit as constant or the growth factor as a constant percentage. Proves that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.
Detailed	F-LE.A [3]	Compares the values of linear and exponential functions at specific points.	Compares the values of linear and exponential functions over various intervals.	Observes, using graphs and tables, that a quantity increasing exponentially eventually exceeds a quantity that is increasing linearly or quadratically.	Observes, explores, predicts, models, and evaluates different situations in which linear and exponential functions are compared.
Detailed	F-LE.B [5]	Identifies which values are constant from a given context.	Interprets the slope and x-and y-intercepts in a linear function in terms of a context.	Interprets the base value and vertical shifts in an exponential function of the form $f(x) = b^x + k$ , where $b$ is an integer and $k$ can equal zero, in terms of context.	Interprets the base value and initial value in an exponential function of the form $f(x) = a \cdot b^x$ , where $b$ is an integer, and $a$ can be any positive integer including 1, in terms of context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient Statistics	Proficient	Highly Proficient
Detailed	S-ID.A [1]	Identifies dot plots, histograms, and box plots for a given set of data.	Graphs numerical data on a real number line using dot plots, histograms, and box plots.	Describes and gives a simple interpretation of a graphical representation of data on dot plots, histograms, and box plots.	Determines and justifies which type of data plot on a real number line would be most appropriate for a set of data. Identify advantages and disadvantages of different types of data plots.
Detailed	S-ID.A [2 to 3]	Describes informally the center and spread of a single set of data or graph. Identifies shape, center, and spread of a data set.	Compares informally the similarities or differences in shape, center, or spread between two graphs. Identifies and states the effects of existing outliers.	Explains and interprets similarities and differences using specific measures of center and spread, given two sets of data or two graphs with possible effects from existing outliers.	Plots data based on situations with multiple data sets, and then compares and discusses using measures of center and spread and explores the manipulation of additional data points.. Justifies which measure(s) are most appropriate for comparison. Identifies advantages and disadvantages of using each measure of center and spread.
Detailed	S-ID.B [5]	Explains data in a two-way frequency table.	Creates a two-way frequency table showing the relationship between two categorical variables.	Finds and interprets joint, marginal and conditional relative frequencies. Recognizes possible associations and trends in the data.	Given a context, interprets, identifies, and describes associations and trends using a two-way frequency table.
Detailed	S-ID.B [6a to 6c]	Creates a scatter plot of bivariate data.	Determines if a plotted data set is approximately linear.	Creates a scatter plot of bivariate data and estimates a linear function that fits the data. Uses this function to solve problems in the context of the data.	Compares the fit of different functions, including exponential functions with domains in the integers, to data and determines which function has the best fit.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	S-ID.C [7]	Identifies a linear model of bivariate data.	Graphs data in a scatter plot, identify the slope and y- intercept of a linear model.	Using a line fitted to data, interprets the slope (rate of change) and the intercept (constant term) of a linear model in the context of the situation and data.	Using a function that best fits the data, interpolates and extrapolates trends in the data.
Detailed	S-ID.C [8 to 9]	Uses a table or graph of a set of data to informally describe a correlation. Defines causation and correlation.	Identifies the existence of or non-existence of causation in the context of a correlated problem. Computes the correlation coefficient of a set of linearly-related data using technology.	Interprets the correlation coefficient of a linear fit in the context of a situation using technology. Determines whether the correlation shows a weak positive, strong positive, weak negative, strong negative, or no correlation. Distinguishes between causation and correlation in the context of a situation with data.	Supports or refutes a hypothesized correlation between two sets of data. Supports or refutes claims of causation with the understanding that a strong correlation does not imply causation.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Congruence</b>					
Detailed	G-CO.A [1]	Identifies an angle, circle, perpendicular line, parallel line, and line segment using proper notation.	Informally defines an angle, circle, perpendicular line, parallel line, and line segment using examples and non- examples.	Can explain definitions of an angle, circle, perpendicular line, parallel line, and line segment based on the notions of point, line, distance along a line, and distance around a circular arc.	Identifies real-life examples of an angle, circle, perpendicular line, parallel line, and line segment using precise definitions.
Detailed	G-CO.A [2 and 4]	Describes reflections, rotations, and translations. Identifies rotations, reflections, and translations given an image and its transformation.	Describes dilations. Informally describes rotations, reflections, and translations using examples and non- examples.	Compares transformations in the plane and understands them as functions that take points in the plane as inputs and give other points as outputs. Develops definitions of rotations, reflections, and translations using the terms angles, circles, perpendicular lines, parallel lines, and line segments.	Represents functions to describe transformations using a variety of media. Justifies statements about rotations, reflections, and translations on the coordinate plane.
Detailed	G-CO.A [3]	Distinguishes between rotations and reflections given a rectangle, parallelogram, trapezoid, or regular polygon and its transformation.	Identifies lines and points of symmetry given a rectangle, parallelogram, trapezoid, or regular polygon and its reflection or rotation.	Describes the rotations and reflections that carry a given rectangle, parallelogram, trapezoid, or regular polygon onto itself.	Identifies a rectangle, parallelogram, trapezoid, or regular polygon that satisfies a description of rotational symmetry or lines of symmetry.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	G-CO.A [5]	Performs rotations, reflections, and translations on a given figure.	Identifies a sequence of transformations that will carry a given figure onto another.	Performs rotations, reflections, and translations using a variety of methods and specifies the sequence of transformations that will carry a given figure onto another.	Explains how the order of a sequence of transformations is performed may result in different outcomes.
Detailed	G-CO.B [6]	Explains transformations of a given figure based on descriptions of rigid motion.	Predicts the effect of a transformation of a given figure based on descriptions of rigid motion.	Creates congruent figures using transformations of rigid motion.	Justifies the congruence of two complex figures using properties of rigid motion.
Detailed	G-CO.B [7]	Identifies corresponding pairs of angles or corresponding pairs of sides of two triangles that are congruent.	Identifies corresponding pairs of angles and corresponding pairs of sides of two triangles that are congruent.	Shows that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent (CPCTC) using the definition of congruence in terms of rigid motions.	Justifies that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent in a context.
Detailed	G-CO.B [8]	Identifies corresponding parts of two congruent triangles.	Identifies the minimum conditions necessary for triangle congruence (ASA, SAS, SSS).	Demonstrates how the criteria for triangle congruence (ASA, SAS, SSS) follow from the definition of congruence in terms of rigid motions.	Understands and explains why SSA and AAA do not provide enough evidence for triangle congruence.
Detailed	G-CO.C [9]	Describes examples of theorems about lines and angles.	Determines the validity of statements within a given proof of a theorem about lines and angles.	Proves theorems about lines and angles.	Applies theorems about lines and angles to a real-life context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	G-CO.C [10]	Describes examples of theorems about triangles.	Determines the validity of statements within a given proof of a theorem about triangles.	Proves theorems about triangles. (Theorems include: measures of interior angles of a triangle sum to $180^\circ$ ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.)	Applies theorems about triangles to a real-life context.
Detailed	G-CO.C [11]	Defines theorems about parallelograms.	Determines the validity of statements within a given proof of a theorem about parallelograms.	Proves theorems about parallelograms.	Applies theorems about parallelograms to a real-life context.
Detailed	G-CO.D [12 to 13]	Copies a line segment and an angle. Constructs congruent segments and perpendicular lines.	Bisects a line segment and an angle. Constructs an equilateral triangle, a square, and a regular hexagon.	Constructs perpendicular lines, a perpendicular bisector of a line segment, and a line parallel to a given line through a point not on the line. Constructs an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Creates a polygon given certain attributes using geometric constructions. Explores the construction of other regular polygons inscribed in a circle.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Similarity, Right Triangles and Trigonometry</b>					
Detailed	G-SRT.A [1a to 1b]	Identifies dilations.	Identifies the scale factors of dilations.	Verifies the properties of dilations given by a center and a scale factor, by understanding that a dilation creates parallel lines and line segments in ratios of the scale factor.	Locates the center of dilation and scale factor, given a pair of similar figures on a coordinate plane.
Detailed	G-SRT.A [2]	Identifies corresponding parts of two similar figures.	Determines if two given figures are similar.	Explains that two given figures are similar in terms of similarity transformations.	Proves or disproves that two given figures are similar, using transformations and the definitions of similarity.
Detailed	G-SRT.A [3]	Identifies similarity transformations.	Identifies triangle similarity by the use of the AA criterion.	Establishes the AA criterion for two triangles to be similar by using the properties of similarity transformations.	Proves that two triangles are similar if two angles of one triangle are congruent to two angles of the other triangle, using the properties of similarity transformations.
Detailed	G-SRT.B [4]	Defines theorems about triangles.	Determines the validity of statements within a given proof of a theorem about triangles.	Proves theorems about triangles. (Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.)	Applies theorems about triangles to a real-life context.
Detailed	G-SRT.B [5]	Finds measures of sides and angles of congruent and similar triangles.	Solves problems involving triangles, using congruence and similarity criteria.	Solves problems and proves relationships in geometric figures by using congruence and similarity criteria for triangles. Includes problems from context.	Proves conjectures about congruence or similarity in geometric figures, using congruence and similarity criteria for triangles. Includes problems from context.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	G-SRT.C [6]	Understands that, in similar triangles, corresponding angles are congruent and ratios of corresponding sides are equal. Understands that the acute angles of a right triangle are complementary.	Defines sine, cosine, and tangent as the ratio of sides of a right triangle. Identifies the relationship between the sine and cosine of the acute angles of a right triangle.	Understands that the ratio of two sides in one triangle is equal to the ratio of the corresponding two sides of all other similar triangles, leading to definitions of trigonometric ratios for acute angles. Explains the relationship between the sine and cosine of complementary angles.	Determines the similarity of right triangles by comparing the trigonometric ratios of the corresponding sides. Solves for missing angles of right triangles using sine and cosine.
Detailed	G.SRT.C [7]	Understands that the acute angles of a right triangle are complementary.	Identifies the relationship between the sine and cosine of the acute angles of a right triangle.	Explains the relationship between the sine and cosine of complementary angles.	Solves for missing side lengths of right triangles when given a fraction that is equivalent to the sine or cosine of one of the angles.
Detailed	G-SRT.C [8]	Solves right triangles using the Pythagorean Theorem.	Applies the Pythagorean Theorem in real-life and mathematical contexts.	Solves right triangles using trigonometric ratios and the Pythagorean Theorem in applied/contextual problems.	Models solutions to situations, using trigonometric ratios and the Pythagorean Theorem, by constructing equations that can be used to solve the problem. Including problems from context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Circles</b>					
Detailed	G-C.A [1]	Knows that the definition of a circle as points equidistant to a given point.	Recognizes that all circles are similar.	Proves that all circles are similar.	Solves applied math problems, using the fact that all circles are similar.
Detailed	G-C.A [2]	Identifies inscribed angles, radii, and chords in circles.	Recognizes relationships among inscribed angles, radii, and chords in circles.	Describes relationships among inscribed angles, radii, and chords in circles.	Solves problems using relationships among inscribed angles, radii, and chords in circles.
Detailed	G-C.A [3]	Identifies inscribed and circumscribed circles of a polygon.	Constructs the inscribed and circumscribed circles of a triangle.	Proves properties of angles for a quadrilateral inscribed in a circle.	Proves the unique relationships between the angles of a triangle or quadrilateral inscribed in a circle.
Detailed	G-C.B [5]	Defines a sector area of a circle as a proportion of the entire circle.	Develops the definition of radians as a unit of measure by relating to arc length.	Derives the formula for the area of a sector, and derives, using similarity, the fact that the length of the arc intercepted by an angle is proportional to the radius.	Proves that the length of the arc intercepted by an angle is proportional to the radius, with the radian measure of the angle being the constant of proportionality.

## Appendix D Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Expressing Geometric Properties with Equations</b>					
Detailed	G-GPE.A [1]	Identifies the center and radius of a circle, given an equation written in $(x - h)^2 + (y - k)^2 = r^2$ form.	Creates the equation for a circle, when given the center and radius.	Completes the square to find the center and radius of a circle given by its equation.	Determines the equation of a circle, given points of tangency.
Detailed	G-GPE.B [4]	Solves problems algebraically, using geometric theorems involving a circle on the coordinate plane. Locates segments on a coordinate plane that are parallel or perpendicular by calculating slope.	Proves simple geometric theorems using coordinates, when given a visual representation on the coordinate plane.	Proves simple geometric theorems algebraically using coordinates, such as proving a point lies on a given circle.	Constructs visual representations on the coordinate plane that meet given conditions for coordinates. Justifies statements about geometric figures using coordinates.
Detailed	G-GPE.B [5]	Can explain why the slopes of parallel lines are equal and the slopes of perpendicular lines are negative reciprocals or one that is 0 and the other that is undefined.	Creates the equation of a line that passes through a specific point given its slope.	Creates the equation of a line parallel or perpendicular to a given line that passes through a given point.	Creates the equation of a line parallel or perpendicular to a given line that passes through a given point in a context.
Detailed	G-GPE.B [6]	Finds the point on a line segment that partitions the segment in a given ratio, given a visual representation of the line segment.	Finds the point on a line segment that partitions the segment in a given ratio, given coordinates for the line segment.	Finds the point on a directed line segment (between two given points) that partitions the segment in a given ratio.	Constructs a line segment that is partitioned in a given ratio.
Detailed	G-GPE.B [7]	Calculates the perimeter of a polygon.	Calculates areas of a rectangle and right triangle given their coordinates.	Calculates areas of any triangle given its coordinates.	Calculates perimeters of polygons and areas of triangles and rectangles using their coordinates from a contextual problem.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Geometric Measurement and Dimension</b>					
Detailed	G-GMD.A [1]	Informally describes the formulas for the circumference and area of a circle.	Informally describes the formulas for the volume of a cylinder, pyramid, and cone by the use of dissection arguments.	Explains the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone.	Justifies the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone.
Detailed	G-GMD.A [3]	Substitutes given dimensions into the formulas for the volume of cylinders, pyramids, cones, and spheres.	Computes the volume of cylinders, pyramids, cones, and spheres, given a graphic.	Solves problems using the volume formulas for cylinders, pyramids, cones, and spheres.	Finds the volume of cylinders, pyramids, cones, and spheres in a real-life context.
Detailed	G-GMD.B [4]	Identifies the shapes of two-dimensional cross-sections formed by a vertical or horizontal plane.	Identifies a three-dimensional object generated by rotations of a simple two-dimensional object about a line of symmetry of the object.	Identifies the shapes of two-dimensional cross-sections of three-dimensional objects. Identifies a three-dimensional object generated by rotations of two-dimensional objects.	Sketches the shape of a particular two-dimensional cross-section of a three-dimensional shape. Sketches the three-dimensional object that results from the rotation of a given two-dimensional object.
<b>Modeling with Geometry</b>					
Detailed	G-MG.A [1]	Identifies geometric shapes that model a real-world object.	Uses a geometric shape modeled in a simple real-world object to determine the appropriate measures.	Uses geometric shapes, measures, and properties to model and describe objects.	Uses composite geometric shapes, measures, and properties to model and describe objects.
Detailed	G-MG.A [2]	Calculates density based on area, when a formula is given.	Calculates density based on volume (when a formula is given), and identifies appropriate unit rates.	Uses properties of density based on area and volume to model a situation in context.	Compares and contrasts density rates in a modeling context.
Detailed	G-MG.A [3]	Identifies relevant geometric models for use in solving a design problem.	Compares quantitatively different proposed solutions to a design problem, using geometric properties of the solution.	Designs a structure to meet constraints and optimization requirements.	Designs a composite structure to meet constraints and optimization requirements.

**Appendix D. Performance Level Descriptors (PLDs)**

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
<b>Number and Quantity</b>					
Detailed	N-RN.A [1 to 2]	Uses proper notation and uses structure for integer exponents only. Converts radical notation to rational exponent notation.	Uses proper notation for radicals in terms of rational exponents, but is unable to explain the meaning. Identifies equivalent forms of expressions involving rational exponents (but is not able to re-write or find the product of multiple radical expressions).	Explains and uses the meaning of rational exponents in terms of properties of integer exponents, and uses proper notation for radicals in terms of rational exponents. Rewrites expressions involving radicals and rational exponents, using the properties of exponents; identifies equivalent forms of expressions involving rational exponents; and converts radical notation to rational exponent notation.	Proves, uses, and explains the properties of rational exponents (which are an extension of the properties of integer exponents), and extends to real world context. Compares contexts where radical form is preferable to rational exponents, and vice versa.
Detailed	N-CN.A [1 to 2]	Recognizes that the square root of a negative number is not a real number. Adds, subtracts, and multiplies using single operations with complex numbers (e.g.: $4i + 5i = 9i$ ).	Converts simple "perfect" squares to complex number form ( $bi$ ), such as the square root of -25 is $5i$ . Uses the Commutative, Associative, and Distributive properties to identify products and sums of complex numbers.	Knows that there is a complex number $i$ such that $i^2 = -1$ , and identifies the proper $a+bi$ form (with $a$ and $b$ real). Calculates sums and products of complex numbers for multi-step problems.	Generalizes or develops a rule that explains complex numbers and their properties. Generalizes or develops rules for abstract problems, such as explaining what type of expression results, when given $(a + bi)(c + di)$ .

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Algebra</b>					
Detailed	A-SSE.A [2]; A-SSE.B [3c]	Identifies structure used to rewrite polynomial expressions.	Identifies structure used to rewrite rational, polynomial, and exponential expressions with rational or real exponents.	Recognizes equivalent forms of complicated expressions, particularly those involving rational, polynomial, or exponential functions with rational or real exponents, and uses the structure of the expression to identify ways to rewrite it.	Rewrites complicated expressions (including those involving rational, polynomial, or exponential functions with rational or real exponents) to equivalent forms using the structure of the expression. Makes generalizations by rewriting expressions in context using their structure.
Detailed	A-SSE.B [4]; F-BF.A [2]	Recognizes if a sequence is arithmetic, geometric, or neither.	Writes arithmetic and/or geometric sequences with an explicit formula.	Writes arithmetic and geometric sequences both recursively and with an explicit formula.	Models contextual situations with arithmetic and geometric sequences (as appropriate).
Detailed	A-APR.B [2]	Given a polynomial in factored form, identifies the zeroes of the polynomial.	Divides a polynomial by a factor $(x - a)$ .	Using the Remainder Theorem, decides whether $(x - a)$ is factor of a given polynomial.	Explains why $(x - a)$ is a factor of $p(x) = 0$ when $p(a) = 0$ .
Detailed	A-APR.B [3]	Identifies the zeroes of a function from a graph.	Uses zeroes to sketch the graph of a function given in factored form.	Factors a polynomial and uses zeroes to sketch a graph of the function.	Identifies zeroes from a graph and uses zeroes to construct the function.
Detailed	A-APR.C [4]	Identifies a polynomial identity.	Justifies a polynomial identity by testing with specific numbers.	Proves polynomial identities and uses them to describe numerical relationships.	Algebraically justifies the validity of polynomial identities. Uses the identity to describe numerical relationships in a given context.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	A-APR.D [6]	Rewrites simple rational expressions in different forms, such as rewriting $a(x)/x$ in the form $q(x) + 0$ , where $a(x)$ and $q(x)$ are polynomials.	Rewrites simple rational expressions in different forms, such as rewriting $a(x)/x$ in the form $q(x) + r/x$ , where $a(x)$ and $q(x)$ are polynomials and $r$ is an integer.	Rewrites simple rational expressions in different forms, such as rewriting $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$ , where $a(x)$ , $b(x)$ , $q(x)$ and $r(x)$ are polynomials, with the degree of $r(x)$ less than the degree of $b(x)$ .	Rewrites simple rational expressions in different forms such as rewriting $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$ where $a(x)$ , $b(x)$ , $q(x)$ and $r(x)$ are polynomials, with the degree of $r(x)$ less than the degree of $b(x)$ , and $b(x)$ with degree 2 or above.
Detailed	A-CED.A [1]	Identifies exponential equation with integer exponents that models a given situation.	Identifies exponential equation with rational or real exponents and rational functions that models a given situation.	Creates a rational or exponential equation with rational or real exponents and uses it to solve problems.	Explains the meaning of solutions (including extraneous), in reference to context.
Detailed	A-REI.A [1]	Solves simple rational or radical equations with multiple steps, without justifying the steps involved in solving.	Describes the steps in solving simple rational or radical equations.	Explains and justifies the steps in solving simple rational or radical equations by applying the properties of equality, inverse, and identity.	Explains and justifies the steps in solving simple rational and radical equations by applying naming properties.
Detailed	A-REI.A [2]	Identifies simple rational and radical equations.	Identifies the number of solutions and extraneous solutions, given a simple rational or radical equation.	Solves simple rational and radical equations and identifies extraneous solutions.	Solves complicated rational and radical equations and justifies extraneous solutions.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	A-REI.B [4b]; N-CN.C [7]	Solves quadratic equations by simple inspection. Understands the meaning of a complex number.	Solves quadratic equations by factoring. Understands the meaning of a complex number and identifies when quadratic equations will have non-real solutions (but is unable to identify the complex solution).	Solves quadratic equations by inspection (e.g., for $x^2 = 49$ )-- taking square roots, completing the square, the quadratic formula, and factoring-- as appropriate to the initial form of the equation. In the case of equations that have roots with nonzero imaginary parts, writes the solutions as $a \pm bi$ for real numbers $a$ and $b$ .	Determines the most efficient method for solving a quadratic equation and justifies the choice selected. Creates a quadratic function without $x$ -intercepts, and verifies that the solutions are complex.
Detailed	A-REI.C [6 to 7]	Identifies by inspection the number of solutions for a system of equations.	Finds approximate solutions of a system of equations from a graph.	Solves a simple system of equations algebraically and graphically.	Generalizes the number of solutions to a system of equations.
Detailed	A-REI.D [11]	Finds the solution to $f(x)=g(x)$ , where $f(x)$ and $g(x)$ are linear, and the solution to quadratic functions presented in a graph.	Finds the solution to $f(x)=g(x)$ , where $f(x)$ and $g(x)$ are absolute value and exponential functions.	Finds the solution to $f(x)=g(x)$ , where $f(x)$ and $g(x)$ are polynomial, rational, radical, absolute value, exponential, or logarithmic functions presented in different forms. Justifies why the $x$ -coordinates of the points of intersection are solutions to the equation $f(x)=g(x)$ .	Interprets solutions to $f(x)=g(x)$ , where $f(x)$ and $g(x)$ are polynomial, rational, radical, absolute value, exponential, or logarithmic functions presented in different forms, in reference to context.



## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Functions</b>					
Detailed	F-IF.B [4 to 5]; F-IF.C [9]	Interprets key features of graphs and tables that model a linear function. Sketches graphs showing key features, given a verbal description of a linear relationship.	Interprets key features of graphs and tables that model a quadratic function. Sketches graphs showing key features, given a verbal description of a quadratic relationship.	Interprets key features of graphs and tables that model a function that is neither linear nor quadratic. Sketches graphs showing key features, given a verbal description of a relationship that is not linear or quadratic.	Interprets complex features of a function modeling a real-world context, given a verbal description.
Detailed	F-IF.B [6]	Calculates and interprets the average rate of change of a simple rational function over a specified interval from a graph of the function.	Calculates and interprets the average rate of change of a polynomial or radical function over a specified interval. Estimates the rate of change from a graph of a function.	Calculates and interprets the average rate of change of a logarithmic or trigonometric function over a specified interval. Estimates the rate of change from a graph.	Compares the average rate of change of two non-linear and non-quadratic functions over a specified interval.
Detailed	F-IF.C [7c and 7e]; F-IF.C [8b]	Graphs quadratic functions and identifies zeroes and describes end behavior. Graphs simple exponential functions and identifies intercepts and end behavior.	Chooses the graph of a polynomial function (degree 3 or higher) that matches given key features. Graphs complex exponential functions and simple logarithmic and trigonometric functions and describes key features.	Graphs a polynomial function (degree 3 or higher); correctly identifies zeroes and describes end behavior. Graphs any exponential or logarithmic function and describes key features. Graphs trigonometric functions with at most 2 transformations.	Identifies additional features (such as multiplicity of zeroes, locations of minimums and maximums, domain and range appropriate to a context, or intervals where the function is increasing or decreasing) for a polynomial function of degree 3 or higher. Graphs trigonometric functions with 3 or more transformations.
Detailed	F-BF.A [1a to 1b]	Adds a constant to a function or multiplies a function by a constant to model a real-world context.	Applies arithmetic operations to multiple linear or exponential functions to build a new function to model a real-world context.	Combines standard functions using arithmetic operations.	Determines whether combining two functions is appropriate to a context, and performs the correct operations.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	F-BF.B [3]	For a linear and exponential function, $f(x)$ , identifies the effect on the graph of replacing $f(x)$ with $f(x) + k$ , $k(f(x))$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative). Estimates the value of $k$ given the graphs. Compares two functions of the same kind that differ by a transformation, and identifies the transformation.	For quadratic and logarithmic functions, $f(x)$ , identifies the effect on the graph of replacing $f(x)$ with $f(x) + k$ , $k(f(x))$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative). Estimates the value of $k$ given the graphs. Compares two functions of the same kind that differ by a transformation, and identifies the transformation.	For any function, $f(x)$ , identifies the effect on the graph of replacing $f(x)$ with $f(x) + k$ , $k(f(x))$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative). Estimates the value of $k$ given the graphs. Compares two functions of the same kind that differ by a transformation, and identifies the transformation.	Recognizes even and odd functions from their graphs and algebraic expressions.
Detailed	F-BF.B [4a]	Finds inverse functions for linear functions. Identifies whether a function has an inverse from its graph.	Identifies whether a function has an inverse from any representation.	Finds the inverse function for a simple non-linear function, if it exists.	Restricts the domain of a function in order to find its inverse.
Detailed	F-IF.A [3]; F-LE.A [2]	Identifies the parts of a recursive function or sequence.	Defines and expresses a recursive sequence as a function, constructs a linear function (multi-step) given a graph, a description of a relationship, or two input-output pairs.	Recognizes that sequences are functions. Recognizes that a sequence has a domain, which is the subset of integers, and can generate a sequence given a recursive function, constructs a linear function (multi-step) given a graph, a description of a relationship, or two input-output pairs.	Applies the ideas of sequences being functions to real world contexts.
Detailed	F-LE.A [4]	Evaluates a logarithm using technology.	Expresses a logarithmic expression (with no variables) in equivalent exponential form.	Expresses the solution to $ab^{(ct)}=d$ as a logarithm (where $b$ is 2, 10, or $e$ ). Evaluates a logarithm using technology.	Applies logarithms to solve for variables in exponents for contextual problems (such as continuous interest or uninhibited growth/decay).

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	F-TF.A [1]	Knows that a full rotation of a circle is $2\pi$ radians.	Locates a radian measure between 0 and $2\pi$ on a unit circle.	Locates any radian measure on a unit circle.	Explains that the radian measure of an angle is equivalent to the length of the arc on the unit circle subtended by the angle.
Detailed	F-TF.A [2]	Identifies the sine and cosine of angles in the first quadrant of a unit circle. Recognizes that the coordinates of any point on the unit circle may be defined as $(\cos \theta, \sin \theta)$ .	Identifies the sine and cosine of angles on the unit circle.	Explains that one can travel around the unit circle any real number of units and arrive at a set of coordinates that defines trigonometric functions for all real numbers.	Explains that one can travel around any circle any real number of units and arrive at a set of coordinates that defines trigonometric functions for all real numbers.
Detailed	F-TF.B [5]	Identifies the amplitude, frequency, and midline of a given trigonometric function.	Writes a trigonometric function (given a specific amplitude, frequency, and midline).	Writes an appropriate trigonometric function to model a real-world context (where the information about amplitude, frequency, and midline are given clearly).	Analyzes a real-world context to determine which information can be used to write a trigonometric function. Uses this analysis to model the context with a trigonometric function.
Detailed	F-TF.C [8]	Shows that the Pythagorean Identity is valid, given numerical values for the identity.	Finds an unknown trigonometric value by using the Pythagorean Identity.	Proves the Pythagorean Identity $\sin^2 x + \cos^2 x = 1$ , and uses it to find basic trig values, given one trig value and the quadrant.	Extends the Pythagorean Identity to prove that trig ratios are constant for similar triangles.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
<b>Geometry</b>					
Detailed	G-GPE.A [2]	Identifies the directrix and focus of a parabola when given its graph.	Identifies the directrix and focus of a parabola when given the equation.	Derives the equation of a parabola, given a focus and directrix.	Justifies conditions for when a point is or is not part of a parabola, given information about the focus and directrix.
<b>Statistics</b>					
Detailed	S-ID.A [4]	Labels a blank normal distribution curve with the appropriate mean and standard deviations.	Uses the Empirical Rule to label a blank normal distribution curve with the appropriate percentages (68%-95%-99.7%).	Uses the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages using the Empirical Rule.	Additionally, recognizes that there are data sets for which such a procedure is not appropriate. Uses technology or tables to estimate areas under the normal curve.
Detailed	S-ID.B [6a]	Creates a scatter plot of bivariate data.	Determines if a plotted data set is approximately linear.	Creates a scatter plot of bivariate data and estimates an exponential (with domains not in the integers) or trigonometric function that fits the data. Uses this function to solve problems in the context of the data.	Compares the fit of different functions to data and determines which function has the best fit.
Detailed	S-IC.A [1]	Describes why a particular sample is not representative.	Describes why a particular sample is not random. Determines what inferences can be made about a population from a given representative random sample.	Explains why a representative random sample is appropriate to make inferences about a population. Explains how a sample may be random, but not representative of the underlying population, or how a sample may be representative, but not random.	Explains how to select a representative random sample from a particular population.
Detailed	S-IC.A [2]	Given two results, decides which is more consistent with a specific data-generating process.	Explains why a specific model is not consistent with given data-generated results.	Decides if a specified model is consistent with results from a given data-generating process, such as a simulation.	Designs a data-generating process (e.g., simulation) to evaluate whether a specified model is consistent with given results.

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	S-IC.B [3]	Identifies whether random sampling was used in a particular study.	Matches a given study to its category: survey, observational study, or experiment.	Explains the differences among sample surveys, experiments, and observational studies. Explains how randomization relates to each type of study.	Explains the purposes and limitations of sample surveys, experiments, and observational studies. Designs an appropriate study for a given situation.
Detailed	S-IC.B [4]	Chooses an interval that represents possible population proportions or means, for a particular sample proportion or mean.	Interprets whether a particular proportion is possible, given a sample proportion or mean in context and a margin of error.	Uses $\pm 2$ standard deviations from a sample proportion or mean to create an interval that can be used to estimate possible population proportion or mean.	Develops a margin of error for a given survey through use of a simulation model.
Detailed	S-IC.B [5]	Determines if the differences between two treatments are typically positive, negative, or centered about zero, given results of a randomized experiment comparing the treatments.	Calculates statistics related to a randomized experiment using two treatments.	Compares the results of a randomized experiment using two treatments to simulations in order to determine if differences in the treatments are significant.	Designs and runs a simulation to build a distribution for possible differences, for a given experiment.
Detailed	S-IC.B [6]	Determines the question being investigated and the groups that were considered, given a report based on data.	Determines the way randomization was used in the design and the results, given a report based on data.	Evaluates the reasonableness of a report based on data.	Interprets the consequences of the results, given a report based on data, and discusses the statistical validity of the findings.
Detailed	S-CP.A [1]	Identifies an event as a subset of a set of outcomes (a sample space).	Identifies or shows relationships between sets of events, using Venn diagrams.	Describes events as subsets of sample space using characteristics of the outcomes, or using appropriate set language and appropriate set representations (unions, intersections, or complements).	Using complex representations, makes sense of outcomes in context. (For example: unions of all subsets would equal the sample space).

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	S-CP.A [2]	Calculates probabilities for events (including joint probabilities).	Identifies whether events are independent or dependent.	Understands that two events, $A$ and $B$ , are independent, if the probability of $A$ and $B$ occurring together is the product of their probabilities, and uses this characterization to determine if they are independent.	Contrasts several events in a sample space and determines if they are independent by calculating the event probabilities.
Detailed	S-CP.A [3]	Understands conditional probability and how it applies to real life events.	Calculates conditional probabilities.	Determines the independence of $A$ and $B$ using conditional probabilities.	Identifies and interprets independence of events in contextual problems, using conditional probabilities.
Detailed	S-CP.A [4]	Constructs two-way frequency tables of data.	Approximates conditional probabilities using two-way frequency tables.	Interprets two-way frequency tables of data and uses them to decide if events are independent.	Constructs, interprets, and finds missing values of a two-way frequency table.
Detailed	S-CP.A [5]	Expresses conditional probabilities and independence using probability notation.	Interprets conditional probabilities and independence in context.	Recognizes and explains the concepts of conditional probability and independence, in everyday language and everyday situations.	Using concepts of conditional probability and independence, extrapolates the meaning behind probabilities that were calculated from real-world context.
Detailed	S-CP.B [6]	Distinguishes between compound and conditional probability scenarios.	Finds the conditional probability of $A$ , given $B$ as the fraction of $B$ 's outcomes that also belong to $A$ , using a two-way table, Venn diagram, or tree diagram.	Interprets conditional probability in terms of a uniform probability model.	Compares and contrasts conditional probabilities and compound probabilities. (For example: from a table, determines the probability of getting the flu, and then compares that to the probability of getting the flu given the individual never washes their hands).

## Appendix D. Performance Level Descriptors (PLDs)

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
Detailed	S-CP.B [7]	Recalls the Addition Rule.	Applies the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ to calculate a probability, in a given context.	Applies the general Addition Rule to a uniform probability model, and interprets the answer in terms of the model.	Applies the Addition Rule to different representations of probability models (Venn diagram, tree diagram, and two-way tables), and interprets the answer in an abstract or real-world context.

## **Appendix E – Test Blueprints**



## Appendix E. Test Blueprints


**AzMERIT**

 Arizona's Statewide Achievement Assessment  
for English Language Arts and Mathematics

**English Language Arts  
Assessment Blueprint**

Grade 3		
Strands	Min	Max
Reading Standards for Literature	26%	35%
Reading Standards for Informational Text	26%	35%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 4		
Strands	Min	Max
Reading Standards for Literature	26%	35%
Reading Standards for Informational Text	26%	35%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 5		
Strands	Min	Max
Reading Standards for Literature	26%	35%
Reading Standards for Informational Text	26%	35%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 6		
Strands	Min	Max
Reading Standards for Literature	24%	31%
Reading Standards for Informational Text	30%	38%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 7		
Strands	Min	Max
Reading Standards for Literature	24%	31%
Reading Standards for Informational Text	30%	38%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 8		
Strands	Min	Max
Reading Standards for Literature	24%	31%
Reading Standards for Informational Text	30%	38%
Listening Comprehension (Informational)	0%	13%
Language	13%	19%
Writing	17%	19%

Grade 9		
Strands	Min	Max
Reading Standards for Literature	23%	30%
Reading Standards for Informational Text	31%	40%
Listening Comprehension (Informational)	0%	13%
Language	13%	18%
Writing	16%	18%

Grade 10		
Strands	Min	Max
Reading Standards for Literature	23%	30%
Reading Standards for Informational Text	31%	40%
Listening Comprehension (Informational)	0%	13%
Language	13%	18%
Writing	16%	18%

Grade 11		
Strands	Min	Max
Reading Standards for Literature	23%	30%
Reading Standards for Informational Text	31%	40%
Listening Comprehension (Informational)	0%	13%
Language	13%	18%
Writing	16%	18%

Listening Standards will only be assessed on the computer-based assessment.

In Grades 3-5 some items in the Reading and Language Strands will also be aligned to the standards for Reading: Foundational Skills.

**Percentage of Points by Depth of Knowledge Level**

Grade	DOK Level 1	DOK Level 2	DOK Level 3	DOK Level 4
3-11	10%-20%	50%-60%	15%-25%	16%-19% (Writing)

## Appendix E. Test Blueprints


**AzMERIT**

 Arizona's Statewide Achievement Assessment  
for English Language Arts and Mathematics

**Mathematics  
Assessment Blueprint**

Grade 3		
Domain	Min.	Max.
Operations and Algebraic Thinking & Numbers in Base Ten	49%	53%
Number and Operations-Fractions	18%	22%
Measurement and Data & Geometry	26%	30%

Grade 6		
Domain	Min.	Max.
Ratio and Proportional Relationships	19%	23%
Expressions and Equations	29%	33%
Geometry & Statistics and Probability	17%	21%
The Number System	25%	29%

Algebra I		
Conceptual Categories	Min.	Max.
Algebra	40%	44%
Functions	36%	40%
Statistics	17%	21%

Percentage of Points by Depth of Knowledge Level			
Grade	DOK Level 1	DOK Level 2	DOK Level 3
3-11	10%-20%	60%-70%	12%-30%

Grade 4		
Domain	Min.	Max.
Operations and Algebraic Thinking	22%	26%
Number and Operations in Base Ten	24%	28%
Number and Operations-Fractions	29%	33%
Measurement and Data & Geometry	15%	19%

Grade 7		
Domain	Min.	Max.
Ratio and Proportional Relationships	19%	23%
The Number System	19%	23%
Expressions and Equations	23%	27%
Geometry	12%	16%
Statistics and Probability	15%	19%

Geometry		
Domain	Min.	Max.
Congruence	23%	27%
Similarity, Right Triangles, and Trigonometry	27%	31%
Circles & Geometric Measurement & Geometric Properties with Equations	23%	27%
Modeling with Geometry	17%	21%

Grade 5		
Domain	Min.	Max.
Numbers and Operations - Fractions	31%	35%
Number and Operations in Base Ten & Algebraic Thinking	38%	42%
Measurement and Data & Geometry	24%	28%

Grade 8		
Domain	Min.	Max.
Functions	21%	25%
Expressions and Equations	32%	36%
Geometry	23%	27%
Statistics and Probability & The Number System	15%	19%

Algebra II		
Conceptual Categories	Min.	Max.
Algebra	34%	38%
Functions	32%	36%
Statistics	27%	31%

Within a test, approximately 70% of the assessment will be on major content within that grade or course.

## **Appendix F – Summary of Ordered Item Booklets**

Table F. Summary of Ordered Item Booklets by Test

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 3 ELA	1	1	-1.79	0.02	98	AIMS Approaches;
Grade 3 ELA	2	1	-1.37	0.04	93	
Grade 3 ELA	3	1	-1.19	0.01	90	
Grade 3 ELA	4	1	-1.00	0.03	85	
Grade 3 ELA	5	1	-0.92	0.01	82	
Grade 3 ELA	6	1	-0.86	0.01	81	
Grade 3 ELA	7	1	-0.77	0.01	78	
Grade 3 ELA	8	1	-0.75	0.01	78	
Grade 3 ELA	9	1	-0.73	0.01	77	
Grade 3 ELA	10	1	-0.65	0.01	74	AIMS Meets
Grade 3 ELA	11	1	-0.48	0.01	70	
Grade 3 ELA	12	1	-0.46	0.01	68	
Grade 3 ELA	13	1	-0.40	0.01	67	
Grade 3 ELA	14	1	-0.30	0.04	62	SBAC Level 2;
Grade 3 ELA	15	1	-0.19	0.01	59	
Grade 3 ELA	16	1	-0.19	0.01	59	
Grade 3 ELA	17	1	-0.17	0.01	59	
Grade 3 ELA	18	1	-0.09	0.01	56	
Grade 3 ELA	19	1	-0.01	0.01	53	
Grade 3 ELA	20	1	0.05	0.01	49	
Grade 3 ELA	21	1	0.12	0.01	48	
Grade 3 ELA	22	1	0.15	0.01	46	
Grade 3 ELA	23	1	0.22	0.01	43	
Grade 3 ELA	24	2	0.26	0.01	43	
Grade 3 ELA	25	1	0.29	0.01	41	
Grade 3 ELA	26	1	0.33	0.01	40	
Grade 3 ELA	27	1	0.36	0.01	38	SBAC Level 3;
Grade 3 ELA	28	1	0.42	0.01	36	
Grade 3 ELA	29	2	0.46	0.03	35	
Grade 3 ELA	30	1	0.51	0.01	33	
Grade 3 ELA	31	1	0.57	0.01	30	
Grade 3 ELA	32	1	0.60	0.01	30	
Grade 3 ELA	33	1	0.60	0.01	30	
Grade 3 ELA	34	2	0.61	0.03	30	
Grade 3 ELA	35	1	0.65	0.05	29	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 3 ELA	36	1	0.76	0.01	24	
Grade 3 ELA	37	1	0.79	0.01	24	
Grade 3 ELA	38	2	0.88	0.01	21	
Grade 3 ELA	39	1	0.92	0.01	20	
Grade 3 ELA	40	1	0.93	0.01	20	
Grade 3 ELA	41	2	0.98	0.01	18	
Grade 3 ELA	42	1	0.99	0.01	18	SBAC Level 4;
Grade 3 ELA	43	1	1.10	0.01	15	
Grade 3 ELA	44	1	1.14	0.01	15	
Grade 3 ELA	45	2	1.21	0.01	12	AIMS Exceeds;
Grade 3 ELA	46	2	1.27	0.01	12	
Grade 3 ELA	47	1	1.31	0.01	11	
Grade 3 ELA	48	1	1.35	0.01	10	
Grade 3 ELA	49	2	1.36	0.01	10	
Grade 3 ELA	50	1	1.43	0.05	9	
Grade 3 ELA	51	2	1.50	0.01	8	
Grade 3 ELA	52	1	1.51	0.01	8	
Grade 3 ELA	53	1	1.58	0.05	7	
Grade 3 ELA	54	1	1.70	0.01	5	
Grade 3 ELA	55	2	1.72	0.01	5	
Grade 3 ELA	56	1	1.75	0.01	5	
Grade 3 ELA	57	2	1.76	0.01	5	
Grade 3 ELA	58	1	1.77	0.01	5	
Grade 3 ELA	59	1	1.90	0.01	4	
Grade 3 ELA	60	1	1.92	0.01	4	
Grade 3 ELA	61	1	2.07	0.06	3	
Grade 3 ELA	62	1	2.39	0.06	1	
Grade 3 ELA	63	1	2.91	0.07	0	
Grade 3 ELA	64	1	3.16	0.02	0	
Grade 3 ELA	65	3	3.60	0.03	0	
Grade 3 ELA	66	3	3.62	0.03	0	
Grade 3 ELA	67	2	5.54	0.05	0	
Grade 4 ELA	1	1	-1.59	0.05	98	
Grade 4 ELA	2	1	-1.47	0.02	97	
Grade 4 ELA	3	1	-1.22	0.01	95	AIMS Approaches;
Grade 4 ELA	4	1	-1.11	0.01	93	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 4 ELA	5	1	-0.85	0.01	89	
Grade 4 ELA	6	1	-0.62	0.01	83	
Grade 4 ELA	7	1	-0.61	0.01	82	
Grade 4 ELA	8	1	-0.56	0.01	82	
Grade 4 ELA	9	1	-0.54	0.01	81	
Grade 4 ELA	10	1	-0.45	0.03	79	
Grade 4 ELA	11	1	-0.30	0.06	75	
Grade 4 ELA	12	1	-0.20	0.01	71	AIMS Meets;
Grade 4 ELA	13	1	-0.09	0.01	67	
Grade 4 ELA	14	1	-0.06	0.01	67	
Grade 4 ELA	15	1	-0.03	0.01	64	SBAC Level 2
Grade 4 ELA	16	1	0.07	0.01	61	NAEP Basic;
Grade 4 ELA	17	1	0.09	0.01	61	
Grade 4 ELA	18	1	0.10	0.05	61	
Grade 4 ELA	19	1	0.14	0.01	57	
Grade 4 ELA	20	1	0.16	0.03	57	
Grade 4 ELA	21	1	0.20	0.01	56	
Grade 4 ELA	22	1	0.31	0.01	51	
Grade 4 ELA	23	1	0.33	0.01	51	
Grade 4 ELA	24	1	0.33	0.01	51	
Grade 4 ELA	25	1	0.43	0.01	47	SBAC Level 3
Grade 4 ELA	26	1	0.45	0.01	46	
Grade 4 ELA	27	1	0.47	0.01	44	
Grade 4 ELA	28	1	0.50	0.01	44	
Grade 4 ELA	29	1	0.52	0.01	42	
Grade 4 ELA	30	1	0.54	0.01	42	
Grade 4 ELA	31	1	0.55	0.01	41	
Grade 4 ELA	32	1	0.60	0.01	39	
Grade 4 ELA	33	1	0.66	0.01	37	
Grade 4 ELA	34	1	0.67	0.01	37	
Grade 4 ELA	35	1	0.74	0.01	34	
Grade 4 ELA	36	1	0.80	0.01	32	
Grade 4 ELA	37	2	0.83	0.01	30	
Grade 4 ELA	38	1	0.88	0.01	28	NAEP Proficient;
Grade 4 ELA	39	1	0.89	0.01	27	
Grade 4 ELA	40	1	0.90	0.01	27	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 4 ELA	41	1	<b>0.96</b>	0.01	25	
Grade 4 ELA	42	1	<b>1.09</b>	0.01	20	
Grade 4 ELA	43	1	<b>1.09</b>	0.01	20	
Grade 4 ELA	44	2	<b>1.13</b>	0.03	18	SBAC Level 4
Grade 4 ELA	45	2	<b>1.20</b>	0.01	17	
Grade 4 ELA	46	2	<b>1.21</b>	0.01	17	
Grade 4 ELA	47	2	<b>1.27</b>	0.01	16	
Grade 4 ELA	48	1	<b>1.30</b>	0.01	14	
Grade 4 ELA	49	2	<b>1.32</b>	0.01	13	
Grade 4 ELA	50	1	<b>1.32</b>	0.01	13	
Grade 4 ELA	51	2	<b>1.39</b>	0.01	13	
Grade 4 ELA	52	1	<b>1.45</b>	0.05	10	
Grade 4 ELA	53	1	<b>1.56</b>	0.01	8	AIMS Exceeds;
Grade 4 ELA	54	1	<b>1.68</b>	0.01	6	
Grade 4 ELA	55	2	<b>1.77</b>	0.03	5	
Grade 4 ELA	56	1	<b>1.79</b>	0.01	5	
Grade 4 ELA	57	1	<b>1.80</b>	0.01	5	
Grade 4 ELA	58	1	<b>1.89</b>	0.05	5	NAEP Advanced
Grade 4 ELA	59	1	<b>2.21</b>	0.06	2	
Grade 4 ELA	60	2	<b>2.39</b>	0.01	1	
Grade 4 ELA	61	2	<b>2.48</b>	0.01	1	
Grade 4 ELA	62	2	<b>2.73</b>	0.02	1	
Grade 4 ELA	63	2	<b>2.80</b>	0.04	0	
Grade 4 ELA	64	2	<b>3.06</b>	0.02	0	
Grade 4 ELA	65	1	<b>3.82</b>	0.02	0	
Grade 4 ELA	66	3	<b>4.94</b>	0.06	0	
Grade 4 ELA	67	3	<b>5.16</b>	0.06	0	
Grade 5 ELA	1	1	<b>-3.14</b>	0.04	100	
Grade 5 ELA	2	1	<b>-1.36</b>	0.01	96	AIMS Approaches;
Grade 5 ELA	3	1	<b>-1.20</b>	0.01	93	
Grade 5 ELA	4	1	<b>-1.06</b>	0.01	90	
Grade 5 ELA	5	1	<b>-0.90</b>	0.01	87	
Grade 5 ELA	6	1	<b>-0.78</b>	0.04	84	
Grade 5 ELA	7	1	<b>-0.73</b>	0.03	82	
Grade 5 ELA	8	2	<b>-0.70</b>	0.01	82	
Grade 5 ELA	9	1	<b>-0.49</b>	0.01	75	AIMS Meets;

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 5 ELA	10	1	-0.37	0.01	70	
Grade 5 ELA	11	1	-0.37	0.06	70	
Grade 5 ELA	12	1	-0.29	0.01	69	
Grade 5 ELA	13	1	-0.25	0.01	66	SBAC Level 2
Grade 5 ELA	14	1	-0.15	0.01	63	
Grade 5 ELA	15	1	-0.13	0.01	63	
Grade 5 ELA	16	1	-0.10	0.01	59	
Grade 5 ELA	17	1	-0.08	0.01	59	
Grade 5 ELA	18	1	-0.03	0.04	59	
Grade 5 ELA	19	1	0.10	0.05	52	
Grade 5 ELA	20	1	0.14	0.01	51	
Grade 5 ELA	21	1	0.30	0.01	44	
Grade 5 ELA	22	1	0.33	0.01	44	SBAC Level 3
Grade 5 ELA	23	1	0.35	0.01	42	
Grade 5 ELA	24	1	0.35	0.01	42	
Grade 5 ELA	25	1	0.40	0.01	40	
Grade 5 ELA	26	1	0.40	0.01	40	
Grade 5 ELA	27	1	0.45	0.01	37	
Grade 5 ELA	28	1	0.46	0.01	37	
Grade 5 ELA	29	1	0.51	0.01	37	
Grade 5 ELA	30	1	0.51	0.01	37	
Grade 5 ELA	31	1	0.63	0.01	30	
Grade 5 ELA	32	1	0.63	0.01	30	
Grade 5 ELA	33	1	0.63	0.01	30	
Grade 5 ELA	34	1	0.69	0.01	28	
Grade 5 ELA	35	1	0.69	0.01	27	
Grade 5 ELA	36	1	0.76	0.05	25	
Grade 5 ELA	37	2	0.82	0.01	24	
Grade 5 ELA	38	1	0.83	0.01	24	
Grade 5 ELA	39	1	0.85	0.01	22	
Grade 5 ELA	40	1	0.91	0.01	20	
Grade 5 ELA	41	1	0.94	0.01	19	
Grade 5 ELA	42	1	0.95	0.01	19	
Grade 5 ELA	43	1	1.00	0.01	18	
Grade 5 ELA	44	1	1.06	0.01	16	
Grade 5 ELA	45	1	1.15	0.01	14	



Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 5 ELA	46	1	1.15	0.01	14	SBAC Level 4
Grade 5 ELA	47	2	1.18	0.03	12	
Grade 5 ELA	48	2	1.33	0.01	9	
Grade 5 ELA	49	1	1.45	0.05	7	AIMS Exceeds;
Grade 5 ELA	50	1	1.61	0.05	4	
Grade 5 ELA	51	1	1.64	0.01	4	
Grade 5 ELA	52	2	1.70	0.01	4	
Grade 5 ELA	53	1	1.80	0.01	3	
Grade 5 ELA	54	1	1.85	0.01	2	
Grade 5 ELA	55	1	1.86	0.01	2	
Grade 5 ELA	56	2	1.86	0.01	2	
Grade 5 ELA	57	2	1.96	0.01	2	
Grade 5 ELA	58	1	1.97	0.01	1	
Grade 5 ELA	59	2	2.01	0.01	1	
Grade 5 ELA	60	1	2.04	0.01	1	
Grade 5 ELA	61	1	2.12	0.06	1	
Grade 5 ELA	62	2	2.38	0.02	0	
Grade 5 ELA	63	2	2.46	0.02	0	
Grade 5 ELA	64	2	2.76	0.02	0	
Grade 5 ELA	65	2	2.87	0.02	0	
Grade 5 ELA	66	1	3.81	0.10	0	
Grade 5 ELA	67	3	4.08	0.04	0	
Grade 5 ELA	68	3	4.13	0.04	0	
Grade 6 ELA	1	1	-1.81	0.02	99	
Grade 6 ELA	2	1	-1.67	0.06	99	AIMS Approaches;
Grade 6 ELA	3	1	-1.28	0.05	95	
Grade 6 ELA	4	1	-1.11	0.01	91	
Grade 6 ELA	5	1	-1.04	0.04	89	
Grade 6 ELA	6	1	-0.92	0.01	87	
Grade 6 ELA	7	1	-0.89	0.01	87	
Grade 6 ELA	8	1	-0.86	0.01	85	
Grade 6 ELA	9	1	-0.69	0.01	80	
Grade 6 ELA	10	1	-0.64	0.04	78	AIMS Meets;
Grade 6 ELA	11	1	-0.55	0.01	76	
Grade 6 ELA	12	1	-0.39	0.05	70	SBAC Level 2
Grade 6 ELA	13	1	-0.29	0.01	67	NAEP Basic;

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 6 ELA	14	1	-0.21	0.01	64	
Grade 6 ELA	15	1	-0.17	0.01	62	
Grade 6 ELA	16	1	-0.12	0.01	61	
Grade 6 ELA	17	1	-0.11	0.01	61	
Grade 6 ELA	18	1	-0.07	0.01	59	
Grade 6 ELA	19	1	0.04	0.01	54	
Grade 6 ELA	20	1	0.06	0.01	53	
Grade 6 ELA	21	2	0.07	0.01	53	
Grade 6 ELA	22	1	0.12	0.01	51	
Grade 6 ELA	23	1	0.17	0.01	50	
Grade 6 ELA	24	1	0.27	0.01	47	
Grade 6 ELA	25	1	0.32	0.01	43	
Grade 6 ELA	26	1	0.33	0.01	43	
Grade 6 ELA	27	1	0.36	0.01	43	SBAC Level 3
Grade 6 ELA	28	1	0.49	0.01	37	
Grade 6 ELA	29	1	0.56	0.01	35	
Grade 6 ELA	30	1	0.58	0.01	34	
Grade 6 ELA	31	1	0.63	0.01	34	
Grade 6 ELA	32	1	0.66	0.01	31	
Grade 6 ELA	33	1	0.68	0.01	31	
Grade 6 ELA	34	1	0.69	0.01	31	
Grade 6 ELA	35	1	0.78	0.01	28	NAEP Proficient;
Grade 6 ELA	36	1	0.80	0.01	28	
Grade 6 ELA	37	1	0.81	0.01	28	
Grade 6 ELA	38	1	0.93	0.01	23	
Grade 6 ELA	39	1	0.96	0.01	22	
Grade 6 ELA	40	2	0.97	0.04	22	
Grade 6 ELA	41	1	0.99	0.01	22	
Grade 6 ELA	42	2	1.00	0.01	22	
Grade 6 ELA	43	2	1.00	0.04	22	
Grade 6 ELA	44	1	1.01	0.01	21	
Grade 6 ELA	45	1	1.02	0.01	21	
Grade 6 ELA	46	2	1.02	0.01	21	
Grade 6 ELA	47	1	1.05	0.01	19	
Grade 6 ELA	48	1	1.16	0.01	17	
Grade 6 ELA	49	1	1.19	0.01	17	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 6 ELA	50	2	1.23	0.04	15	
Grade 6 ELA	51	1	1.26	0.01	14	
Grade 6 ELA	52	1	1.32	0.01	14	AIMS Exceeds
Grade 6 ELA	53	1	1.43	0.05	12	SBAC Level 4
Grade 6 ELA	54	1	1.59	0.01	9	
Grade 6 ELA	55	2	1.74	0.01	7	
Grade 6 ELA	56	2	1.76	0.01	6	
Grade 6 ELA	57	2	1.88	0.04	5	
Grade 6 ELA	58	2	2.03	0.01	4	NAEP Advanced
Grade 6 ELA	59	2	2.11	0.01	3	
Grade 6 ELA	60	1	2.20	0.01	3	
Grade 6 ELA	61	1	2.22	0.01	2	
Grade 6 ELA	62	2	2.51	0.02	1	
Grade 6 ELA	63	2	2.69	0.02	1	
Grade 6 ELA	64	1	2.72	0.07	1	
Grade 6 ELA	65	3	3.85	0.03	0	
Grade 6 ELA	66	3	3.87	0.03	0	
Grade 6 ELA	67	2	5.40	0.05	0	
Grade 7 ELA	1	1	-1.58	0.02	97	
Grade 7 ELA	2	1	-1.42	0.01	96	AIMS Approaches
Grade 7 ELA	3	1	-1.14	0.04	91	
Grade 7 ELA	4	1	-1.11	0.01	91	
Grade 7 ELA	5	1	-0.83	0.04	85	
Grade 7 ELA	6	1	-0.77	0.01	83	
Grade 7 ELA	7	1	-0.60	0.01	79	
Grade 7 ELA	8	1	-0.59	0.01	78	AIMS Meets;
Grade 7 ELA	9	1	-0.38	0.01	71	
Grade 7 ELA	10	1	-0.37	0.01	71	
Grade 7 ELA	11	1	-0.27	0.01	68	
Grade 7 ELA	12	1	-0.18	0.06	65	
Grade 7 ELA	13	1	-0.17	0.06	65	SBAC Level 2
Grade 7 ELA	14	1	-0.11	0.01	62	
Grade 7 ELA	15	1	-0.07	0.01	59	
Grade 7 ELA	16	1	-0.04	0.01	59	
Grade 7 ELA	17	1	-0.03	0.01	59	
Grade 7 ELA	18	1	-0.02	0.01	59	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 7 ELA	19	1	0.00	0.01	56	
Grade 7 ELA	20	1	0.05	0.01	56	
Grade 7 ELA	21	1	0.11	0.01	52	
Grade 7 ELA	22	1	0.12	0.01	52	
Grade 7 ELA	23	2	0.17	0.01	49	
Grade 7 ELA	24	1	0.18	0.01	49	
Grade 7 ELA	25	1	0.24	0.01	47	
Grade 7 ELA	26	1	0.27	0.01	46	
Grade 7 ELA	27	1	0.32	0.01	44	
Grade 7 ELA	28	1	0.38	0.03	42	
Grade 7 ELA	29	1	0.45	0.01	39	
Grade 7 ELA	30	1	0.48	0.01	37	SBAC Level 3
Grade 7 ELA	31	1	0.51	0.01	36	
Grade 7 ELA	32	1	0.53	0.01	36	
Grade 7 ELA	33	1	0.57	0.05	34	
Grade 7 ELA	34	1	0.58	0.01	34	
Grade 7 ELA	35	1	0.58	0.01	34	
Grade 7 ELA	36	1	0.61	0.01	33	
Grade 7 ELA	37	2	0.61	0.03	33	
Grade 7 ELA	38	1	0.72	0.05	30	
Grade 7 ELA	39	1	0.74	0.01	28	
Grade 7 ELA	40	1	0.77	0.01	27	
Grade 7 ELA	41	1	0.79	0.01	27	
Grade 7 ELA	42	1	0.80	0.05	27	
Grade 7 ELA	43	2	0.86	0.01	25	
Grade 7 ELA	44	1	0.87	0.05	24	
Grade 7 ELA	45	2	0.95	0.01	22	
Grade 7 ELA	46	1	1.04	0.01	19	
Grade 7 ELA	47	1	1.07	0.01	18	
Grade 7 ELA	48	2	1.08	0.01	18	
Grade 7 ELA	49	2	1.09	0.03	18	
Grade 7 ELA	50	1	1.21	0.01	15	
Grade 7 ELA	51	1	1.21	0.01	14	
Grade 7 ELA	52	1	1.23	0.01	14	AIMS Exceeds;
Grade 7 ELA	53	1	1.35	0.05	12	
Grade 7 ELA	54	1	1.45	0.01	10	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 7 ELA	55	2	1.56	0.01	8	
Grade 7 ELA	56	1	1.59	0.01	8	SBAC Level 4
Grade 7 ELA	57	2	1.66	0.01	7	
Grade 7 ELA	58	1	1.71	0.01	6	
Grade 7 ELA	59	1	1.82	0.01	5	
Grade 7 ELA	60	2	1.84	0.01	5	
Grade 7 ELA	61	2	1.90	0.01	4	
Grade 7 ELA	62	2	1.91	0.01	4	
Grade 7 ELA	63	1	1.93	0.01	4	
Grade 7 ELA	64	1	2.09	0.01	3	
Grade 7 ELA	65	2	2.19	0.01	2	
Grade 7 ELA	66	1	2.49	0.01	1	
Grade 7 ELA	67	3	3.86	0.03	0	
Grade 7 ELA	68	3	3.88	0.03	0	
Grade 8 ELA	1	1	-1.66	0.02	98	
Grade 8 ELA	2	1	-1.64	0.02	98	
Grade 8 ELA	3	1	-1.58	0.02	97	
Grade 8 ELA	4	1	-1.52	0.07	97	
Grade 8 ELA	5	1	-1.47	0.02	97	AIMS Approaches;
Grade 8 ELA	6	1	-1.24	0.01	94	
Grade 8 ELA	7	1	-1.16	0.04	93	
Grade 8 ELA	8	1	-1.04	0.04	90	
Grade 8 ELA	9	1	-0.92	0.01	88	
Grade 8 ELA	10	1	-0.89	0.01	87	
Grade 8 ELA	11	1	-0.82	0.01	85	
Grade 8 ELA	12	1	-0.73	0.04	82	
Grade 8 ELA	13	1	-0.62	0.06	80	
Grade 8 ELA	14	1	-0.56	0.06	77	
Grade 8 ELA	15	1	-0.42	0.01	73	
Grade 8 ELA	16	1	-0.36	0.05	72	NAEP Basic; AIMS Meets; SBAC Level 2;
Grade 8 ELA	17	1	-0.16	0.01	63	
Grade 8 ELA	18	2	-0.10	0.01	61	
Grade 8 ELA	19	1	-0.06	0.01	60	
Grade 8 ELA	20	2	-0.05	0.01	60	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 8 ELA	21	1	-0.04	0.01	60	
Grade 8 ELA	22	1	-0.02	0.01	58	
Grade 8 ELA	23	1	0.02	0.01	57	
Grade 8 ELA	24	1	0.17	0.01	50	
Grade 8 ELA	25	1	0.18	0.01	50	
Grade 8 ELA	26	1	0.19	0.01	50	
Grade 8 ELA	27	2	0.20	0.01	49	
Grade 8 ELA	28	2	0.27	0.01	47	
Grade 8 ELA	29	1	0.33	0.01	44	
Grade 8 ELA	30	1	0.34	0.01	44	
Grade 8 ELA	31	1	0.36	0.05	42	
Grade 8 ELA	32	1	0.43	0.03	41	SBAC Level 3;
Grade 8 ELA	33	1	0.46	0.05	39	
Grade 8 ELA	34	1	0.50	0.05	37	
Grade 8 ELA	35	1	0.57	0.01	36	
Grade 8 ELA	36	1	0.60	0.01	34	
Grade 8 ELA	37	1	0.64	0.01	33	
Grade 8 ELA	38	1	0.64	0.01	33	
Grade 8 ELA	39	1	0.67	0.01	31	
Grade 8 ELA	40	2	0.69	0.01	29	
Grade 8 ELA	41	1	0.73	0.01	29	
Grade 8 ELA	42	1	0.74	0.01	29	
Grade 8 ELA	43	1	0.77	0.01	28	NAEP Proficient;
Grade 8 ELA	44	1	0.77	0.01	28	
Grade 8 ELA	45	1	0.82	0.01	27	
Grade 8 ELA	46	1	0.83	0.01	27	
Grade 8 ELA	47	1	0.89	0.01	24	
Grade 8 ELA	48	1	0.94	0.01	24	
Grade 8 ELA	49	1	1.02	0.01	21	
Grade 8 ELA	50	2	1.05	0.03	19	
Grade 8 ELA	51	1	1.06	0.01	18	
Grade 8 ELA	52	1	1.08	0.01	18	
Grade 8 ELA	53	1	1.12	0.01	18	
Grade 8 ELA	54	1	1.16	0.01	15	
Grade 8 ELA	55	2	1.25	0.01	15	
Grade 8 ELA	56	2	1.35	0.01	13	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 8 ELA	57	1	1.37	0.01	13	
Grade 8 ELA	58	1	1.46	0.01	10	
Grade 8 ELA	59	1	1.49	0.01	10	
Grade 8 ELA	60	1	1.59	0.01	8	SBAC Level 4
Grade 8 ELA	61	2	1.69	0.01	6	
Grade 8 ELA	62	1	1.72	0.01	6	AIMS Exceeds;
Grade 8 ELA	63	2	1.75	0.01	6	
Grade 8 ELA	64	1	1.87	0.01	5	
Grade 8 ELA	65	1	2.11	0.01	3	NAEP Advacned
Grade 8 ELA	66	1	2.45	0.06	1	
Grade 8 ELA	67	2	3.27	0.02	0	
Grade 8 ELA	68	2	4.02	0.02	0	
Grade 8 ELA	69	3	4.05	0.03	0	
Grade 8 ELA	70	3	4.41	0.03	0	
Grade 9 ELA	1	1	-1.53	0.02	95	
Grade 9 ELA	2	1	-1.53	0.02	95	
Grade 9 ELA	3	1	-1.14	0.02	87	
Grade 9 ELA	4	1	-0.81	0.04	78	
Grade 9 ELA	5	1	-0.51	0.01	68	
Grade 9 ELA	6	1	-0.50	0.03	67	
Grade 9 ELA	7	1	-0.48	0.01	67	
Grade 9 ELA	8	1	-0.34	0.01	61	
Grade 9 ELA	9	1	-0.33	0.01	60	
Grade 9 ELA	10	1	-0.32	0.08	60	
Grade 9 ELA	11	1	-0.28	0.01	58	
Grade 9 ELA	12	1	-0.26	0.01	58	
Grade 9 ELA	13	1	-0.22	0.01	57	
Grade 9 ELA	14	1	-0.17	0.03	55	
Grade 9 ELA	15	1	-0.17	0.01	55	
Grade 9 ELA	16	1	-0.15	0.01	53	
Grade 9 ELA	17	1	-0.12	0.01	53	
Grade 9 ELA	18	1	-0.04	0.01	50	
Grade 9 ELA	19	1	0.05	0.03	47	
Grade 9 ELA	20	1	0.14	0.01	43	
Grade 9 ELA	21	1	0.16	0.01	41	
Grade 9 ELA	22	1	0.24	0.01	40	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 9 ELA	23	1	0.26	0.01	38	
Grade 9 ELA	24	1	0.31	0.01	37	
Grade 9 ELA	25	1	0.38	0.01	33	
Grade 9 ELA	26	1	0.43	0.01	33	
Grade 9 ELA	27	1	0.49	0.01	30	
Grade 9 ELA	28	1	0.50	0.01	30	
Grade 9 ELA	29	1	0.53	0.01	28	
Grade 9 ELA	30	2	0.54	0.01	27	
Grade 9 ELA	31	1	0.56	0.01	27	
Grade 9 ELA	32	1	0.59	0.01	27	
Grade 9 ELA	33	1	0.63	0.01	24	
Grade 9 ELA	34	1	0.63	0.01	24	
Grade 9 ELA	35	1	0.72	0.01	21	
Grade 9 ELA	36	1	0.77	0.01	21	
Grade 9 ELA	37	1	0.84	0.01	18	
Grade 9 ELA	38	1	0.87	0.01	18	
Grade 9 ELA	39	1	0.89	0.01	18	
Grade 9 ELA	40	1	0.99	0.01	16	
Grade 9 ELA	41	1	1.06	0.01	14	
Grade 9 ELA	42	1	1.08	0.01	14	
Grade 9 ELA	43	1	1.09	0.01	14	
Grade 9 ELA	44	1	1.16	0.01	11	
Grade 9 ELA	45	1	1.24	0.07	10	
Grade 9 ELA	46	1	1.26	0.07	9	
Grade 9 ELA	47	1	1.34	0.01	8	
Grade 9 ELA	48	1	1.36	0.01	8	
Grade 9 ELA	49	2	1.37	0.01	8	
Grade 9 ELA	50	1	1.39	0.01	7	
Grade 9 ELA	51	2	1.46	0.01	7	
Grade 9 ELA	52	1	1.49	0.01	7	
Grade 9 ELA	53	1	1.49	0.01	7	
Grade 9 ELA	54	1	1.51	0.01	6	
Grade 9 ELA	55	2	1.54	0.01	6	
Grade 9 ELA	56	2	1.57	0.01	6	
Grade 9 ELA	57	1	1.62	0.01	5	
Grade 9 ELA	58	1	1.69	0.04	4	



Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 9 ELA	59	1	1.71	0.08	4	
Grade 9 ELA	60	1	1.75	0.08	4	
Grade 9 ELA	61	2	2.01	0.04	2	
Grade 9 ELA	62	2	2.11	0.04	1	
Grade 9 ELA	63	2	2.21	0.02	1	
Grade 9 ELA	64	1	2.27	0.02	1	
Grade 9 ELA	65	1	2.44	0.09	0	
Grade 9 ELA	66	2	2.65	0.02	0	
Grade 9 ELA	67	2	3.05	0.02	0	
Grade 9 ELA	68	3	4.29	0.07	0	
Grade 9 ELA	69	3	4.41	0.06	0	
Grade 10 ELA	1	1	-1.60	0.02	97	PISA Level 1; AIMS Approaches;
Grade 10 ELA	2	1	-1.50	0.02	96	
Grade 10 ELA	3	1	-1.27	0.02	94	
Grade 10 ELA	4	1	-1.14	0.02	92	PISA Level 2;
Grade 10 ELA	5	1	-0.98	0.02	88	
Grade 10 ELA	6	1	-0.77	0.07	83	AIMS Meets;
Grade 10 ELA	7	1	-0.57	0.07	77	
Grade 10 ELA	8	1	-0.49	0.08	74	
Grade 10 ELA	9	1	-0.39	0.07	71	
Grade 10 ELA	10	1	-0.31	0.01	66	
Grade 10 ELA	11	1	-0.26	0.01	66	
Grade 10 ELA	12	1	-0.24	0.01	65	PISA Level 3;
Grade 10 ELA	13	1	0.11	0.01	51	
Grade 10 ELA	14	1	0.15	0.01	48	
Grade 10 ELA	15	1	0.17	0.01	48	
Grade 10 ELA	16	1	0.18	0.01	48	
Grade 10 ELA	17	1	0.20	0.01	46	
Grade 10 ELA	18	1	0.26	0.06	45	
Grade 10 ELA	19	1	0.29	0.01	42	
Grade 10 ELA	20	1	0.32	0.01	42	
Grade 10 ELA	21	1	0.38	0.01	39	
Grade 10 ELA	22	1	0.39	0.07	39	
Grade 10 ELA	23	1	0.39	0.07	39	
Grade 10 ELA	24	1	0.39	0.01	39	
Grade 10 ELA	25	1	0.44	0.01	36	
Grade 10 ELA	26	1	0.45	0.01	36	
Grade 10 ELA	27	1	0.47	0.07	36	
Grade 10 ELA	28	1	0.50	0.01	33	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 10 ELA	29	1	<b>0.53</b>	0.01	33	
Grade 10 ELA	30	1	<b>0.54</b>	0.01	33	
Grade 10 ELA	31	1	<b>0.57</b>	0.01	31	
Grade 10 ELA	32	2	<b>0.58</b>	0.01	30	
Grade 10 ELA	33	1	<b>0.59</b>	0.01	30	
Grade 10 ELA	34	1	<b>0.61</b>	0.01	30	
Grade 10 ELA	35	1	<b>0.64</b>	0.07	29	
Grade 10 ELA	36	1	<b>0.65</b>	0.01	29	
Grade 10 ELA	37	1	<b>0.72</b>	0.01	26	
Grade 10 ELA	38	1	<b>0.73</b>	0.01	25	
Grade 10 ELA	39	1	<b>0.74</b>	0.01	25	
Grade 10 ELA	40	1	<b>0.76</b>	0.01	25	
Grade 10 ELA	41	1	<b>0.78</b>	0.01	23	
Grade 10 ELA	42	1	<b>0.79</b>	0.01	23	
Grade 10 ELA	43	2	<b>0.79</b>	0.01	23	
Grade 10 ELA	44	1	<b>0.82</b>	0.01	22	
Grade 10 ELA	45	1	<b>0.87</b>	0.01	20	
Grade 10 ELA	46	1	<b>0.88</b>	0.01	20	
Grade 10 ELA	47	1	<b>0.90</b>	0.01	20	
Grade 10 ELA	48	2	<b>0.92</b>	0.01	20	
Grade 10 ELA	49	1	<b>0.94</b>	0.01	18	
Grade 10 ELA	50	2	<b>0.98</b>	0.01	17	
Grade 10 ELA	51	1	<b>1.00</b>	0.01	17	
Grade 10 ELA	52	1	<b>1.02</b>	0.01	16	PISA Level 4;
Grade 10 ELA	53	1	<b>1.18</b>	0.01	13	AIMS Exceeds;
Grade 10 ELA	54	2	<b>1.23</b>	0.01	12	
Grade 10 ELA	55	1	<b>1.24</b>	0.01	12	
Grade 10 ELA	56	1	<b>1.31</b>	0.01	10	
Grade 10 ELA	57	2	<b>1.33</b>	0.01	10	
Grade 10 ELA	58	1	<b>1.38</b>	0.01	9	
Grade 10 ELA	59	1	<b>1.42</b>	0.01	8	
Grade 10 ELA	60	2	<b>1.46</b>	0.01	7	
Grade 10 ELA	61	2	<b>1.56</b>	0.07	6	
Grade 10 ELA	62	1	<b>1.60</b>	0.01	6	
Grade 10 ELA	63	2	<b>1.62</b>	0.01	5	
Grade 10 ELA	64	1	<b>1.87</b>	0.02	3	PISA Level 5;
Grade 10 ELA	65	2	<b>2.49</b>	0.02	1	
Grade 10 ELA	66	2	<b>2.67</b>	0.02	0	
Grade 10 ELA	67	3	<b>3.17</b>	0.03	0	
Grade 10 ELA	68	3	<b>3.20</b>	0.03	0	
Grade 10 ELA	1	1	<b>-1.60</b>	0.02	97	PISA Level 1; AIMS Approaches;

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 10 ELA	2	1	-1.50	0.02	96	
Grade 10 ELA	3	1	-1.27	0.02	94	
Grade 10 ELA	4	1	-1.14	0.02	92	PISA Level 2;
11 ELA	1	1	-2.08	0.03	96	
11 ELA	2	1	-1.50	0.06	93	
11 ELA	3	1	-1.15	0.02	85	
11 ELA	4	1	-0.96	0.02	81	
11 ELA	5	1	-0.88	0.07	78	
11 ELA	6	1	-0.71	0.02	72	
11 ELA	7	1	-0.61	0.02	69	
11 ELA	8	1	-0.46	0.02	62	
11 ELA	9	1	-0.46	0.01	62	
11 ELA	10	1	-0.37	0.01	59	SBAC Level 2
11 ELA	11	1	-0.25	0.02	54	
11 ELA	12	1	-0.11	0.02	49	
11 ELA	13	1	-0.02	0.01	46	
11 ELA	14	1	-0.02	0.02	46	
11 ELA	15	1	0.00	0.02	44	
11 ELA	16	1	0.01	0.06	44	
11 ELA	17	1	0.10	0.01	41	
11 ELA	18	1	0.13	0.01	40	
11 ELA	19	1	0.21	0.04	37	
11 ELA	20	1	0.30	0.01	34	ACT College Ready;
11 ELA	21	1	0.32	0.01	34	
11 ELA	22	2	0.34	0.04	32	
11 ELA	23	1	0.36	0.01	32	
11 ELA	24	1	0.36	0.01	32	SBAC Level 3
11 ELA	25	1	0.40	0.01	31	
11 ELA	26	1	0.42	0.01	31	
11 ELA	27	1	0.43	0.01	29	
11 ELA	28	1	0.50	0.01	28	
11 ELA	29	1	0.52	0.01	26	
11 ELA	30	1	0.61	0.01	23	
11 ELA	31	1	0.62	0.01	23	
11 ELA	32	2	0.63	0.01	23	
11 ELA	33	1	0.64	0.01	22	
11 ELA	34	1	0.67	0.01	22	
11 ELA	35	1	0.69	0.01	22	
11 ELA	36	1	0.69	0.01	22	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
11 ELA	37	1	0.71	0.01	20	
11 ELA	38	1	0.71	0.01	20	
11 ELA	39	1	0.82	0.01	17	
11 ELA	40	1	0.83	0.01	17	
11 ELA	41	1	0.84	0.01	17	
11 ELA	42	1	0.92	0.06	15	
11 ELA	43	1	0.93	0.06	15	
11 ELA	44	1	1.02	0.06	12	
11 ELA	45	1	1.04	0.06	12	
11 ELA	46	1	1.08	0.01	12	
11 ELA	47	1	1.08	0.01	12	
11 ELA	48	1	1.19	0.02	10	SBAC Level 4
11 ELA	49	2	1.22	0.01	8	
11 ELA	50	2	1.23	0.01	8	
11 ELA	51	2	1.23	0.01	8	
11 ELA	52	1	1.27	0.02	8	
11 ELA	53	1	1.28	0.02	8	
11 ELA	54	1	1.41	0.02	7	
11 ELA	55	1	1.53	0.02	5	
11 ELA	56	1	1.61	0.02	4	
11 ELA	57	1	1.75	0.07	3	
11 ELA	58	2	1.84	0.02	3	
11 ELA	59	2	1.87	0.02	3	
11 ELA	60	2	1.92	0.02	2	
11 ELA	61	1	2.13	0.02	1	
11 ELA	62	2	2.26	0.02	1	
11 ELA	63	2	2.52	0.06	0	
11 ELA	64	1	2.72	0.02	0	
11 ELA	65	1	2.73	0.02	0	
11 ELA	66	3	3.75	0.05	0	
11 ELA	67	3	3.89	0.05	0	
Grade 3 Math	1	1	-1.31	0.02	96	
Grade 3 Math	2	1	-0.95	0.01	90	
Grade 3 Math	3	1	-0.75	0.01	86	
Grade 3 Math	4	1	-0.62	0.01	83	AIMS Approaches
Grade 3 Math	5	1	-0.38	0.01	78	
Grade 3 Math	6	1	-0.30	0.01	76	
Grade 3 Math	7	1	-0.30	0.01	76	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 3 Math	8	1	-0.24	0.01	75	
Grade 3 Math	9	1	-0.20	0.01	74	
Grade 3 Math	10	1	-0.16	0.06	73	
Grade 3 Math	11	1	-0.12	0.01	73	
Grade 3 Math	12	1	-0.02	0.01	70	
Grade 3 Math	13	1	-0.02	0.01	70	
Grade 3 Math	14	1	0.02	0.01	69	SBAC Level 2
Grade 3 Math	15	1	0.06	0.01	67	
Grade 3 Math	16	1	0.13	0.01	66	
Grade 3 Math	17	1	0.15	0.01	66	
Grade 3 Math	18	1	0.34	0.01	60	
Grade 3 Math	19	1	0.39	0.01	59	AIMS Meets
Grade 3 Math	20	1	0.45	0.01	57	
Grade 3 Math	21	1	0.50	0.01	57	
Grade 3 Math	22	1	0.56	0.05	54	
Grade 3 Math	23	1	0.59	0.05	54	
Grade 3 Math	24	1	0.65	0.05	51	
Grade 3 Math	25	1	0.78	0.01	48	
Grade 3 Math	26	1	0.79	0.01	48	
Grade 3 Math	27	1	0.83	0.01	48	
Grade 3 Math	28	1	0.88	0.01	47	
Grade 3 Math	29	1	0.90	0.01	45	
Grade 3 Math	30	1	0.91	0.01	45	
Grade 3 Math	31	1	0.94	0.01	45	
Grade 3 Math	32	1	0.95	0.01	45	
Grade 3 Math	33	1	1.04	0.01	42	
Grade 3 Math	34	1	1.09	0.01	42	
Grade 3 Math	35	1	1.11	0.01	42	
Grade 3 Math	36	1	1.14	0.01	38	SBAC Level 3
Grade 3 Math	37	1	1.18	0.01	38	
Grade 3 Math	38	1	1.25	0.01	37	
Grade 3 Math	39	1	1.31	0.01	35	
Grade 3 Math	40	1	1.34	0.01	35	
Grade 3 Math	41	1	1.47	0.01	32	
Grade 3 Math	42	1	1.52	0.05	32	
Grade 3 Math	43	1	1.63	0.01	28	
Grade 3 Math	44	1	1.72	0.05	25	AIMS Exceeds;
Grade 3 Math	45	1	1.83	0.01	25	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 3 Math	46	1	1.93	0.01	21	
Grade 3 Math	47	1	1.96	0.05	21	
Grade 3 Math	48	1	1.99	0.05	21	
Grade 3 Math	49	1	2.09	0.01	18	
Grade 3 Math	50	1	2.14	0.01	18	
Grade 3 Math	51	1	2.37	0.01	15	
Grade 3 Math	52	1	2.43	0.05	15	
Grade 3 Math	53	1	2.55	0.01	11	
Grade 3 Math	54	1	2.56	0.01	11	
Grade 3 Math	55	1	2.68	0.05	11	SBAC Level 4
Grade 3 Math	56	1	2.79	0.06	10	
Grade 3 Math	57	1	2.91	0.06	8	
Grade 3 Math	58	1	3.23	0.06	5	
Grade 4 Math	1	1	-1.50	0.02	97	
Grade 4 Math	2	1	-1.22	0.06	93	
Grade 4 Math	3	1	-0.73	0.05	82	NAEP Basic;AIMS Approaches;
Grade 4 Math	4	1	-0.58	0.01	77	
Grade 4 Math	5	1	-0.57	0.01	77	
Grade 4 Math	6	1	-0.49	0.01	77	
Grade 4 Math	7	1	-0.47	0.01	74	
Grade 4 Math	8	1	-0.44	0.01	74	SBAC Level 2
Grade 4 Math	9	1	-0.34	0.01	71	
Grade 4 Math	10	1	-0.31	0.01	71	
Grade 4 Math	11	1	-0.30	0.01	71	
Grade 4 Math	12	1	-0.28	0.01	71	
Grade 4 Math	13	1	-0.24	0.01	68	
Grade 4 Math	14	1	-0.22	0.05	68	
Grade 4 Math	15	1	-0.14	0.01	65	
Grade 4 Math	16	1	-0.03	0.01	62	
Grade 4 Math	17	1	0.02	0.01	62	
Grade 4 Math	18	1	0.14	0.01	58	
Grade 4 Math	19	1	0.17	0.01	58	
Grade 4 Math	20	1	0.18	0.01	57	
Grade 4 Math	21	1	0.24	0.05	55	
Grade 4 Math	22	1	0.27	0.01	55	
Grade 4 Math	23	1	0.30	0.01	52	
Grade 4 Math	24	1	0.39	0.01	52	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 4 Math	25	1	0.40	0.01	52	AIMS Meets;
Grade 4 Math	26	1	0.42	0.01	49	
Grade 4 Math	27	1	0.50	0.01	49	
Grade 4 Math	28	1	0.54	0.01	45	
Grade 4 Math	29	1	0.54	0.01	45	
Grade 4 Math	30	1	0.60	0.05	45	
Grade 4 Math	31	1	0.60	0.05	45	
Grade 4 Math	32	1	0.65	0.05	43	
Grade 4 Math	33	1	0.72	0.05	42	NAEP Proficient
Grade 4 Math	34	1	0.74	0.05	42	
Grade 4 Math	35	1	0.76	0.05	42	
Grade 4 Math	36	1	0.78	0.05	38	SBAC Level 3
Grade 4 Math	37	1	0.89	0.01	36	
Grade 4 Math	38	1	0.89	0.01	36	
Grade 4 Math	39	1	0.91	0.05	35	
Grade 4 Math	40	1	0.95	0.01	35	
Grade 4 Math	41	1	0.97	0.01	35	
Grade 4 Math	42	1	1.01	0.01	35	
Grade 4 Math	43	1	1.02	0.01	33	
Grade 4 Math	44	1	1.15	0.05	31	
Grade 4 Math	45	1	1.24	0.01	28	
Grade 4 Math	46	1	1.35	0.01	25	
Grade 4 Math	47	2	1.38	0.05	25	
Grade 4 Math	48	1	1.44	0.01	25	
Grade 4 Math	49	1	1.45	0.01	22	
Grade 4 Math	50	1	1.45	0.01	22	
Grade 4 Math	51	1	1.47	0.01	22	
Grade 4 Math	52	1	1.55	0.05	22	
Grade 4 Math	53	1	1.66	0.01	19	
Grade 4 Math	54	1	1.73	0.05	19	
Grade 4 Math	55	1	1.85	0.05	16	AIMS Exceeds;
Grade 4 Math	56	1	2.07	0.05	13	SBAC Level 4
Grade 4 Math	57	1	2.11	0.05	13	
Grade 4 Math	58	1	2.20	0.01	10	
Grade 4 Math	59	2	2.21	0.05	10	
Grade 4 Math	60	1	2.23	0.01	10	
Grade 4 Math	61	1	2.33	0.01	10	
Grade 4 Math	62	1	2.39	0.01	9	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 4 Math	63	1	2.41	0.01	7	NAEP Advanced
Grade 4 Math	64	1	2.66	0.01	6	
Grade 4 Math	65	1	3.34	0.07	3	
Grade 4 Math	66	1	3.68	0.02	2	
Grade 5 Math	1	1	-1.83	0.02	97	
Grade 5 Math	2	1	-1.52	0.07	92	
Grade 5 Math	3	1	-1.13	0.01	85	AIMS Approaches;
Grade 5 Math	4	1	-0.65	0.05	71	
Grade 5 Math	5	1	-0.53	0.01	66	SBAC Level 2;
Grade 5 Math	6	1	-0.40	0.01	61	
Grade 5 Math	7	1	-0.38	0.05	61	
Grade 5 Math	8	1	-0.35	0.01	61	
Grade 5 Math	9	1	-0.29	0.01	58	
Grade 5 Math	10	1	-0.20	0.01	56	
Grade 5 Math	11	1	-0.18	0.01	55	
Grade 5 Math	12	1	-0.15	0.01	55	AIMS Meets;
Grade 5 Math	13	1	-0.11	0.01	55	
Grade 5 Math	14	1	-0.06	0.01	52	
Grade 5 Math	15	1	-0.02	0.01	52	
Grade 5 Math	16	1	-0.01	0.01	52	
Grade 5 Math	17	1	-0.01	0.01	52	
Grade 5 Math	18	1	0.05	0.05	48	
Grade 5 Math	19	1	0.07	0.05	48	
Grade 5 Math	20	1	0.09	0.04	48	
Grade 5 Math	21	1	0.27	0.05	43	
Grade 5 Math	22	1	0.28	0.05	43	
Grade 5 Math	23	1	0.31	0.01	43	
Grade 5 Math	24	1	0.35	0.01	41	
Grade 5 Math	25	1	0.37	0.05	40	
Grade 5 Math	26	1	0.38	0.01	40	
Grade 5 Math	27	1	0.41	0.01	40	
Grade 5 Math	28	1	0.48	0.01	37	
Grade 5 Math	29	1	0.57	0.01	35	
Grade 5 Math	30	1	0.63	0.05	34	
Grade 5 Math	31	1	0.68	0.01	33	SBAC Level 3;
Grade 5 Math	32	1	0.72	0.01	31	
Grade 5 Math	33	1	0.74	0.01	31	
Grade 5 Math	34	1	0.75	0.01	31	



Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 5 Math	35	1	0.87	0.01	29	
Grade 5 Math	36	1	0.90	0.01	27	
Grade 5 Math	37	1	0.93	0.01	26	
Grade 5 Math	38	1	0.98	0.01	26	
Grade 5 Math	39	1	0.99	0.01	26	
Grade 5 Math	40	1	1.02	0.01	25	
Grade 5 Math	41	1	1.08	0.01	24	
Grade 5 Math	42	2	1.16	0.05	22	
Grade 5 Math	43	1	1.26	0.01	21	AIMS Exceeds;
Grade 5 Math	44	1	1.26	0.01	20	
Grade 5 Math	45	1	1.28	0.05	20	
Grade 5 Math	46	1	1.34	0.01	19	
Grade 5 Math	47	1	1.37	0.05	19	
Grade 5 Math	48	1	1.46	0.01	16	
Grade 5 Math	49	1	1.51	0.01	16	
Grade 5 Math	50	1	1.62	0.01	14	SBAC Level 4;
Grade 5 Math	51	1	1.71	0.05	13	
Grade 5 Math	52	1	1.74	0.01	13	
Grade 5 Math	53	1	1.81	0.05	12	
Grade 5 Math	54	1	1.81	0.05	12	
Grade 5 Math	55	1	1.82	0.01	12	
Grade 5 Math	56	1	1.87	0.05	12	
Grade 5 Math	57	1	1.95	0.01	10	
Grade 5 Math	58	1	2.01	0.01	10	
Grade 5 Math	59	1	2.16	0.01	8	
Grade 5 Math	60	1	2.16	0.01	8	
Grade 5 Math	61	1	2.29	0.01	7	
Grade 5 Math	62	1	2.41	0.01	6	
Grade 5 Math	63	1	2.52	0.06	5	
Grade 5 Math	64	1	2.67	0.06	4	
Grade 5 Math	65	1	3.01	0.07	3	
Grade 5 Math	66	1	3.24	0.07	2	
Grade 6 Math	1	1	-1.42	0.01	91	
Grade 6 Math	2	1	-1.02	0.06	80	AIMS Approaches;
Grade 6 Math	3	1	-0.86	0.01	73	NAEP Basic;
Grade 6 Math	4	1	-0.73	0.01	69	
Grade 6 Math	5	1	-0.65	0.01	66	
Grade 6 Math	6	1	-0.64	0.01	66	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 6 Math	7	1	-0.58	0.05	66	SBAC Level 2;
Grade 6 Math	8	1	-0.52	0.05	62	
Grade 6 Math	9	1	-0.48	0.01	62	
Grade 6 Math	10	1	-0.34	0.01	55	
Grade 6 Math	11	1	-0.31	0.05	55	
Grade 6 Math	12	1	-0.28	0.01	55	
Grade 6 Math	13	1	-0.26	0.01	55	
Grade 6 Math	14	1	-0.23	0.01	51	
Grade 6 Math	15	1	-0.12	0.01	48	AIMS Meets;
Grade 6 Math	16	1	-0.03	0.01	45	
Grade 6 Math	17	1	0.00	0.01	45	
Grade 6 Math	18	1	0.02	0.05	45	
Grade 6 Math	19	1	0.02	0.01	45	
Grade 6 Math	20	1	0.03	0.01	45	
Grade 6 Math	21	1	0.19	0.05	38	
Grade 6 Math	22	1	0.28	0.01	35	NAEP Proficient;
Grade 6 Math	23	1	0.30	0.01	35	
Grade 6 Math	24	1	0.33	0.01	35	
Grade 6 Math	25	1	0.35	0.01	35	
Grade 6 Math	26	1	0.41	0.01	32	SBAC Level 3;
Grade 6 Math	27	1	0.47	0.01	31	
Grade 6 Math	28	1	0.52	0.01	29	
Grade 6 Math	29	1	0.53	0.01	29	
Grade 6 Math	30	1	0.60	0.01	27	
Grade 6 Math	31	1	0.67	0.01	27	
Grade 6 Math	32	1	0.74	0.01	24	
Grade 6 Math	33	1	0.78	0.01	24	
Grade 6 Math	34	1	0.79	0.01	24	
Grade 6 Math	35	1	0.81	0.01	23	
Grade 6 Math	36	1	0.90	0.01	22	
Grade 6 Math	37	1	0.97	0.01	19	
Grade 6 Math	38	1	0.99	0.01	19	
Grade 6 Math	39	1	1.00	0.01	19	
Grade 6 Math	40	1	1.02	0.01	19	
Grade 6 Math	41	1	1.15	0.01	17	
Grade 6 Math	42	1	1.18	0.05	16	AIMS Exceeds;
Grade 6 Math	43	1	1.35	0.01	13	
Grade 6 Math	44	1	1.36	0.01	13	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 6 Math	45	1	1.43	0.01	13	SBAC Level 4;
Grade 6 Math	46	1	1.55	0.05	11	
Grade 6 Math	47	1	1.66	0.01	9	
Grade 6 Math	48	1	1.69	0.01	9	
Grade 6 Math	49	1	1.85	0.06	8	NAEP Advanced
Grade 6 Math	50	1	1.85	0.01	8	
Grade 6 Math	51	1	1.98	0.01	7	
Grade 6 Math	52	1	2.10	0.01	6	
Grade 6 Math	53	1	2.14	0.01	5	
Grade 6 Math	54	1	2.39	0.01	4	
Grade 6 Math	55	1	2.56	0.07	3	
Grade 6 Math	56	1	3.64	0.02	1	
Grade 6 Math	57	1	4.04	0.02	1	
Grade 7 Math	1	1	-1.37	0.01	86	AIMS Approaches;
Grade 7 Math	2	1	-0.98	0.01	76	
Grade 7 Math	3	1	-0.94	0.01	76	
Grade 7 Math	4	1	-0.73	0.01	69	
Grade 7 Math	5	1	-0.60	0.01	66	
Grade 7 Math	6	1	-0.57	0.01	62	
Grade 7 Math	7	1	-0.53	0.01	62	
Grade 7 Math	8	1	-0.52	0.05	62	SBAC Level 2;
Grade 7 Math	9	1	-0.47	0.01	59	
Grade 7 Math	10	1	-0.41	0.01	59	AIMS Meets
Grade 7 Math	11	1	-0.19	0.01	52	
Grade 7 Math	12	1	-0.07	0.05	49	
Grade 7 Math	13	1	-0.06	0.05	49	
Grade 7 Math	14	1	-0.06	0.01	47	
Grade 7 Math	15	1	-0.03	0.01	46	
Grade 7 Math	16	1	0.00	0.05	46	
Grade 7 Math	17	1	0.04	0.01	46	
Grade 7 Math	18	1	0.11	0.01	43	
Grade 7 Math	19	1	0.12	0.01	43	
Grade 7 Math	20	1	0.14	0.01	43	
Grade 7 Math	21	1	0.17	0.01	41	
Grade 7 Math	22	1	0.18	0.01	41	
Grade 7 Math	23	1	0.25	0.01	39	
Grade 7 Math	24	1	0.30	0.01	38	
Grade 7 Math	25	1	0.30	0.01	36	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 7 Math	26	1	0.32	0.01	36	
Grade 7 Math	27	1	0.41	0.01	33	
Grade 7 Math	28	1	0.44	0.01	33	
Grade 7 Math	29	1	0.45	0.01	33	SBAC Level 3;
Grade 7 Math	30	1	0.59	0.05	30	
Grade 7 Math	31	1	0.71	0.01	27	
Grade 7 Math	32	1	0.72	0.05	27	
Grade 7 Math	33	1	0.73	0.01	27	
Grade 7 Math	34	1	0.81	0.01	25	
Grade 7 Math	35	1	0.82	0.01	25	
Grade 7 Math	36	1	0.83	0.01	25	
Grade 7 Math	37	1	0.84	0.01	25	
Grade 7 Math	38	1	0.87	0.05	23	AIMS Exceeds
Grade 7 Math	39	1	0.87	0.01	23	
Grade 7 Math	40	1	0.89	0.01	23	
Grade 7 Math	41	1	0.98	0.05	22	
Grade 7 Math	42	1	1.06	0.06	20	
Grade 7 Math	43	1	1.25	0.01	17	
Grade 7 Math	44	1	1.29	0.01	16	
Grade 7 Math	45	1	1.42	0.05	14	
Grade 7 Math	46	1	1.51	0.06	13	SBAC Level 4
Grade 7 Math	47	1	1.53	0.01	13	
Grade 7 Math	48	1	1.54	0.01	13	
Grade 7 Math	49	1	1.64	0.01	11	
Grade 7 Math	50	1	1.71	0.01	11	
Grade 7 Math	51	1	1.89	0.06	8	
Grade 7 Math	52	1	1.95	0.01	8	
Grade 7 Math	53	1	1.99	0.01	7	
Grade 7 Math	54	1	2.20	0.06	6	
Grade 7 Math	55	1	2.23	0.01	6	
Grade 7 Math	56	1	2.35	0.01	5	
Grade 7 Math	57	1	2.63	0.07	3	
Grade 7 Math	58	1	2.87	0.02	2	
Grade 7 Math	59	1	3.24	0.02	1	
Grade 7 Math	60	1	3.40	0.02	1	
Grade 7 Math	61	1	3.43	0.02	1	
Grade 8 Math	1	1	-2.04	0.02	93	
Grade 8 Math	2	1	-1.93	0.02	93	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 8 Math	3	1	-1.85	0.06	91	
Grade 8 Math	4	1	-1.56	0.01	84	
Grade 8 Math	5	1	-1.54	0.01	84	
Grade 8 Math	6	1	-1.29	0.07	77	
Grade 8 Math	7	1	-1.24	0.01	77	
Grade 8 Math	8	1	-1.21	0.05	73	
Grade 8 Math	9	1	-1.15	0.05	73	
Grade 8 Math	10	1	-1.03	0.01	69	NAEP Basic;AIMS Approaches;
Grade 8 Math	11	1	-0.89	0.01	65	
Grade 8 Math	12	1	-0.89	0.01	65	
Grade 8 Math	13	1	-0.88	0.05	65	
Grade 8 Math	14	1	-0.74	0.01	61	SBAC Level 2;
Grade 8 Math	15	1	-0.69	0.01	57	
Grade 8 Math	16	1	-0.60	0.01	53	
Grade 8 Math	17	1	-0.53	0.01	53	AIMS Meets;
Grade 8 Math	18	1	-0.40	0.01	49	
Grade 8 Math	19	1	-0.36	0.01	45	
Grade 8 Math	20	1	-0.31	0.05	45	
Grade 8 Math	21	1	-0.30	0.05	45	
Grade 8 Math	22	1	-0.27	0.06	42	
Grade 8 Math	23	1	-0.19	0.01	42	
Grade 8 Math	24	1	-0.16	0.01	38	
Grade 8 Math	25	1	-0.08	0.05	38	
Grade 8 Math	26	1	-0.01	0.01	35	
Grade 8 Math	27	1	0.03	0.01	35	
Grade 8 Math	28	1	0.04	0.01	35	
Grade 8 Math	29	1	0.09	0.01	32	NAEP Proficient;
Grade 8 Math	30	1	0.09	0.01	32	SBAC Level 3;
Grade 8 Math	31	1	0.20	0.01	30	
Grade 8 Math	32	1	0.23	0.04	30	
Grade 8 Math	33	1	0.34	0.06	27	
Grade 8 Math	34	1	0.36	0.01	27	
Grade 8 Math	35	1	0.38	0.05	24	
Grade 8 Math	36	1	0.43	0.05	24	
Grade 8 Math	37	1	0.46	0.06	24	
Grade 8 Math	38	1	0.47	0.05	24	
Grade 8 Math	39	1	0.59	0.01	22	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Grade 8 Math	40	2	0.68	0.01	20	
Grade 8 Math	41	1	0.70	0.01	20	
Grade 8 Math	42	1	0.77	0.05	18	
Grade 8 Math	43	2	0.79	0.01	18	
Grade 8 Math	44	1	0.81	0.05	18	AIMS Exceeds
Grade 8 Math	45	1	0.94	0.01	16	
Grade 8 Math	46	1	1.11	0.06	13	
Grade 8 Math	47	2	1.15	0.05	13	SBAC Level 4
Grade 8 Math	48	1	1.26	0.01	11	
Grade 8 Math	49	1	1.29	0.01	11	
Grade 8 Math	50	1	1.37	0.01	10	
Grade 8 Math	51	1	1.37	0.01	10	
Grade 8 Math	52	1	1.41	0.01	10	
Grade 8 Math	53	1	1.41	0.01	10	
Grade 8 Math	54	1	1.42	0.01	9	
Grade 8 Math	55	1	1.53	0.01	8	
Grade 8 Math	56	1	1.58	0.01	8	
Grade 8 Math	57	1	1.67	0.01	7	NAEP Advanced
Grade 8 Math	58	1	1.67	0.01	7	
Grade 8 Math	59	1	1.85	0.01	6	
Grade 8 Math	60	2	1.93	0.01	5	
Grade 8 Math	61	1	2.13	0.01	4	
Grade 8 Math	62	1	2.32	0.02	3	
Grade 8 Math	63	1	2.39	0.02	3	
Grade 8 Math	64	2	2.51	0.07	3	
Grade 8 Math	65	1	2.52	0.02	3	
Grade 8 Math	66	1	2.60	0.02	3	
Grade 8 Math	67	1	2.70	0.02	3	
Grade 8 Math	68	1	2.87	0.02	2	
Grade 8 Math	69	1	3.37	0.02	1	
Grade 8 Math	70	1	3.91	0.02	1	
Algebra I	1	1	-1.57	0.01	88	
Algebra I	2	1	-1.42	0.06	84	
Algebra I	3	1	-1.24	0.06	79	
Algebra I	4	1	-1.18	0.01	74	
Algebra I	5	1	-1.18	0.01	74	
Algebra I	6	1	-1.14	0.01	74	
Algebra I	7	1	-1.12	0.06	74	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Algebra I	8	1	-1.01	0.01	69	
Algebra I	9	1	-0.99	0.01	67	
Algebra I	10	1	-0.98	0.01	64	
Algebra I	11	1	-0.87	0.01	59	
Algebra I	12	1	-0.80	0.01	59	
Algebra I	13	1	-0.78	0.01	59	
Algebra I	14	1	-0.77	0.06	55	
Algebra I	15	1	-0.70	0.06	55	
Algebra I	16	1	-0.69	0.01	55	
Algebra I	17	1	-0.69	0.01	55	
Algebra I	18	1	-0.64	0.01	51	
Algebra I	19	1	-0.57	0.01	51	
Algebra I	20	1	-0.57	0.01	51	
Algebra I	21	1	-0.57	0.01	50	
Algebra I	22	1	-0.53	0.01	48	
Algebra I	23	1	-0.53	0.01	48	
Algebra I	24	1	-0.50	0.01	48	
Algebra I	25	1	-0.33	0.01	41	
Algebra I	26	1	-0.32	0.01	41	
Algebra I	27	1	-0.29	0.01	41	
Algebra I	28	1	-0.29	0.01	41	
Algebra I	29	1	-0.28	0.01	41	
Algebra I	30	1	-0.19	0.01	38	
Algebra I	31	1	-0.12	0.06	35	
Algebra I	32	1	-0.03	0.01	32	
Algebra I	33	1	-0.03	0.01	32	
Algebra I	34	1	0.00	0.01	32	
Algebra I	35	1	0.06	0.01	30	
Algebra I	36	1	0.09	0.01	30	
Algebra I	37	1	0.10	0.01	30	
Algebra I	38	1	0.18	0.01	27	
Algebra I	39	1	0.23	0.06	25	
Algebra I	40	1	0.27	0.01	25	
Algebra I	41	1	0.28	0.01	25	
Algebra I	42	1	0.33	0.06	23	
Algebra I	43	1	0.41	0.01	23	
Algebra I	44	1	0.41	0.01	23	
Algebra I	45	1	0.42	0.01	22	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Algebra I	46	1	0.47	0.01	21	
Algebra I	47	1	0.53	0.01	20	
Algebra I	48	1	0.62	0.07	18	
Algebra I	49	1	0.82	0.07	16	
Algebra I	50	2	0.94	0.01	14	
Algebra I	51	1	0.95	0.01	14	
Algebra I	52	1	0.99	0.02	12	
Algebra I	53	1	1.03	0.02	12	
Algebra I	54	1	1.04	0.07	12	
Algebra I	55	1	1.16	0.02	11	
Algebra I	56	1	1.27	0.08	9	
Algebra I	57	1	1.45	0.08	8	
Algebra I	58	1	1.51	0.08	7	
Algebra I	59	2	1.60	0.08	7	
Algebra I	60	1	1.70	0.09	5	
Algebra I	61	1	1.81	0.09	5	
Algebra I	62	1	1.97	0.09	4	
Algebra I	63	1	2.06	0.09	4	
Algebra I	64	1	2.08	0.09	4	
Algebra I	65	1	2.15	0.02	4	
Algebra I	66	1	2.20	0.02	3	
Algebra I	67	1	2.30	0.10	3	
Algebra I	68	1	2.33	0.10	3	
Algebra I	69	1	2.77	0.02	1	
Algebra I	70	1	2.81	0.02	1	
Geometry	1	1	-2.35	0.02	89	PISA Level 1;
Geometry	2	1	-2.17	0.06	84	
Geometry	3	1	-2.17	0.02	84	
Geometry	4	1	-1.99	0.06	79	PISA Level 2
Geometry	5	1	-1.79	0.06	69	AIMS Approaches
Geometry	6	1	-1.68	0.01	67	
Geometry	7	1	-1.64	0.01	64	
Geometry	8	1	-1.64	0.06	64	
Geometry	9	1	-1.64	0.01	64	
Geometry	10	1	-1.61	0.06	64	
Geometry	11	1	-1.59	0.06	62	
Geometry	12	1	-1.54	0.01	62	
Geometry	13	1	-1.44	0.06	57	



Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Geometry	14	1	-1.39	0.06	57	AIMS Meets
Geometry	15	1	-1.37	0.01	53	
Geometry	16	1	-1.37	0.01	53	
Geometry	17	1	-1.34	0.01	53	
Geometry	18	1	-1.30	0.01	52	
Geometry	19	1	-1.26	0.01	52	
Geometry	20	1	-1.16	0.01	47	
Geometry	21	1	-1.15	0.01	47	
Geometry	22	1	-1.12	0.06	44	
Geometry	23	1	-1.02	0.01	43	
Geometry	24	1	-1.02	0.01	43	
Geometry	25	1	-0.95	0.01	39	PISA Level 3
Geometry	26	1	-0.86	0.01	37	
Geometry	27	1	-0.83	0.01	36	
Geometry	28	1	-0.76	0.01	34	
Geometry	29	1	-0.75	0.06	34	
Geometry	30	1	-0.58	0.02	30	
Geometry	31	1	-0.50	0.02	28	
Geometry	32	1	-0.40	0.02	25	
Geometry	33	1	-0.33	0.02	24	
Geometry	34	1	-0.30	0.06	23	
Geometry	35	1	-0.27	0.02	23	
Geometry	36	1	-0.27	0.07	23	
Geometry	37	1	-0.15	0.02	20	AIMS Exceeds
Geometry	38	1	-0.14	0.06	20	
Geometry	39	1	-0.12	0.02	20	
Geometry	40	1	-0.10	0.02	20	PISA Level 4
Geometry	41	1	0.10	0.06	16	
Geometry	42	1	0.16	0.02	14	
Geometry	43	1	0.24	0.02	14	
Geometry	44	1	0.27	0.02	13	
Geometry	45	1	0.27	0.02	13	
Geometry	46	1	0.33	0.02	12	
Geometry	47	1	0.48	0.07	11	
Geometry	48	1	0.61	0.02	9	
Geometry	49	1	0.78	0.02	7	PISA Level 5;
Geometry	50	2	0.85	0.08	7	
Geometry	51	1	0.87	0.02	6	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Geometry	52	1	0.96	0.02	6	
Geometry	53	1	1.12	0.02	4	
Geometry	54	1	1.14	0.02	4	
Geometry	55	1	1.15	0.02	4	
Geometry	56	1	1.44	0.02	3	
Geometry	57	1	1.50	0.02	3	
Geometry	58	1	1.65	0.02	2	PISA Level 6
Geometry	59	2	1.80	0.03	1	
Geometry	60	1	1.81	0.03	1	
Geometry	61	1	2.00	0.03	1	
Geometry	62	1	2.28	0.03	1	
Geometry	63	1	2.38	0.03	0	
Geometry	64	1	2.66	0.04	0	
Geometry	65	2	2.95	0.05	0	
Geometry	66	2	3.04	0.06	0	
Algebra II	1	1	-2.47	0.02	86	
Algebra II	2	1	-2.36	0.06	82	AIMS Approaches
Algebra II	3	1	-2.32	0.02	82	
Algebra II	4	1	-2.31	0.06	82	
Algebra II	5	1	-2.29	0.02	82	
Algebra II	6	1	-2.25	0.06	76	
Algebra II	7	1	-2.02	0.02	70	AIMS Meets
Algebra II	8	1	-1.99	0.02	70	
Algebra II	9	1	-1.98	0.06	70	
Algebra II	10	1	-1.98	0.02	70	
Algebra II	11	1	-1.96	0.06	70	
Algebra II	12	1	-1.71	0.02	58	SBAC Level 2
Algebra II	13	1	-1.53	0.06	53	
Algebra II	14	1	-1.50	0.02	53	
Algebra II	15	1	-1.49	0.06	53	
Algebra II	16	1	-1.43	0.02	48	
Algebra II	17	1	-1.36	0.06	48	
Algebra II	18	1	-1.31	0.02	47	
Algebra II	19	1	-1.25	0.06	44	
Algebra II	20	1	-1.20	0.06	42	
Algebra II	21	1	-1.18	0.01	42	
Algebra II	22	1	-1.17	0.02	42	
Algebra II	23	1	-1.15	0.02	40	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Algebra II	24	1	-1.02	0.02	36	ACT College Ready
Algebra II	25	1	-0.98	0.06	36	
Algebra II	26	1	-0.94	0.02	35	
Algebra II	27	1	-0.90	0.02	32	SBAC Level 3
Algebra II	28	1	-0.85	0.02	32	AIMS Exceeds
Algebra II	29	1	-0.78	0.07	29	
Algebra II	30	1	-0.77	0.02	29	
Algebra II	31	1	-0.70	0.06	28	
Algebra II	32	1	-0.68	0.02	28	
Algebra II	33	1	-0.60	0.02	26	
Algebra II	34	1	-0.57	0.02	25	
Algebra II	35	1	-0.55	0.02	25	
Algebra II	36	1	-0.52	0.06	23	
Algebra II	37	1	-0.46	0.07	23	
Algebra II	38	1	-0.40	0.07	21	
Algebra II	39	1	-0.30	0.02	18	
Algebra II	40	1	-0.19	0.02	18	
Algebra II	41	1	-0.18	0.02	16	
Algebra II	42	1	-0.14	0.07	16	
Algebra II	43	1	0.06	0.02	12	
Algebra II	44	2	0.09	0.02	12	
Algebra II	45	1	0.22	0.02	11	SBAC Level 4
Algebra II	46	1	0.24	0.08	11	
Algebra II	47	1	0.34	0.02	9	
Algebra II	48	1	0.45	0.08	8	
Algebra II	49	1	0.57	0.02	6	
Algebra II	50	1	0.70	0.09	5	
Algebra II	51	1	0.80	0.02	4	
Algebra II	52	1	0.84	0.02	4	
Algebra II	53	1	0.97	0.02	4	
Algebra II	54	1	0.98	0.02	4	
Algebra II	55	1	1.13	0.03	3	
Algebra II	56	1	1.17	0.03	3	
Algebra II	57	1	1.17	0.03	3	
Algebra II	58	1	1.18	0.03	3	
Algebra II	59	1	1.41	0.03	2	
Algebra II	60	1	1.67	0.03	1	
Algebra II	61	1	1.72	0.03	1	

Test	Item Map Order	Item Score Category	RP67/ RP50 (EOC Math)	SE	Overall Percent of Students At or Above Standard	Location of External Benchmarks
Algebra II	62	1	1.83	0.03	1	
Algebra II	63	1	1.96	0.03	1	
Algebra II	64	1	2.03	0.03	0	
Algebra II	65	1	2.07	0.04	0	
Algebra II	66	1	2.07	0.04	0	
Algebra II	67	1	2.22	0.04	0	
Algebra II	68	1	3.01	0.05	0	

## **Appendix G – OIB Item Data Plots**

Figure G1. OIB Item Data Plot – Grade 3 ELA

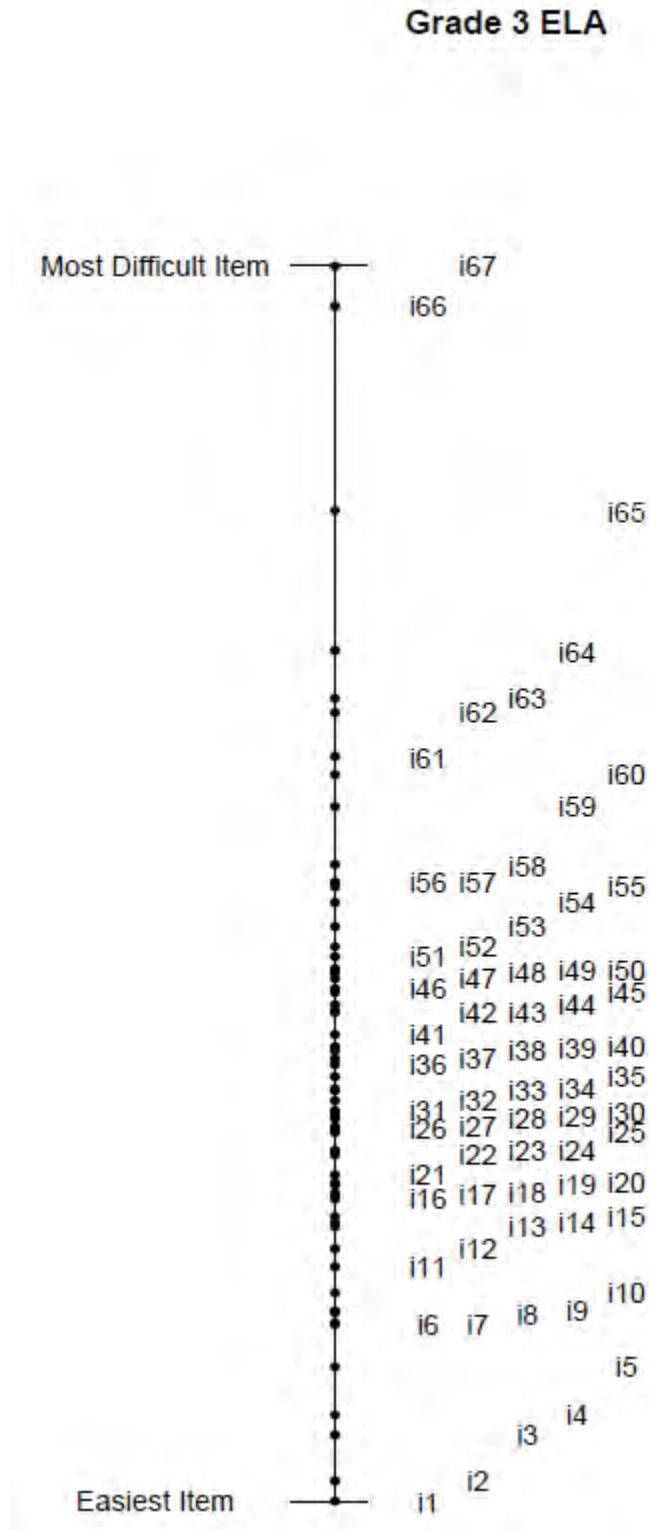


Figure G2. OIB Item Data Plot – Grade 4 ELA

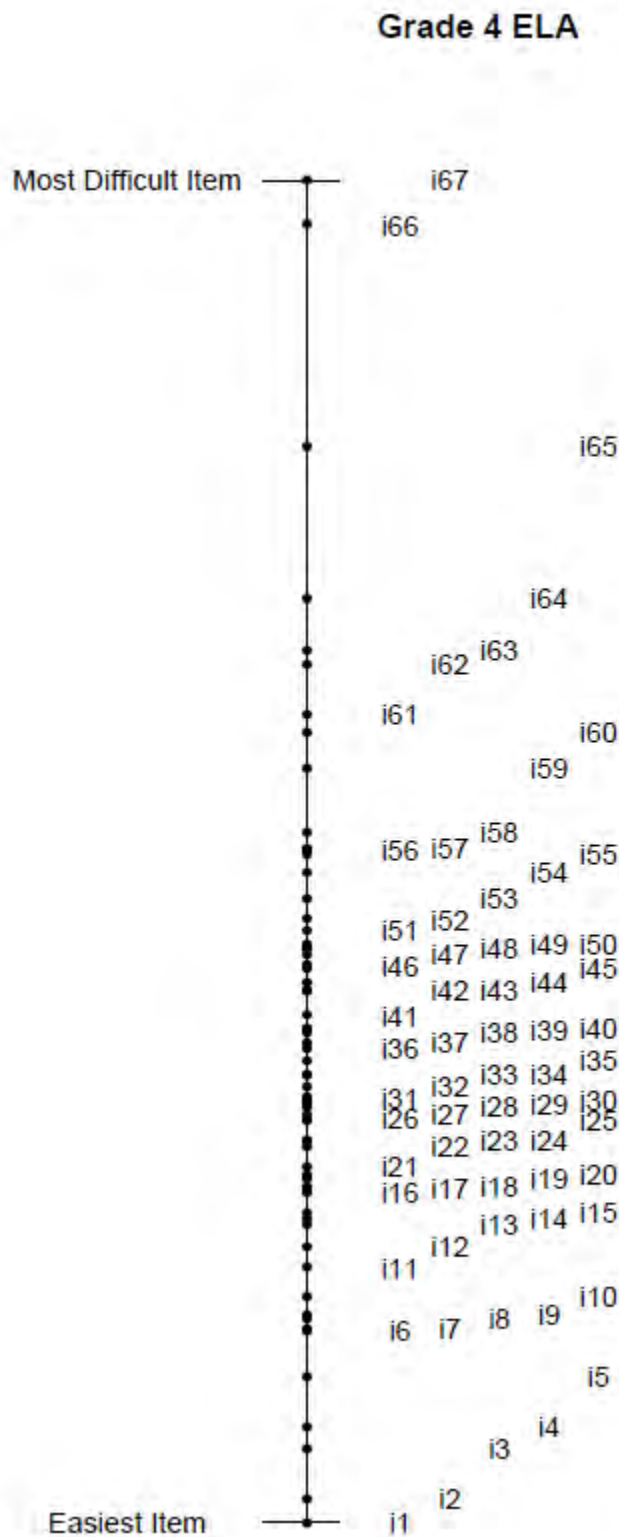


Figure G3. OIB Item Data Plot – Grade 5 ELA

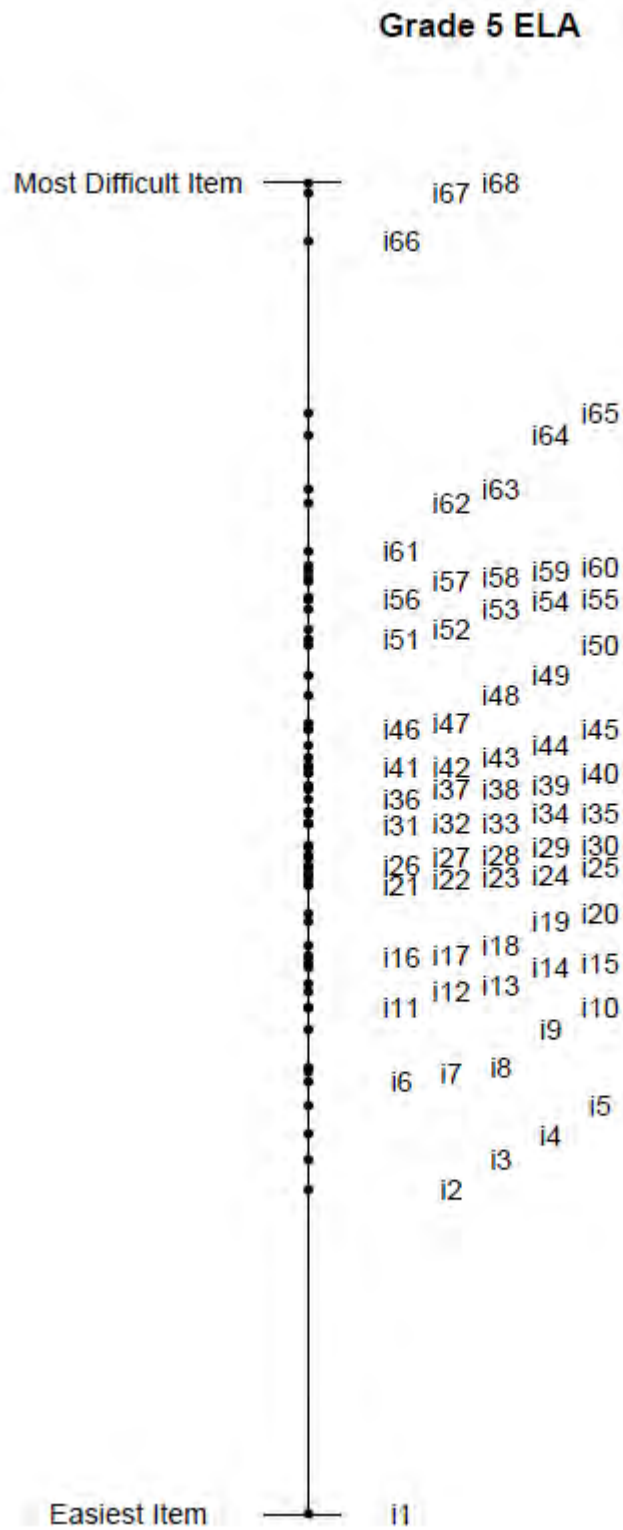




Figure G4. OIB Item Data Plot – Grade 6 ELA

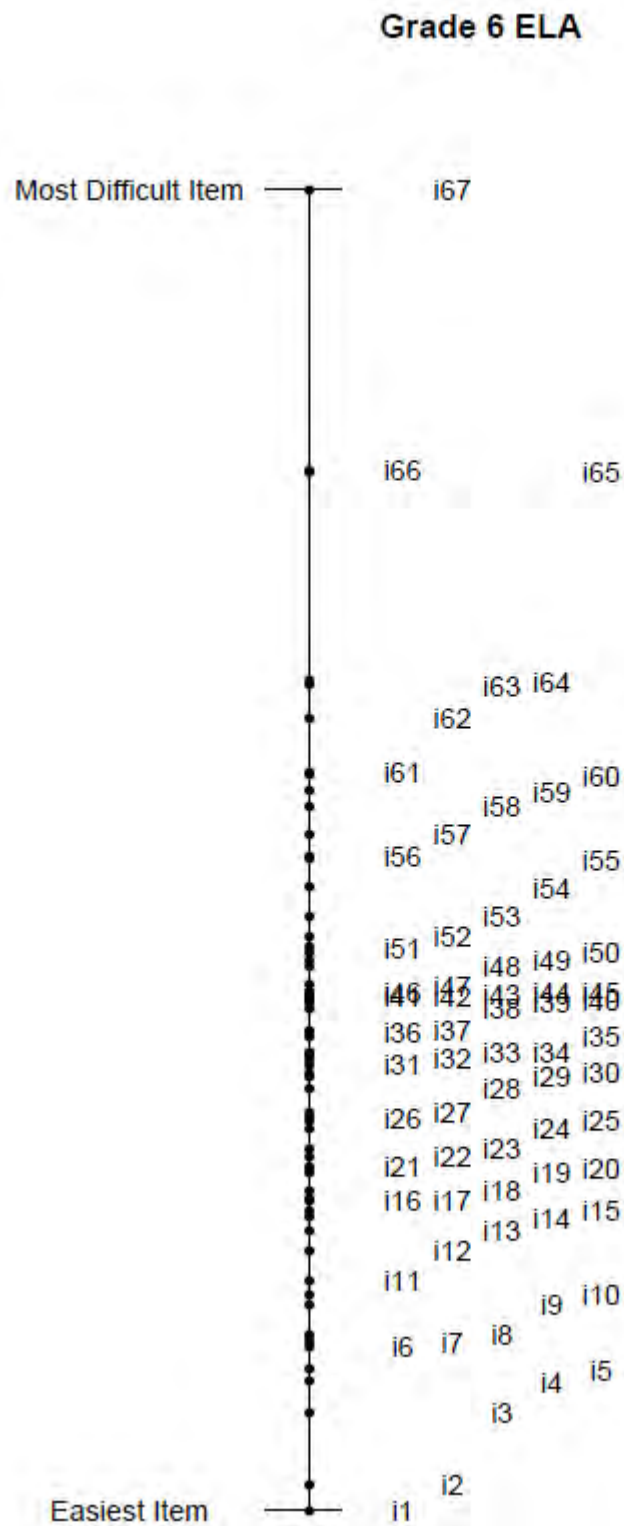


Figure G5. OIB Item Data Plot – Grade 7 ELA

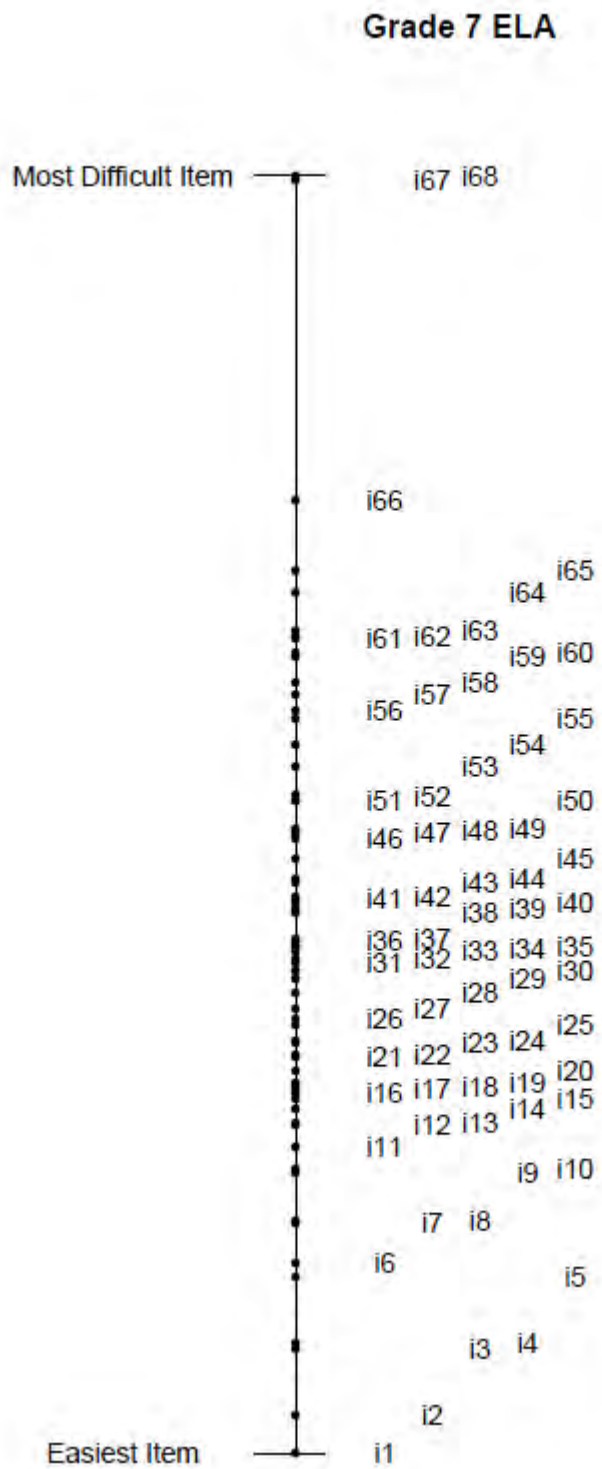


Figure G6. OIB Item Data Plot – Grade 8 ELA

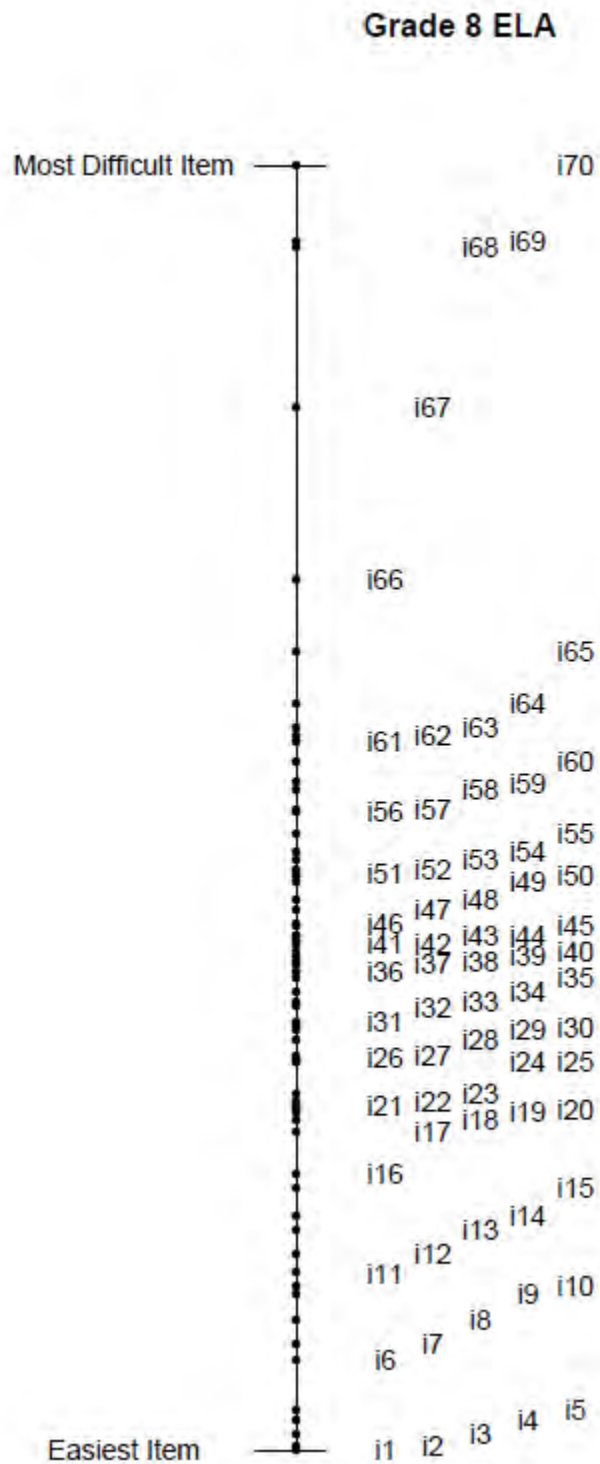


Figure G7. OIB Item Data Plot – Grade 9 ELA

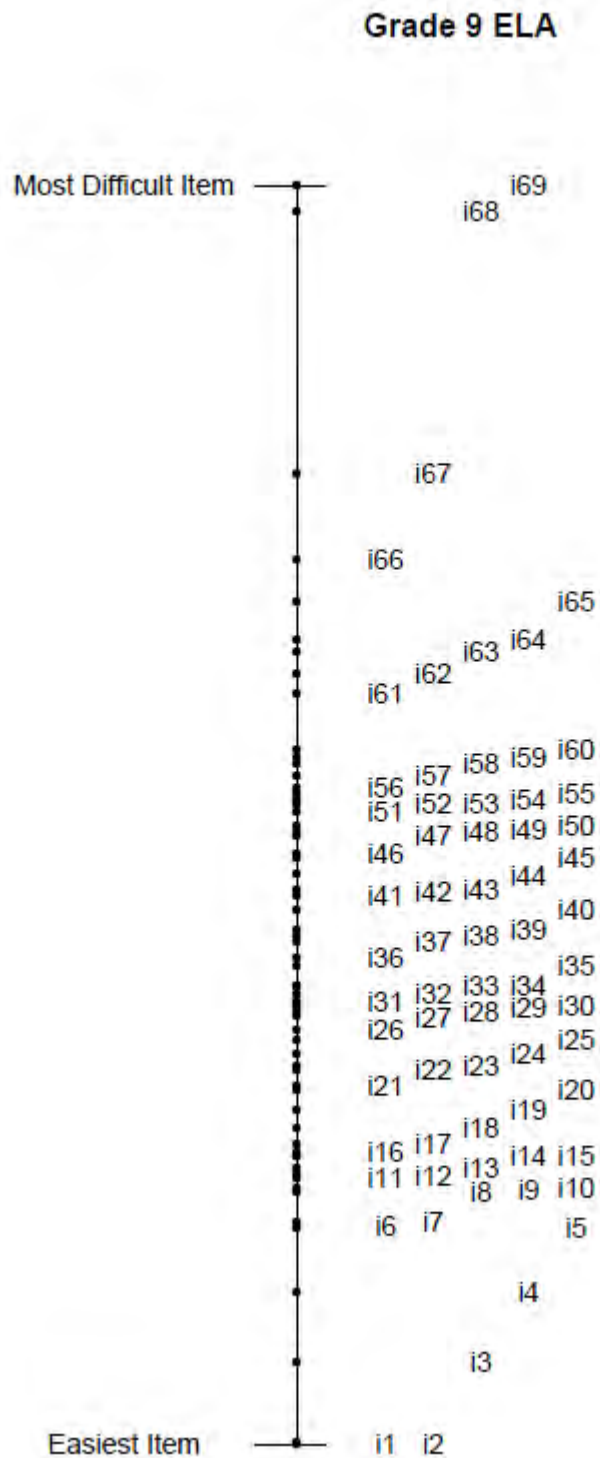


Figure G8. OIB Item Data Plot – Grade 10 ELA

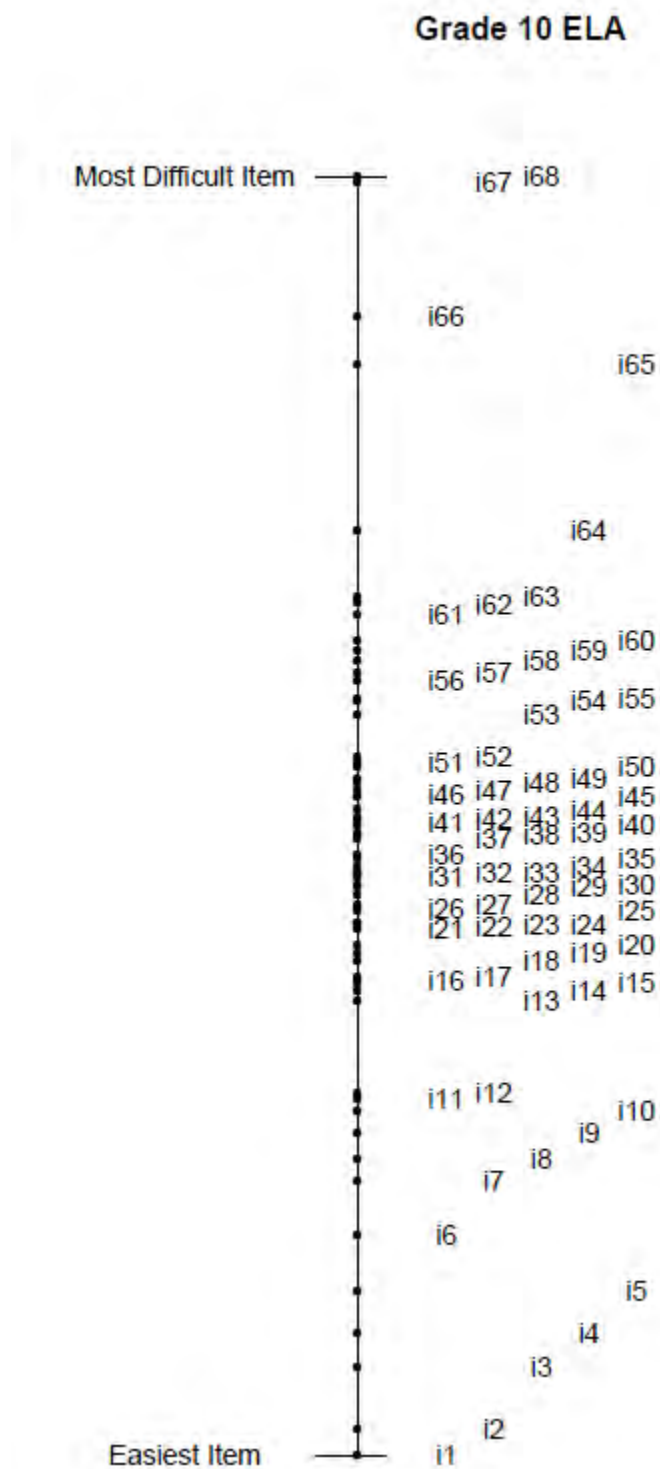


Figure G9. OIB Item Data Plot – Grade 11 ELA

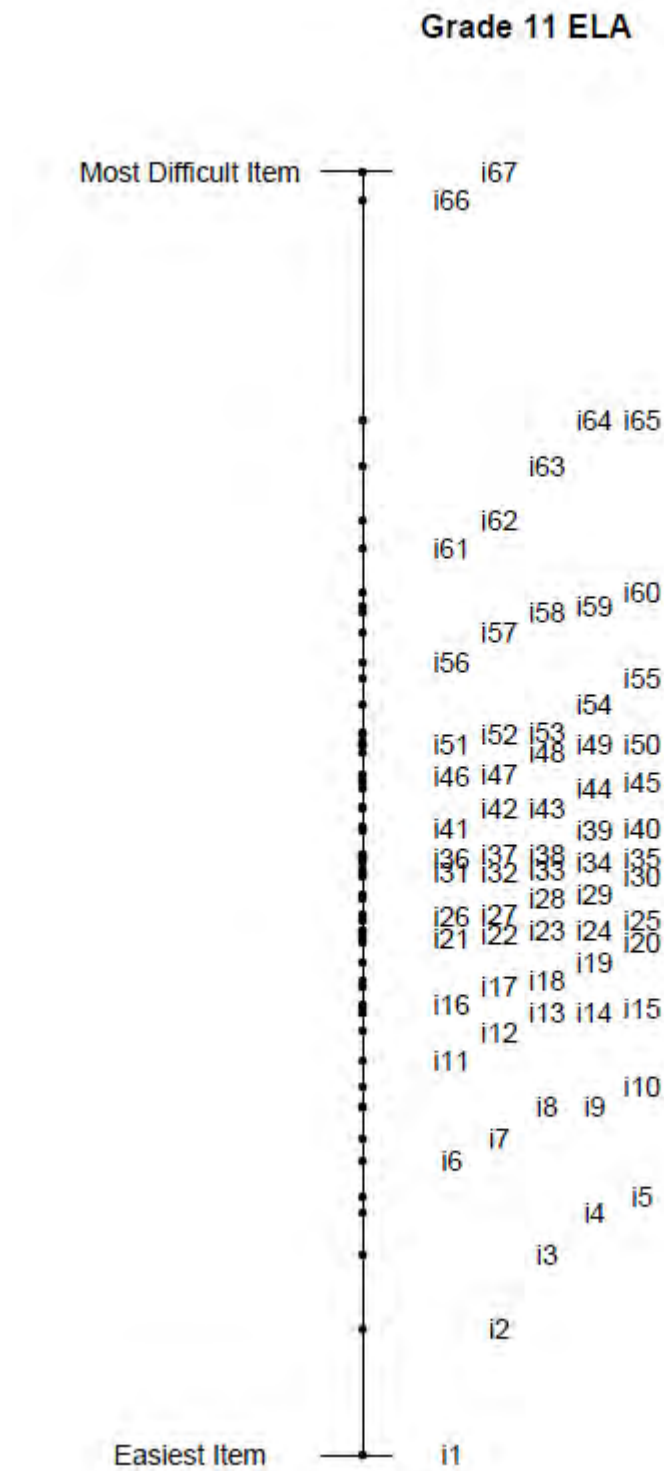


Figure G10. OIB Item Data Plot – Grade 3 Math

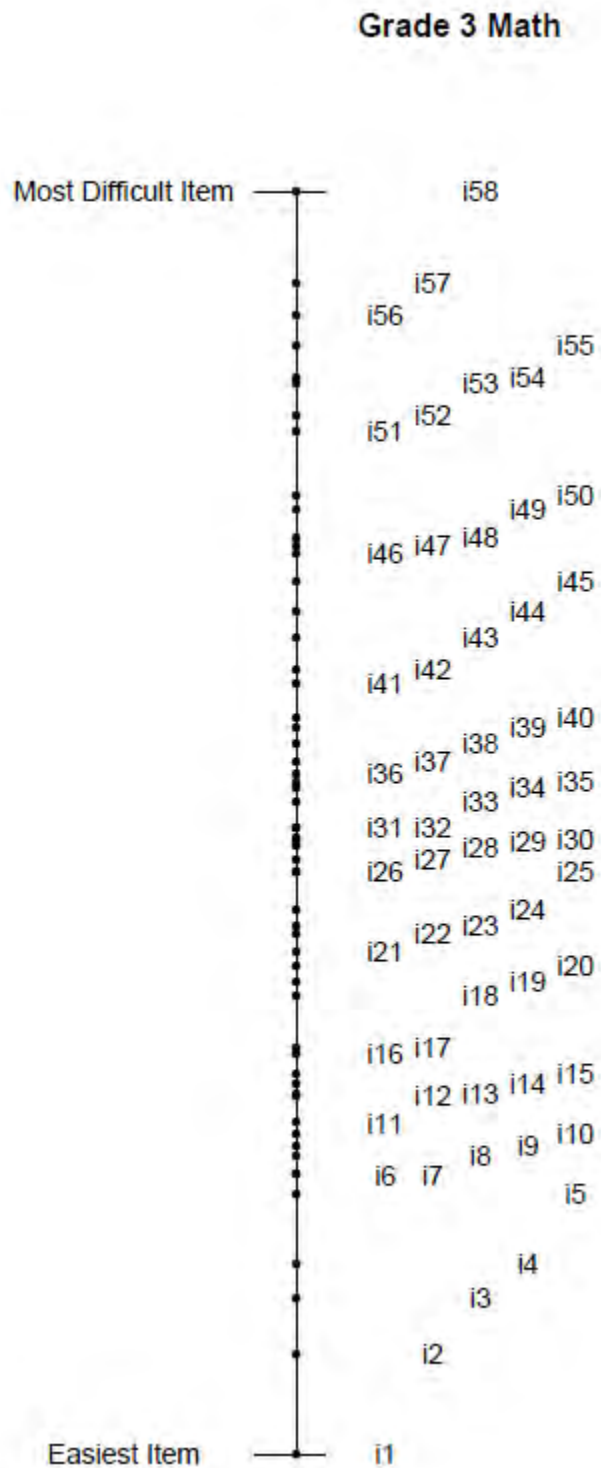


Figure G11. OIB Item Data Plot – Grade 4 Math

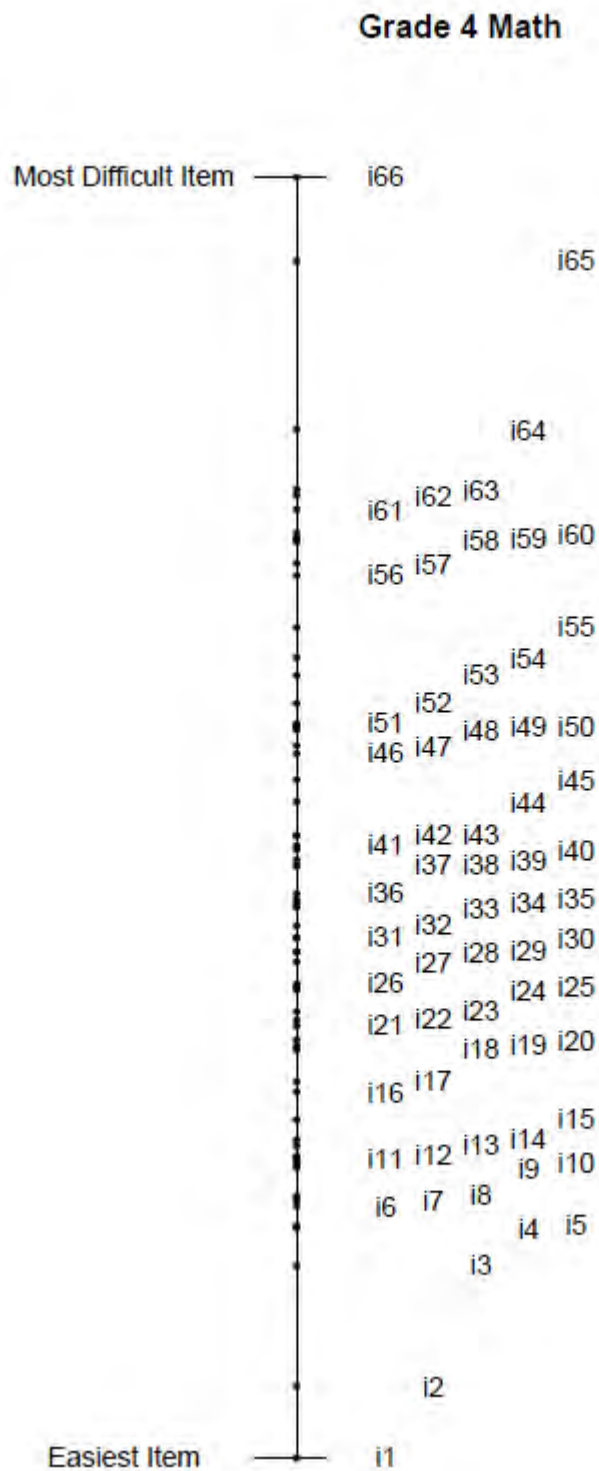




Figure G12. OIB Item Data Plot – Grade 5 Math

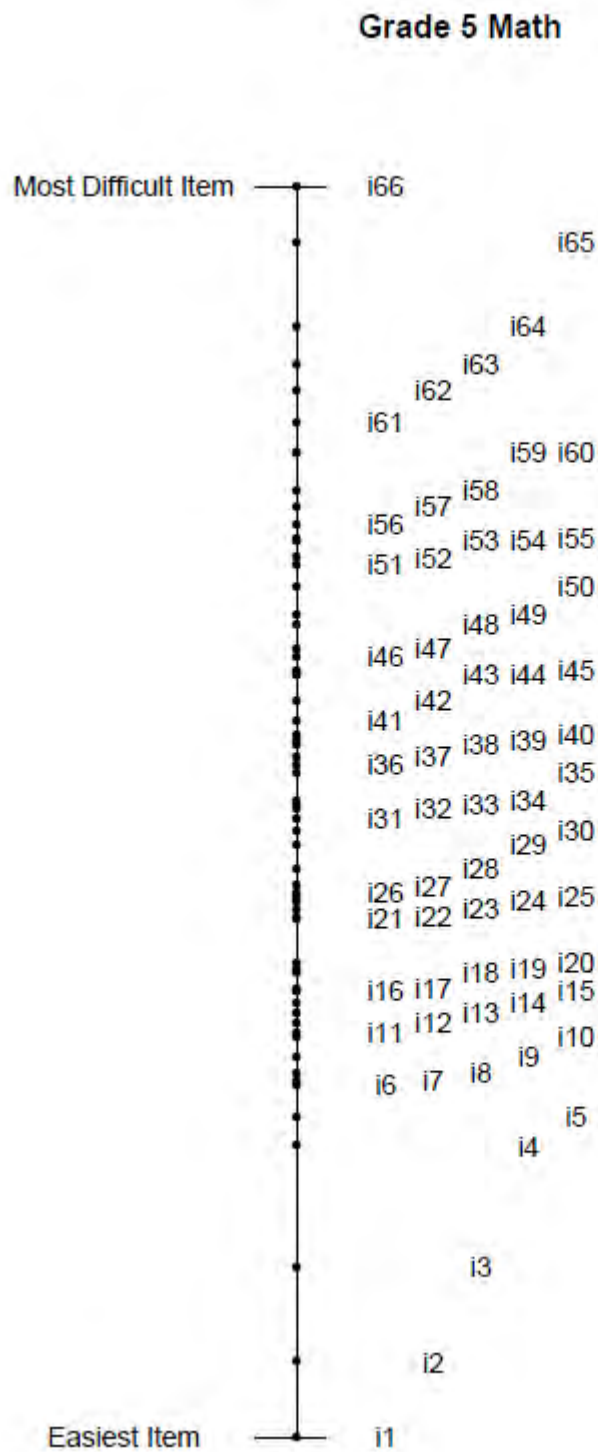


Figure G13. OIB Item Data Plot – Grade 6 Math

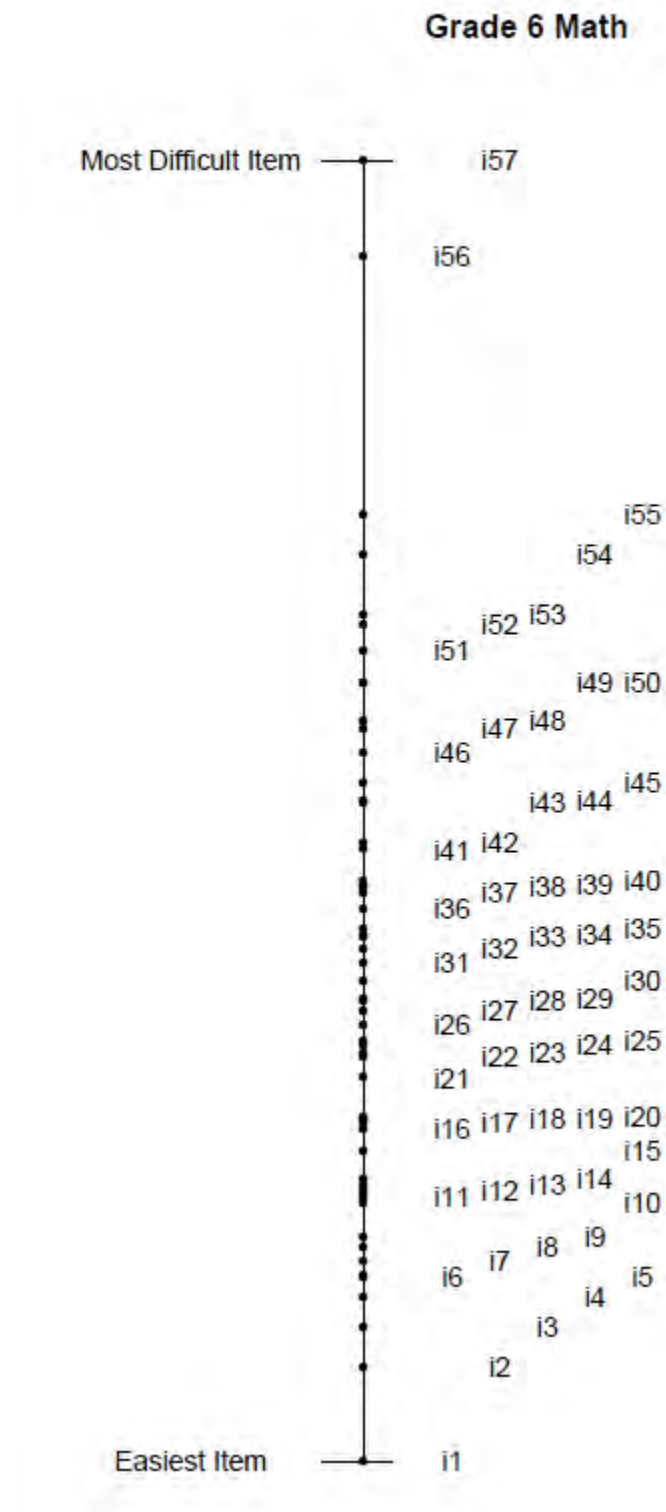


Figure G14. OIB Item Data Plot – Grade 7 Math

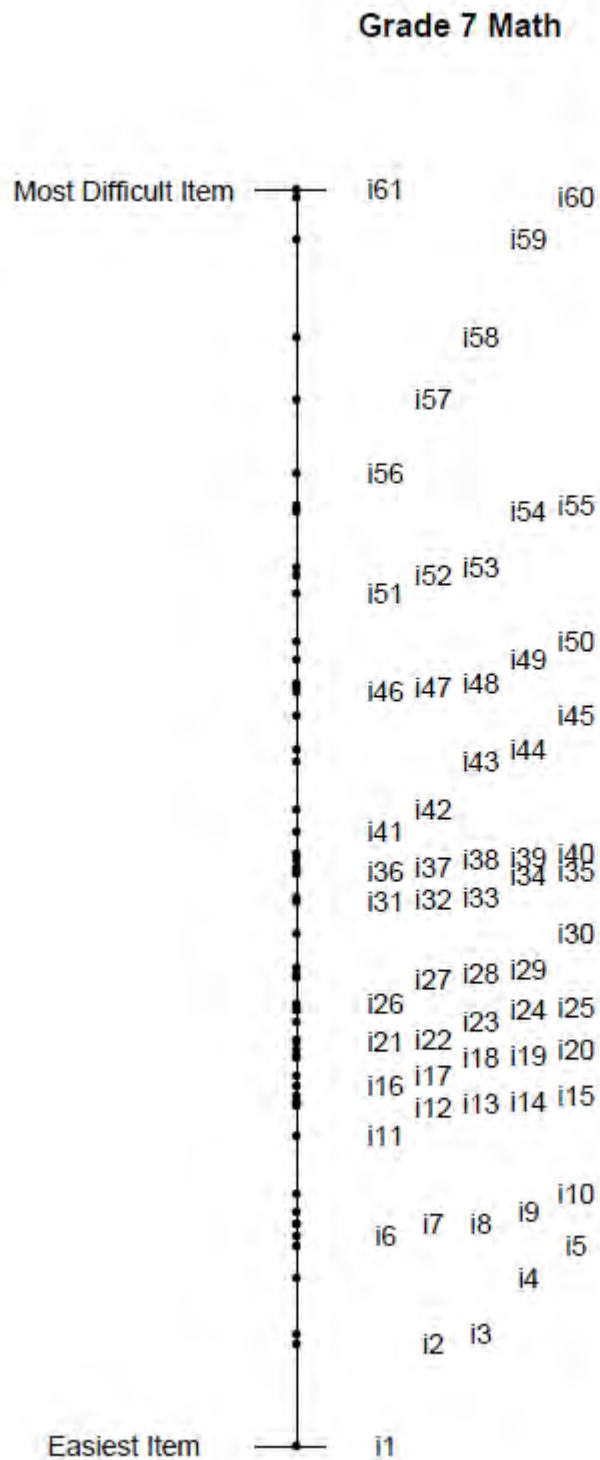


Figure G15. OIB Item Data Plot – Grade 8 Math

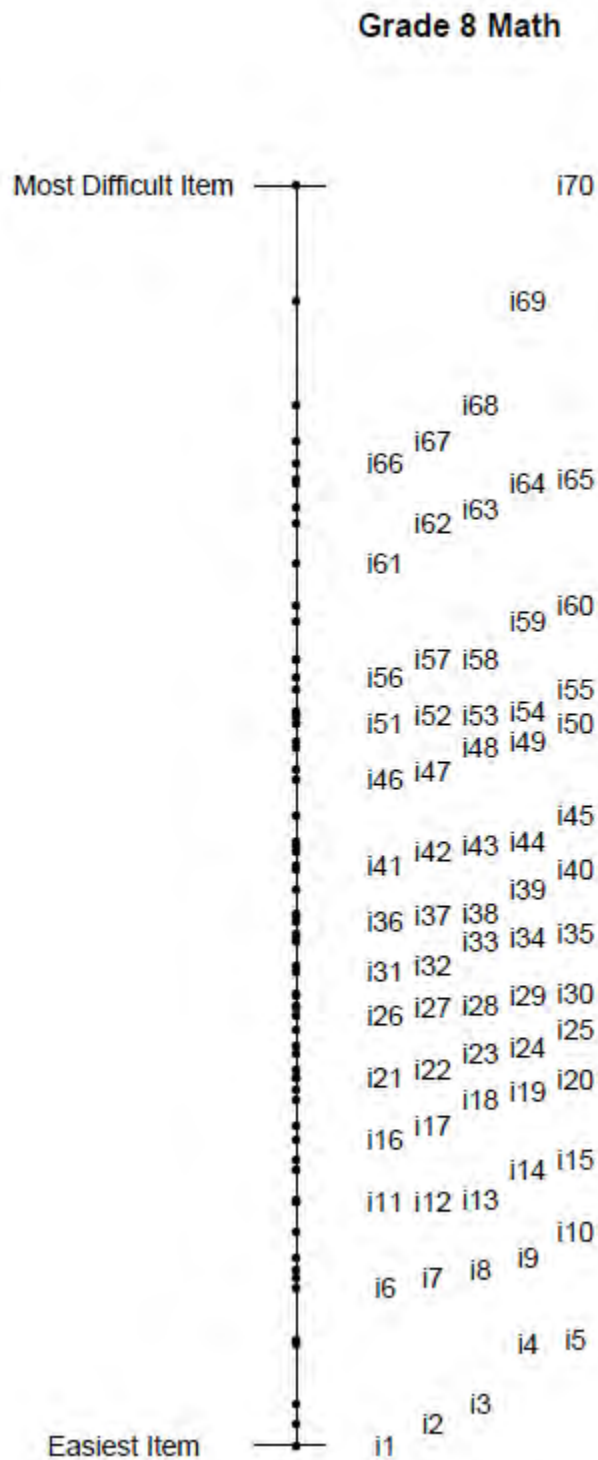


Figure G16. OIB Item Data Plot – Algebra I

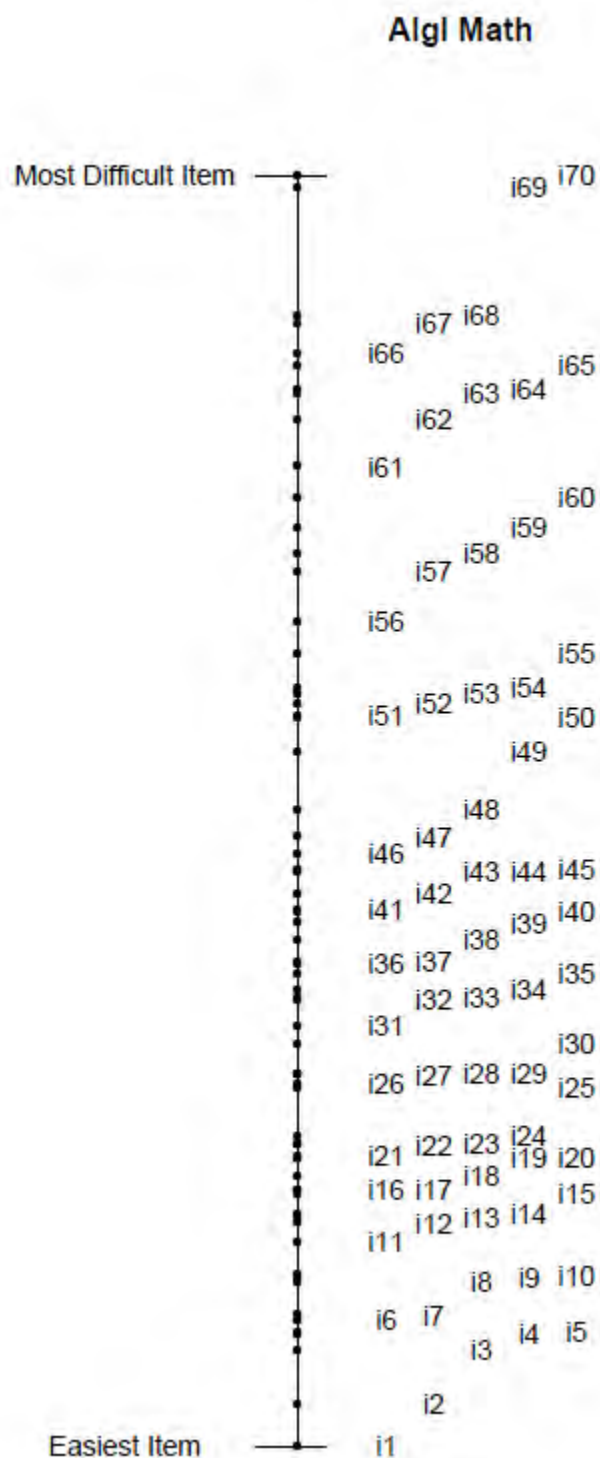


Figure G17. OIB Item Data Plot – Geometry

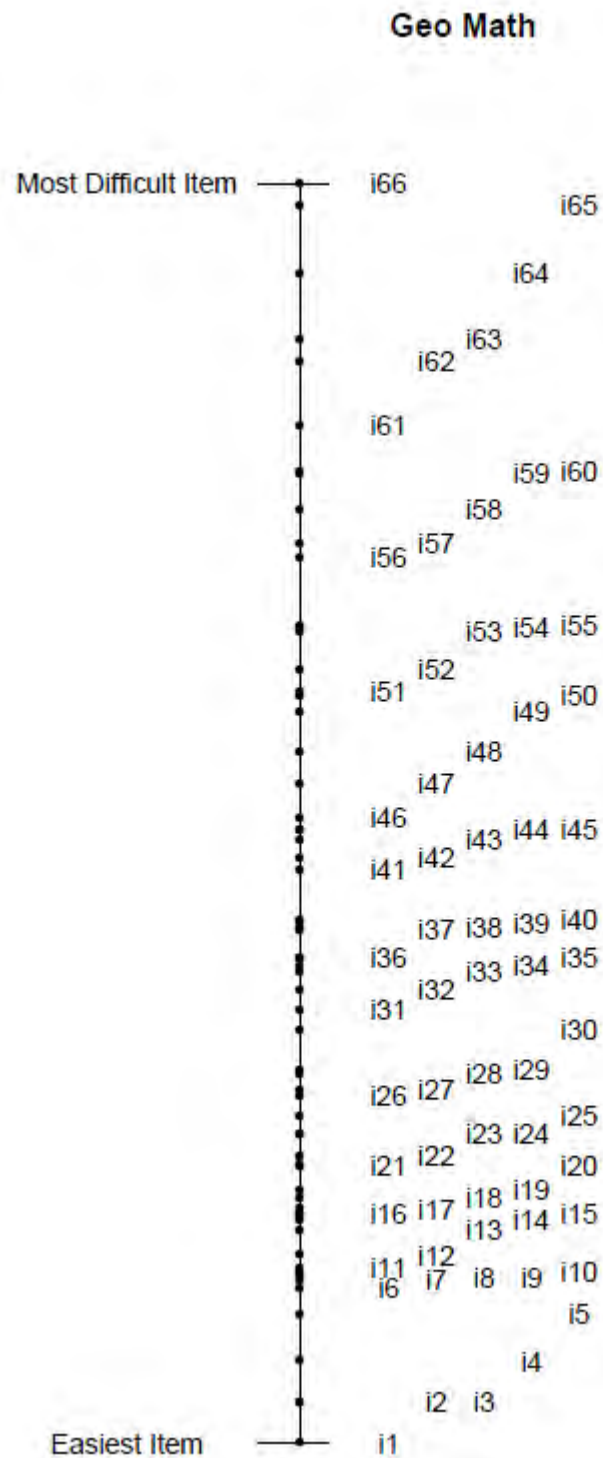
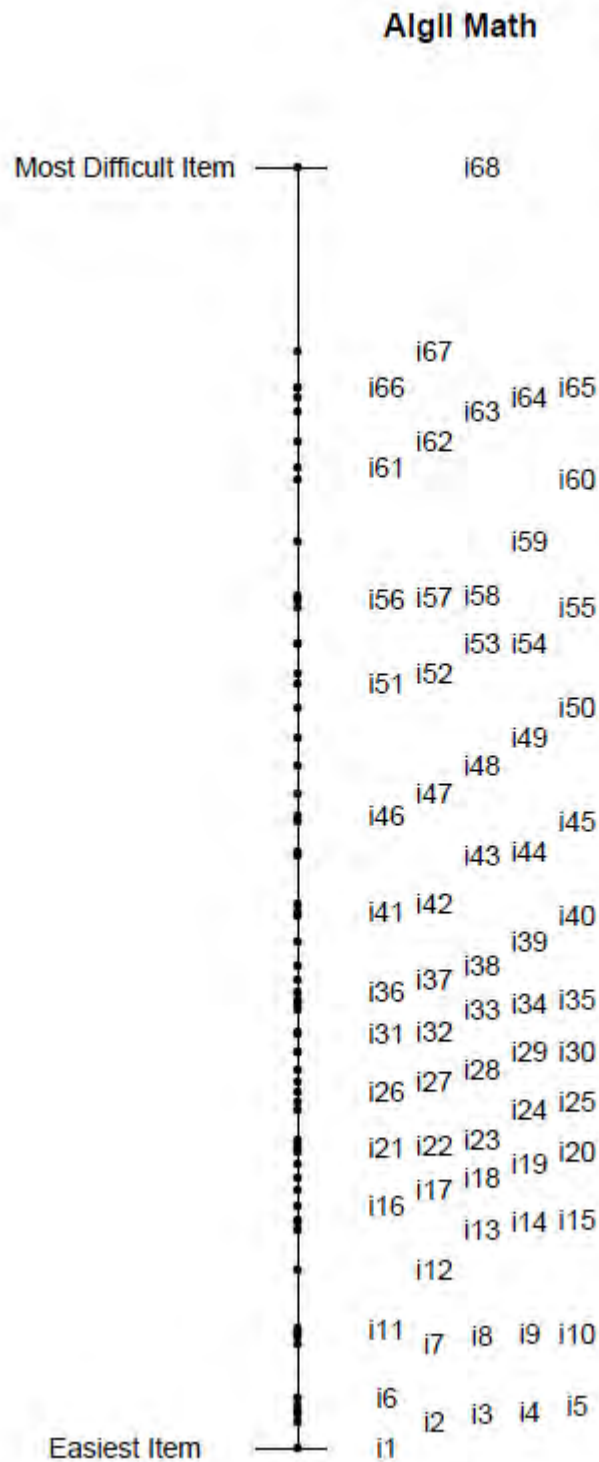


Figure G18. OIB Item Data Plot – Algebra II



## **Appendix H –Bookmark Placement Readiness Forms**



**Document H. AzMERIT Bookmark Placement Readiness Form**

Subject: \_\_\_\_\_

Panelist ID number \_\_\_\_\_

**Preparation for Round 1 – Proficient, Partially Proficient, and Highly Proficient**

	Yes	No
a. The workshop training has prepared me to review the Performance Level Descriptors	<input type="checkbox"/>	<input type="checkbox"/>
b. The training fully explained the concept of a student who just barely meets the criteria described in the Arizona Performance Level Descriptors.	<input type="checkbox"/>	<input type="checkbox"/>
c. The workshop training has prepared me to review the Ordered Item Book (OIB).	<input type="checkbox"/>	<input type="checkbox"/>
d. The workshop training has prepared me to fill out the bookmark placement sheet.	<input type="checkbox"/>	<input type="checkbox"/>

**I have answered, “Yes” to the above questions and I understand what I need to do to place my Bookmarks.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

**If I answered “No” to any of the above questions, I received additional training.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

**Following the additional training, I now feel sufficiently trained on what I need to do to place my Bookmarks.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

Test \_\_\_\_\_

Panelist ID number \_\_\_\_\_

**Preparation for Round 2 – Proficient, Partially Proficient, and Highly Proficient**

	Yes	No
a. The workshop training has prepared me to review the Performance Level Descriptors	<input type="checkbox"/>	<input type="checkbox"/>
b. The training fully explained the concept of a student who just barely meets the criteria described in the Arizona Performance Level Descriptors.	<input type="checkbox"/>	<input type="checkbox"/>
c. The workshop training has prepared me to review the Ordered Item Book (OIB).	<input type="checkbox"/>	<input type="checkbox"/>
d. The workshop training has prepared me to fill out the bookmark placement sheet.	<input type="checkbox"/>	<input type="checkbox"/>
e. The training fully explained the panel feedback data that was presented.	<input type="checkbox"/>	<input type="checkbox"/>
f. The training fully explained the student impact data that was presented.	<input type="checkbox"/>	<input type="checkbox"/>

**I have answered, “Yes” to the above questions and I understand what I need to do to place my Bookmarks.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

**If I answered “No” to any of the above questions, I received additional training.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

**Following the additional training, I now feel sufficiently trained on what I need to do to place my Bookmarks.**

Yes \_\_\_\_\_ No \_\_\_\_\_ Initials \_\_\_\_\_

## **Appendix I – Investigation of Equating Student Scores Across AzMERIT Test Administration Modes**

# Equating Student Scores across AzMERIT Test Administration Modes

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## Introduction

Prior to conducting the standard setting workshops and reporting test scores for the spring 2015 assessments, a mode comparability study was performed to evaluate differences in test performance attributable to the mode of test administration, and to identify the linking constants necessary to place item parameter estimates across modes on a common scale for test scoring and reporting. A single, fixed operational test form was used to administer AzMERIT online. In addition, a nearly equivalent test form was constructed for paper-based test administrations. Although the paper form was designed to be as similar as possible to the online form, some online items that could not be rendered on paper were modified or replaced. The common items between the online and paper forms provided the basis for a mode comparability study to compare the performance of items between the online and paper modes of test administration. In addition to the operational test items, both the online and paper tests included embedded field test blocks. On paper, these item slots were used to field test online items rendered for paper administration as well as to establish a link to the previous AIMS scale. Only operational items that were common to both the online and paper forms were used as the basis for the mode comparability study.

A matched samples design (Way, Davis, and Fitzpatrick, 2006) was used to investigate mode comparability. A covariate regression approach was implemented to construct equivalent groups of students taking the AzMERIT assessments for both modes of test administration. The regression analysis identified for each student a predicted score on the paper AzMERIT assessment from previous year achievement, covarying demographic variables that included gender, ethnicity, income level status, English language learner (ELL) status, and Individualized Education Program (IEP) in the development of the prediction equation. A nearest neighbor search procedure was then applied to the predicted AzMERIT scores to select the equivalent groups of students. This procedure resulted in the identification of two matched samples for each assessment to conduct the mode comparability study.

## Common Items and Test Form Equivalence

The online and paper versions of the AzMERIT test forms were designed to be as equivalent as possible. Because AzMERIT is designed as an online assessment, there were inevitably some items that could not be rendered for paper administration. In these instances, different items were used to measure the same content standards between the paper and online test forms.

Table 1 shows the total number of operational test items per assessment and the number of common items used for the mode comparability study. As Table 1 indicates, most operational items were common across the online and paper-based test administration modes, indicating that ADE was successful in producing paper equivalents for almost all AzMERIT items. Nevertheless, there were some items that could not be rendered for paper administration, and in those instances different

items were used to assess the same standards between the online and paper test forms. The test characteristic curves in Appendix I.1 show that the distribution of test information across the online and paper test forms was nearly identical, indicating that although the online and paper test forms were not identical, the forms measured student achievement equivalently across the ability distribution. The mode comparability analyses were based only on the items common to both forms.

**Table 1: Number of Common Items Between Online and Paper Test Forms**

Grade	Subject	Number Of Items	
		Total Operational	Common Items
ELA			
3	ELA	42	41
4	ELA	42	37
5	ELA	42	41
6	ELA	42	42
7	ELA	42	40
8	ELA	42	40
9	ELA	44	43
10	ELA	44	44
11	ELA	44	42
Math			
3	Math	45	43
4	Math	45	45
5	Math	45	45
6	Math	47	46
7	Math	47	47
8	Math	47	46
	Algebra I	47	46
	Geometry	47	46
	Algebra II	47	46

## Matched Samples

The following procedures were used to define the matched samples between the online and paper test administration modes.

1. For students participating in the paper test administration, 2015 AzMERIT raw scores were regressed on previous spring achievement, individual level demographic variables and school level variables. The previous achievement indicator was the 2014 AIMS score, where available, and/or the previous year Stanford 10 scores. The individual demographic variables included ethnicity, gender, free and reduced lunch (FRL) eligibility, and English language learner (ELL) and special education (SPED) status. School level variables included ratio of African American students, ratio of Hispanic students, ratio of multi-ethnic students, ratio of FRL, ratio of ELL, ratio of SPED and average achievement as indexed by the 2014 AIMS scores. The ratio of group enrollment in schools for the demographic variables was categorized as low or high by median split, while school level achievement was classified by quintile. Variables were

entered into the equation in a stepwise fashion so that only variables accounting for significant variation in the prediction of 2015 AzMERIT test performance were included in the final regression equation:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n$$

where  $\hat{Y}$  is the predicted 2015 AzMERIT raw score,  $\beta_n$  refers to the estimated regression weight for covariate  $X_n$ .

2. With the obtained regression weights, the prediction equation was applied to all students participating in AzMERIT across test administration modes, yielding a predicted 2015 AzMERIT raw score for each student.

3. Using the predicted 2015 raw score distribution, the sample with the smaller number of students was divided in 20 equal sized groups. The predicted raw score distribution cut points determined by the equal-sized groups was used to divide students in the larger sample into each of the 20 ability level groups. Within each of the 20 ability groups in the larger sample, a random sample of students was drawn, equal in size to the number of online students in each of the predicted ability level groups. Table 2 shows the size of the matched samples for each of the AzMERIT assessments.

**Table 2: Number of Students Selected for Each of the Matched Samples**

Grade	Subject	Size of Matched Samples
<b><i>ELA</i></b>		
3	ELA	35220
4	ELA	33380
5	ELA	32880
6	ELA	34420
7	ELA	33080
8	ELA	34360
9	ELA	20420
10	ELA	20400
11	ELA	15680
<b><i>Math</i></b>		
3	Math	28400
4	Math	30700
5	Math	31140
6	Math	37420
7	Math	31780
8	Math	32140
	Algebra I	25760
	Geometry	19520
	Algebra II	16360

## Comparing the Matched Samples

The tables in Appendix I.2 provide a comparison of the demographic and achievement characteristics between the matched online and paper samples drawn for the mode comparability study. For each sample, the table presents the proportion of students classified in each demographic category, the mean and standard deviation of test score on the spring 2014 AIMS assessment, as well as the average predicted raw score on spring 2015 AzMERIT assessment.

Note that the raw score summary is based on the complete set of operational items between the paper and online version of the AzMERIT, and not only the items common to both modes. Results indicate that the demographic composition and prior achievement of the matched samples is quite similar and that the matching procedure was effective.

## Results

IRT parameter estimates were calibrated independently for the matched online and paper test administration mode samples. The linking constant necessary to bring the matched sample paper item parameters onto the matched sample online scale was then computed. The linkages were computed in two ways. Mean linking was taken as the difference between the average item difficulty estimates from the matched sample paper calibration and the average item difficulty estimates from the matched sample online item parameter estimates. Mean-sigma linking equating was also used to place the paper item parameters on the online scale.

Table 2 shows the mean difficulty of test items resulting from independent calibrations based on the matched samples from the online and paper test administrations, as well as the linking constants necessary to bring the paper item parameters onto the online scale. Linking constants were based on the difference between the mean item difficulties between the online and paper forms using all common items as linking items. Mean-sigma equating constants are also provided. As the linking constants indicate, parameter estimates resulting from the independent calibrations of the paper and online assessments are quite comparable. The largest identified mode effect was for items on the grade 3 ELA assessment which were, on average, slightly more difficult for students who were administered the assessment online. Examination of the linked item parameter estimates indicated that items with the greatest discrepancy between online and paper were not isolated within a particular content standard or item type.

**Table 2: Linking Constants Resulting from the Matched Samples Equating**

		Mean Item Difficulties		Mean Linking Constant	Mean-Sigma Linking Constants	
Grade	Subject	Online	Paper		Slope	Intercept
ELA						
3	ELA	0.10	-0.03	0.13	1.02	0.13
4	ELA	0.14	0.18	-0.04	0.96	-0.03
5	ELA	0.09	0.06	0.04	0.93	0.04
6	ELA	0.17	0.13	0.04	0.94	0.05
7	ELA	0.01	0.01	-0.01	0.89	-0.01
8	ELA	0.05	0.03	0.02	0.94	0.02
9	ELA	0.11	0.07	0.03	0.91	0.04
10	ELA	0.06	0.07	0.00	0.89	0.00
11	ELA	-0.01	-0.01	0.00	0.83	0.00
Math						
3	Math	-0.01	-0.04	0.03	0.96	0.03
4	Math	0.00	0.00	0.00	0.92	0.00
5	Math	0.00	0.00	0.00	0.93	0.00
6	Math	-0.03	-0.03	0.00	0.95	0.00
7	Math	0.00	0.00	0.00	0.99	0.00
8	Math	0.02	0.03	-0.01	1.02	-0.01
	Algebra I	-0.01	-0.03	0.01	0.99	0.01
	Geometry	0.00	-0.01	0.00	0.97	0.00
	Algebra II	-0.01	-0.01	0.00	0.99	0.00

To help evaluate the magnitude of these results, Table 3 presents, for each test, the expected scale score difference that would be observed if the mode correction constant was applied to the scoring of paper based assessments relative to scoring paper tests using the online bank parameters. For example, because the items in the grade 3 ELA assessment are slightly easier when administered on paper than online, the ability of students taking paper assessments is slightly overestimated when scored using the online bank item parameters. In this case, applying the mode correction would effectively lower the observed scale score for paper testers by about four points on the AzMERIT scale (about one raw score point), and would result in approximately 1.6% fewer students, statewide, not meeting the proficient performance standard.



**Table 3: Anticipated Impact of Applying the Mode Correction Constant versus Scoring All Assessments on the AzMERIT Reference Scale**

Grade	Subject	Correction Magnitude in AzMERIT Scale Score	Approximate Change in Percentage of Students Reaching Each Performance Standard		
			Partially Proficient	Proficient	Highly Proficient
3	ELA	-4	-1.6%	-1.6%	-2.0%
4	ELA	+1	1.6%	0.0%	0.0%
5	ELA	-1	-1.7%	0.0%	0.0%
6	ELA	-1	0.0%	0.0%	-0.7%
7	ELA	0	0.0%	0.0%	0.0%
8	ELA	-1	-1.6%	0.0%	-1.1%
9	ELA	-1	0.0%	0.0%	0.0%
10	ELA	0	0.0%	0.0%	0.0%
11	ELA	0	0.0%	0.0%	0.0%
3	Math	-1	0.0%	0.0%	0.0%
4	Math	0	0.0%	0.0%	0.0%
5	Math	0	0.0%	0.0%	0.0%
6	Math	0	0.0%	0.0%	0.0%
7	Math	0	0.0%	0.0%	0.0%
8	Math	0	0.0%	0.0%	0.0%
	Algebra I	0	0.0%	0.0%	0.0%
	Geometry	0	0.0%	0.0%	0.0%
	Algebra II	0	0.0%	0.0%	0.0%

We note that ADE independently investigated mode comparability using a strategy based on the operational test administration statewide (Scott, 2015) and this study is included in Appendix I.3. In her study, Scott (2015) first identified which Arizona schools elected to administer AzMERIT online and which on paper, and then examined the two samples of schools for any differences in performance on the spring 2014 administration of AIMS. Having found no difference in mean 2014 performance between the two groups, there would be no expectation for performance differences on AzMERIT except as a function of test administration mode. Following the spring 2015 administration of AzMERIT, ADE examined the performance of schools participating online and on paper, and found performance on the AzMERIT to be comparable between the two sets of schools, as expected based on their spring 2014 AIMS results.

## Conclusion

The mode comparability study described in this document examined the comparability of item parameters and resulting test scores from the online and paper administrations of the spring 2015 AzMERIT assessments in ELA and math. The matched samples analyses revealed generally that item difficulty estimates and resulting student ability estimates were comparable across test administration modes. Small mode effects were identified for some grades in the ELA assessments, with items in the grade 3 assessment proving slightly more difficult when administered online. Even for the largest effect in grade 3 ELA, the magnitude of the mode difference was quite small, amounting to just under one raw score point (approximately four point on the AzMERIT scale), impacting the proficient rate by about 1.6%. Given the generally strong comparability of item difficulty across mode, ADE may consider adopting a single set of bank parameters for scoring student responses on the AzMERIT across the online and paper test administration modes.

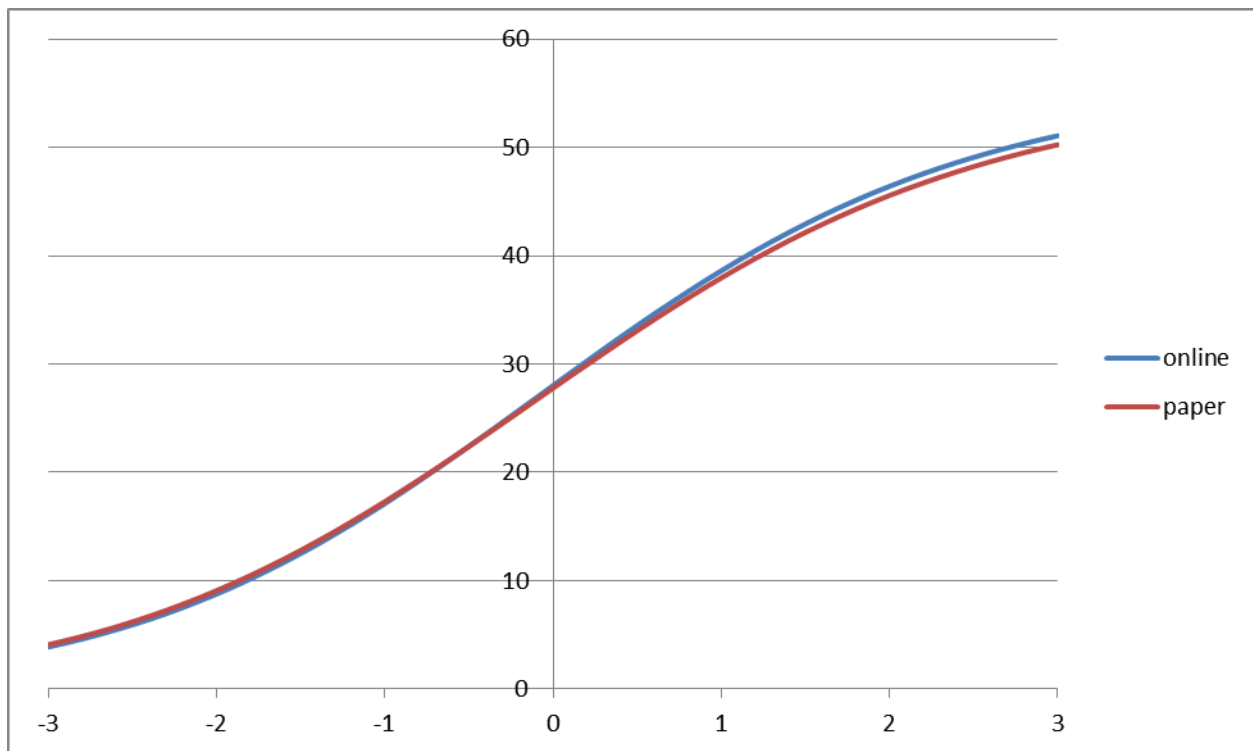
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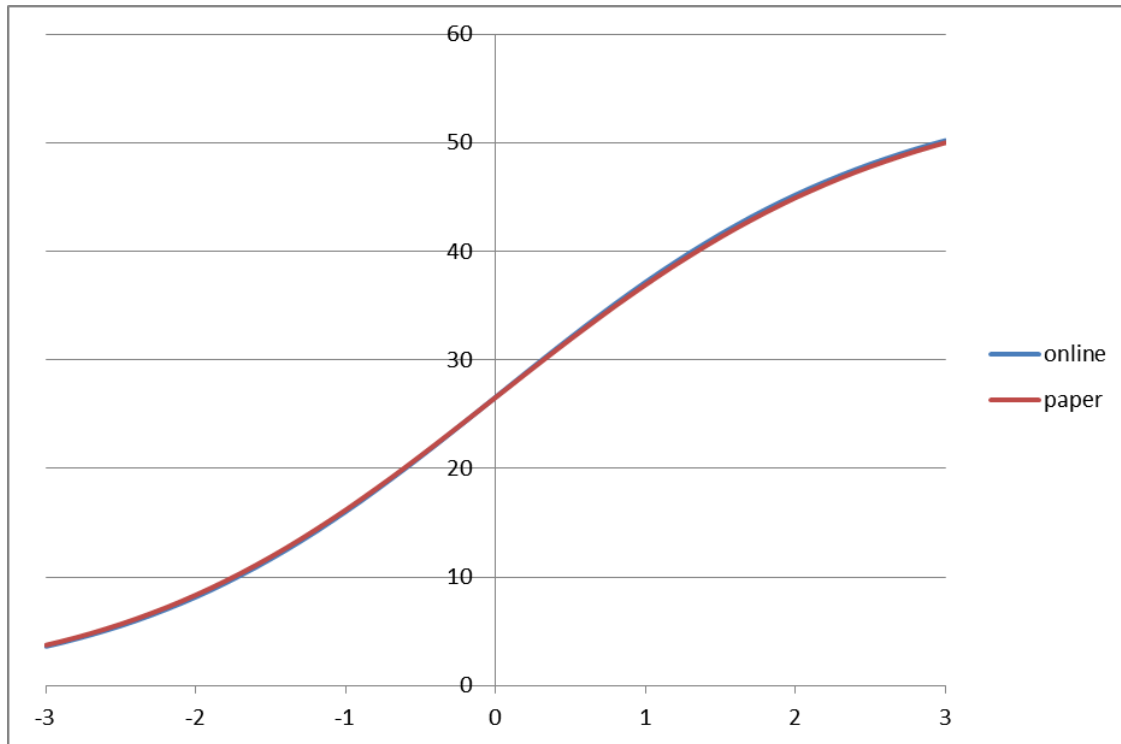
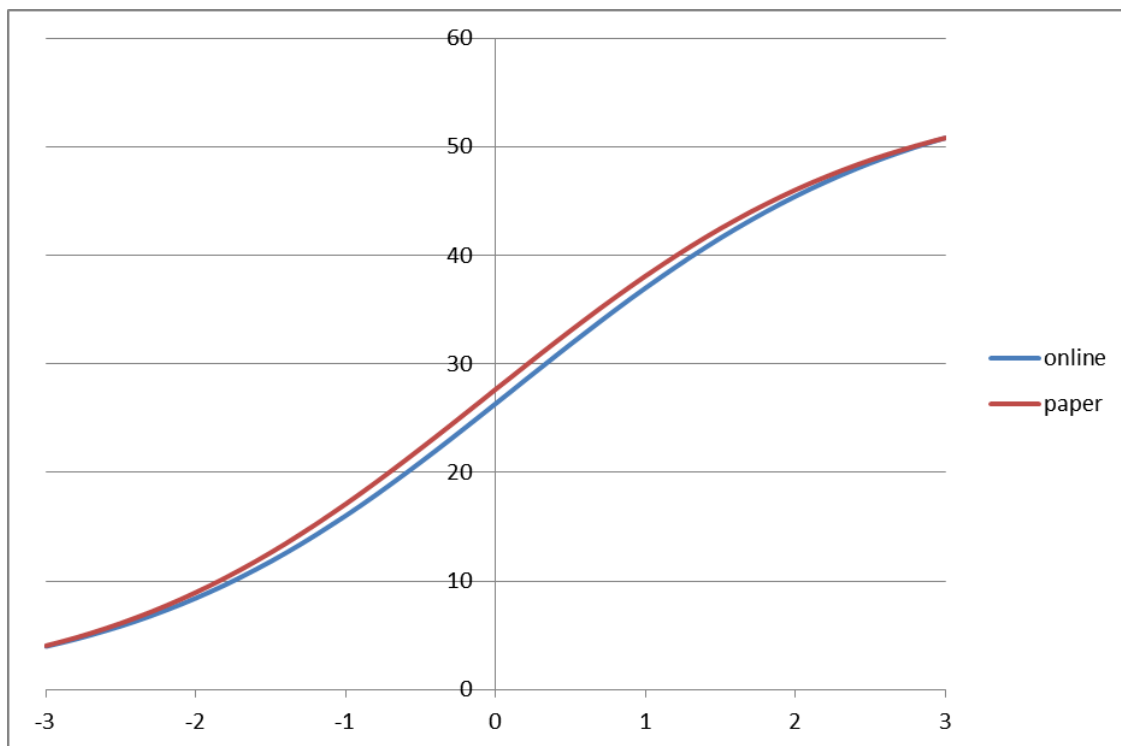
- Scott, L. (2015). *Analysis of Mode Comparability of AzMERIT's Online and Paper Administrations for Spring 2015*. Unpublished manuscript, Arizona Department of Education.
- Way, W. D., Davis, L. L., & Fitzpatrick, S. (2006, April). Score comparability of online and paper administrations of the Texas Assessment of Knowledge and Skills. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

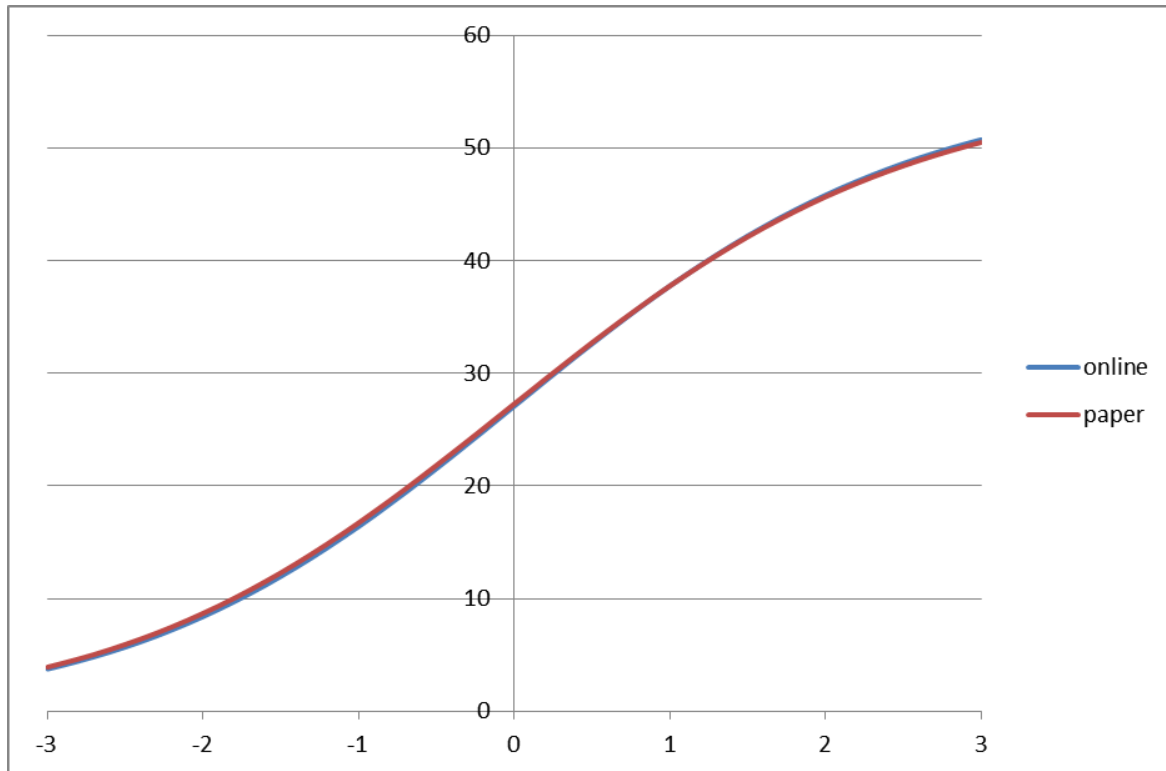
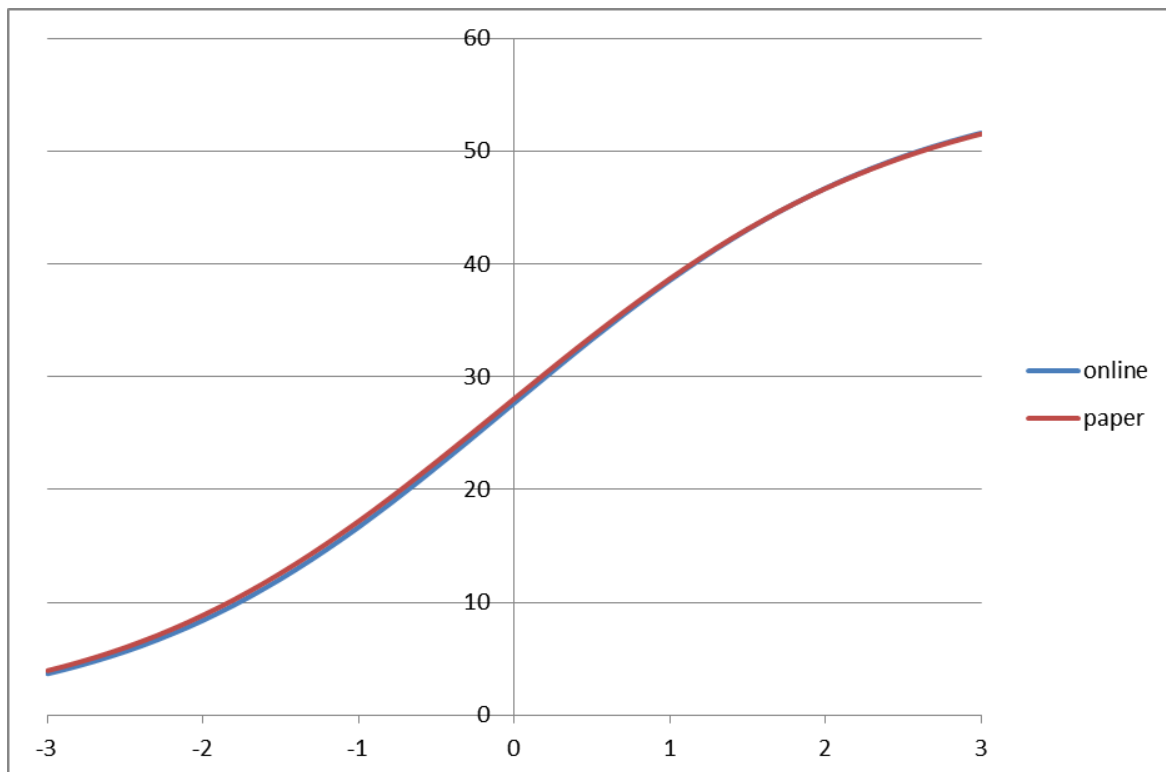
## Appendix I.1 – Test Characteristic Curves of Online and Paper Test Forms

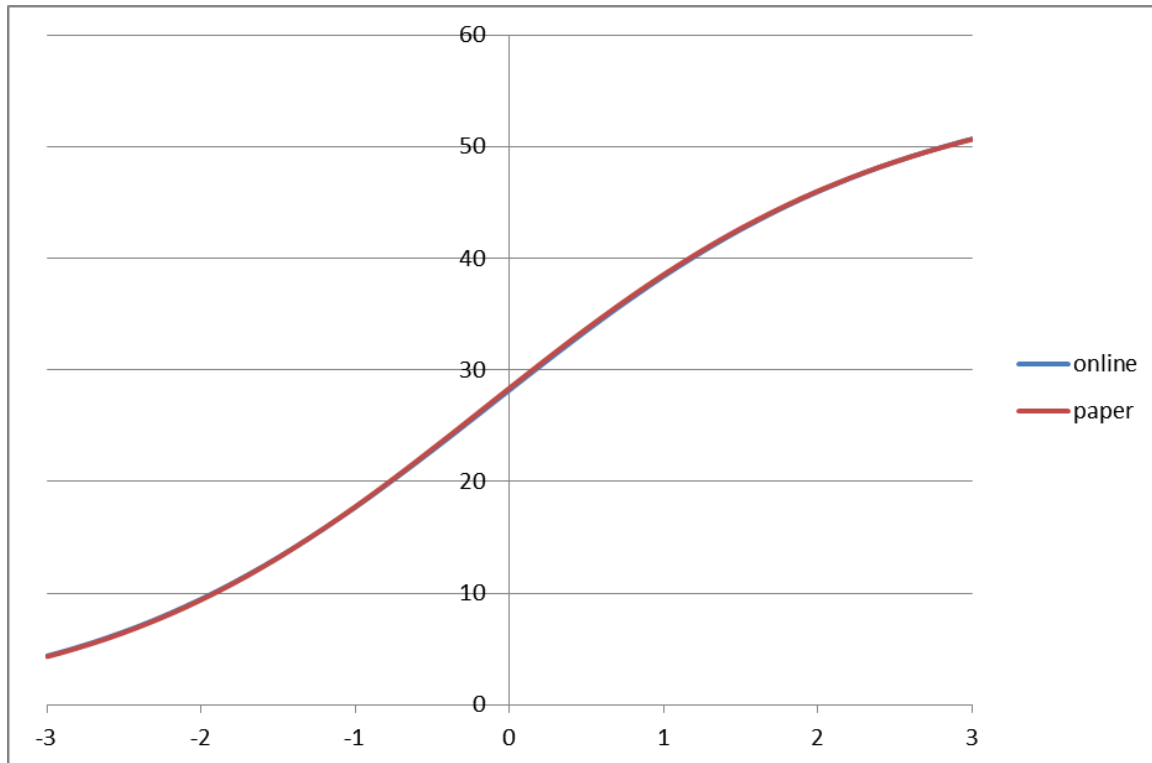
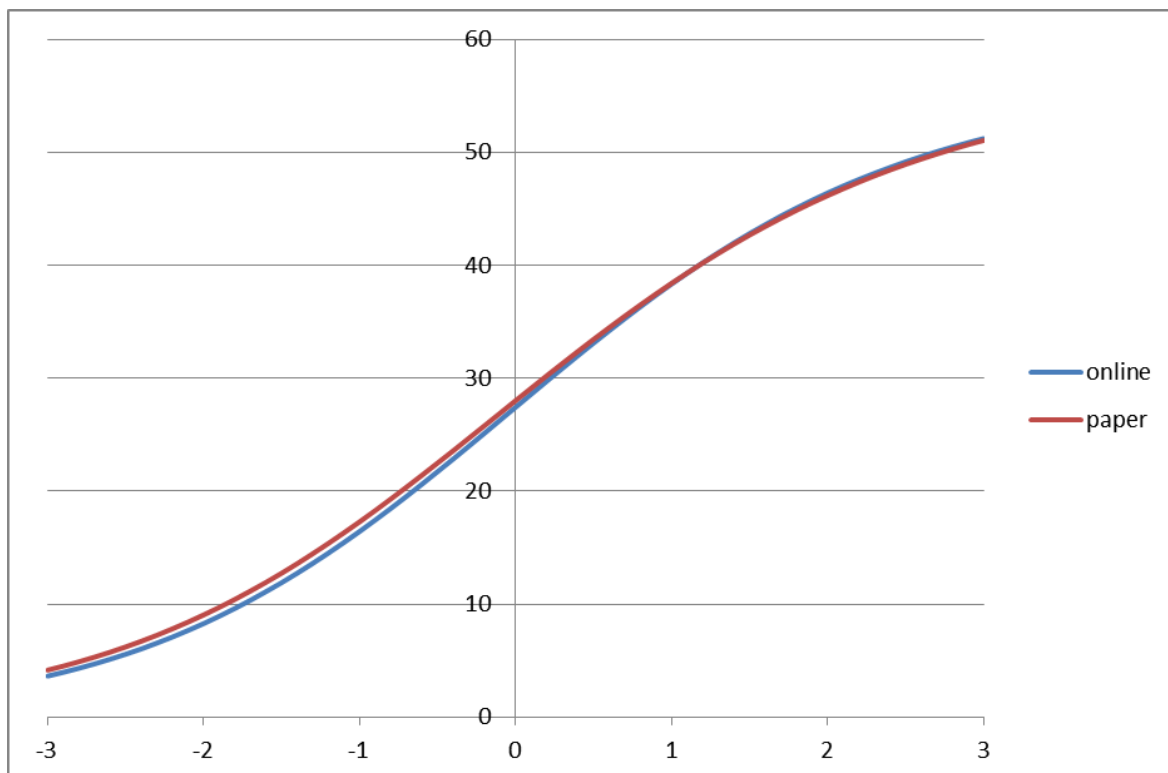
The figures in Appendix I.2 present the test characteristic curves of the online and paper test forms, which represent the distribution of test information across each form. The x-axis represents overall student ability estimate in logit measure, and for each ability estimate, the y-axis represents the total raw score points that a student can theoretically achieve.

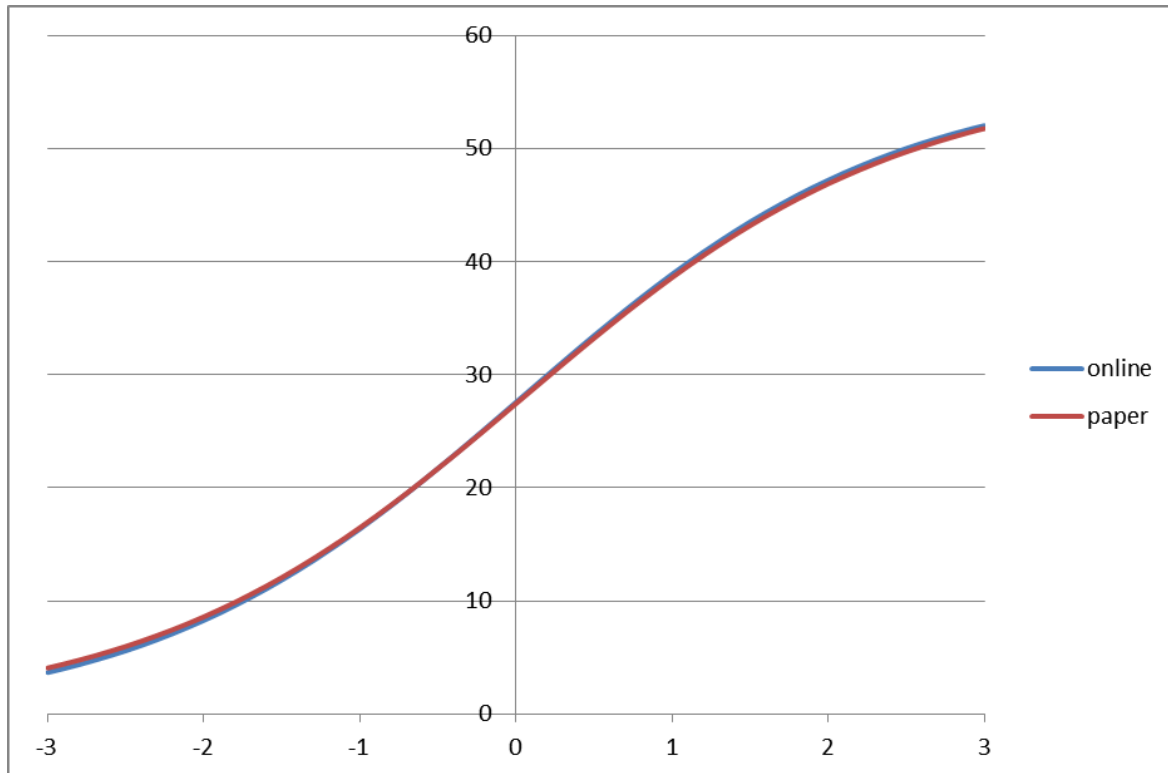
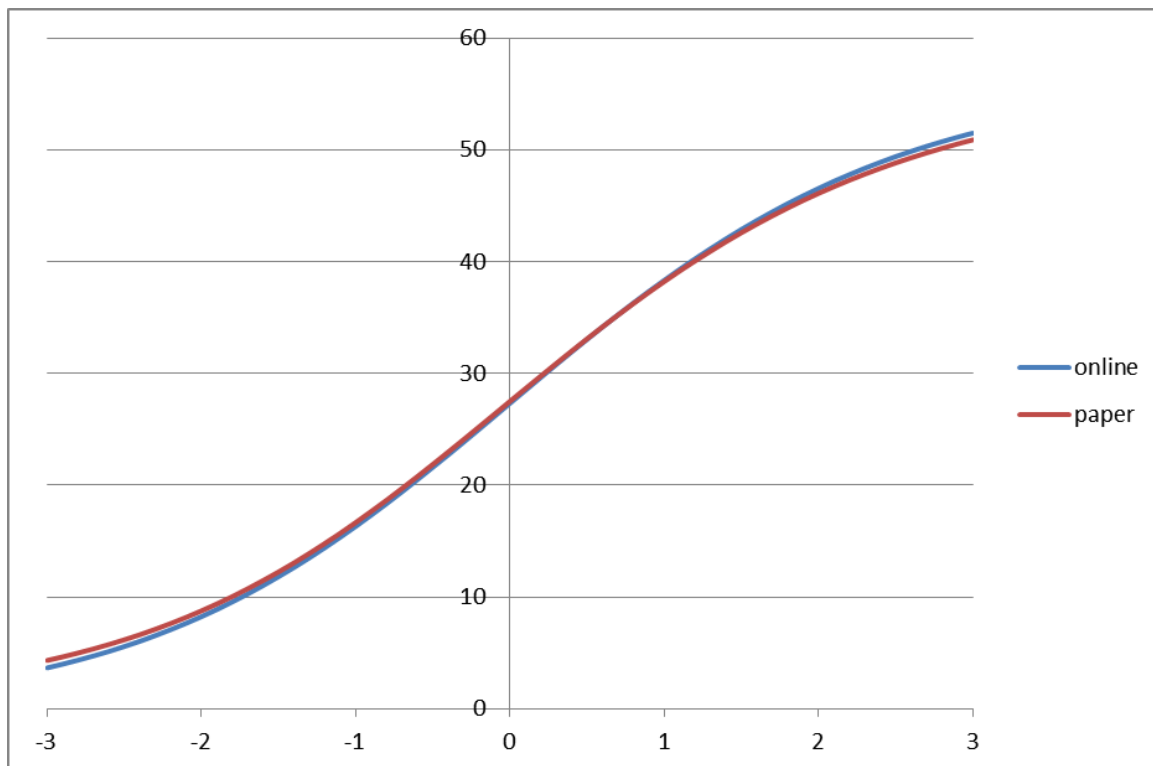
**Figure I.1.1. Test Characteristic Curves for Online and Paper Forms – Grade 3 ELA**

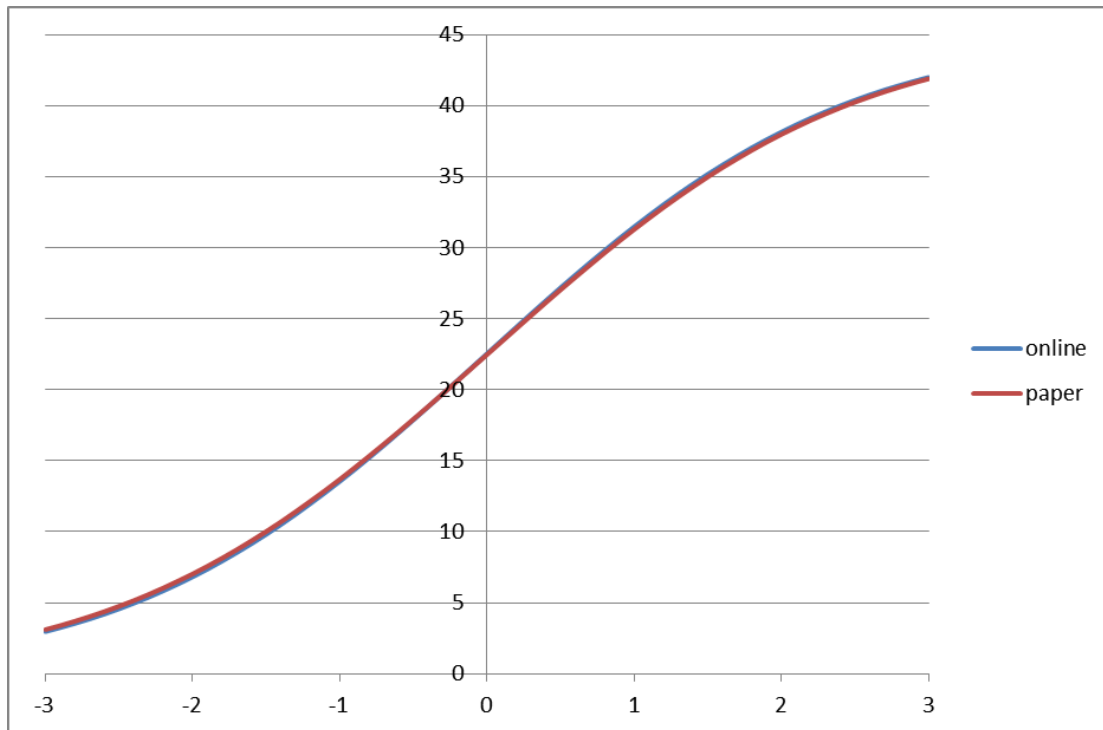
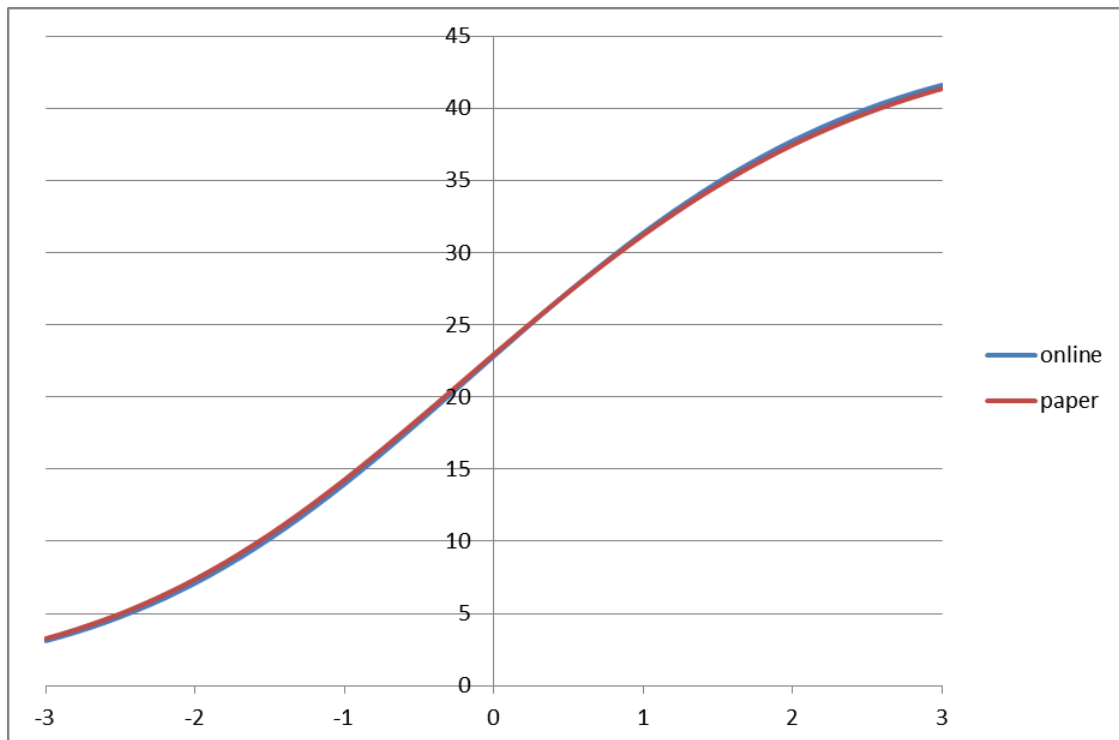


**Figure I.1.2. Test Characteristic Curves for Online and Paper Forms – Grade 4 ELA****Figure I.1.3. Test Characteristic Curves for Online and Paper Forms – Grade 5 ELA**

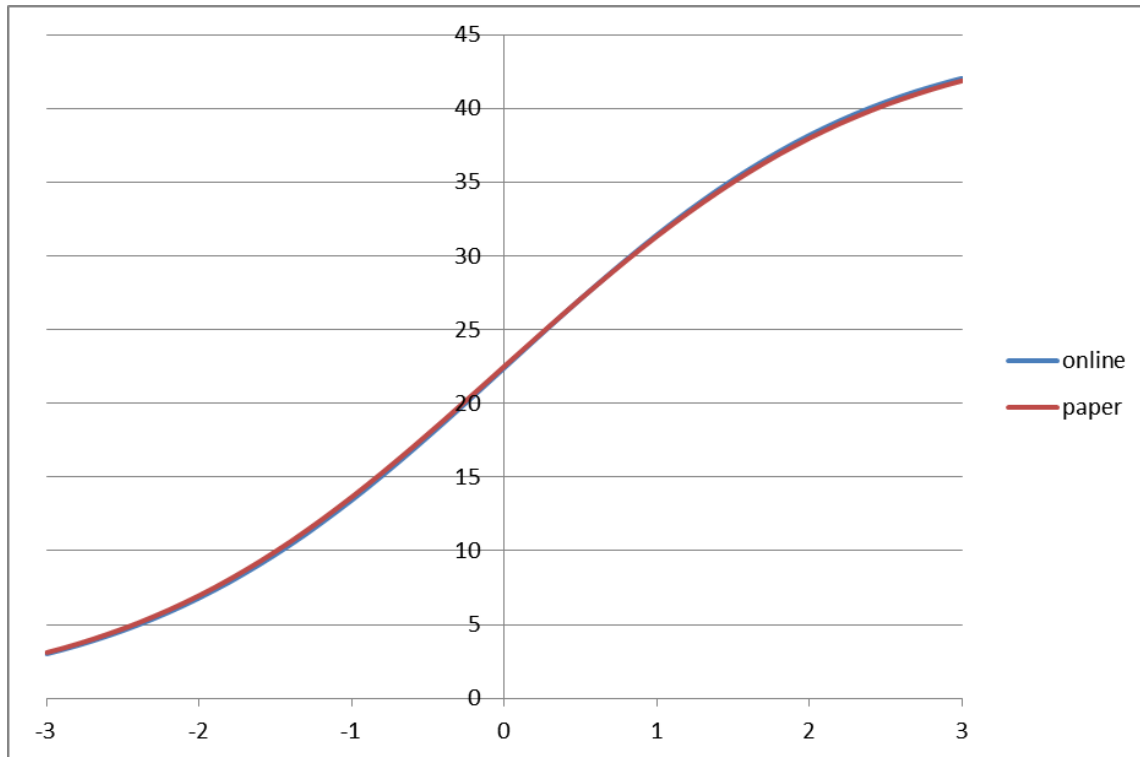
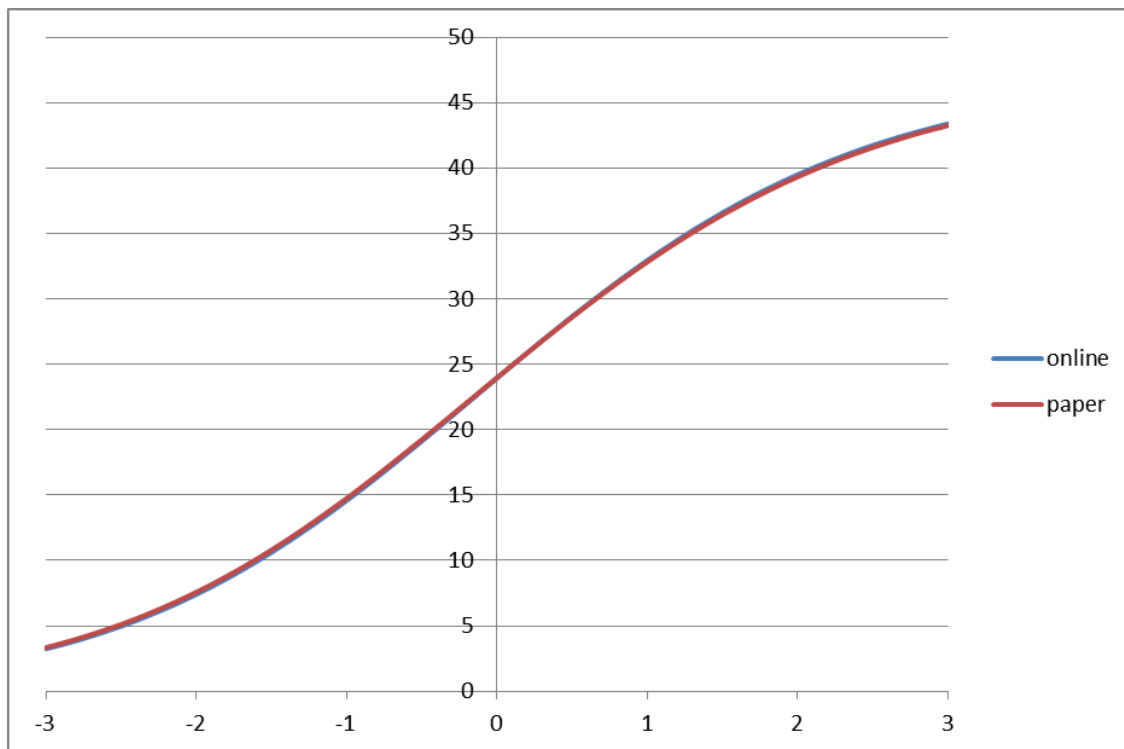
**Figure I.1.4. Test Characteristic Curves for Online and Paper Forms – Grade 6 ELA****Figure I.1.5. Test Characteristic Curves for Online and Paper Forms – Grade 7 ELA**

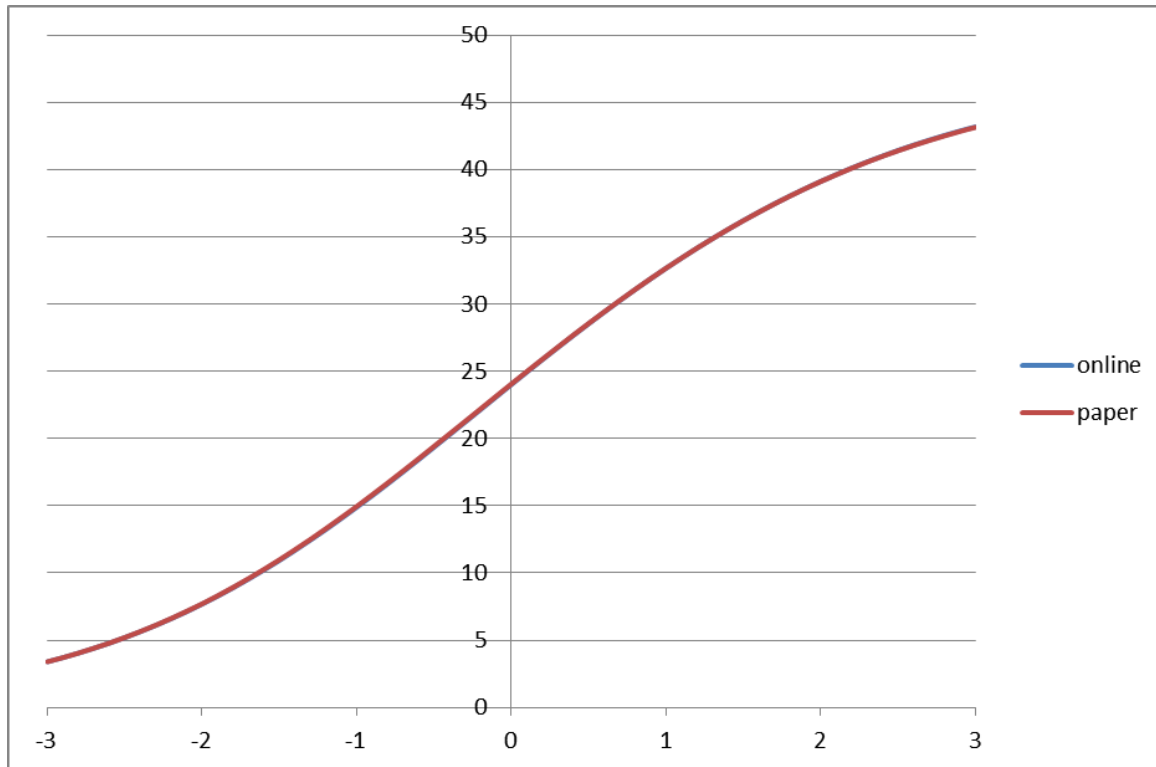
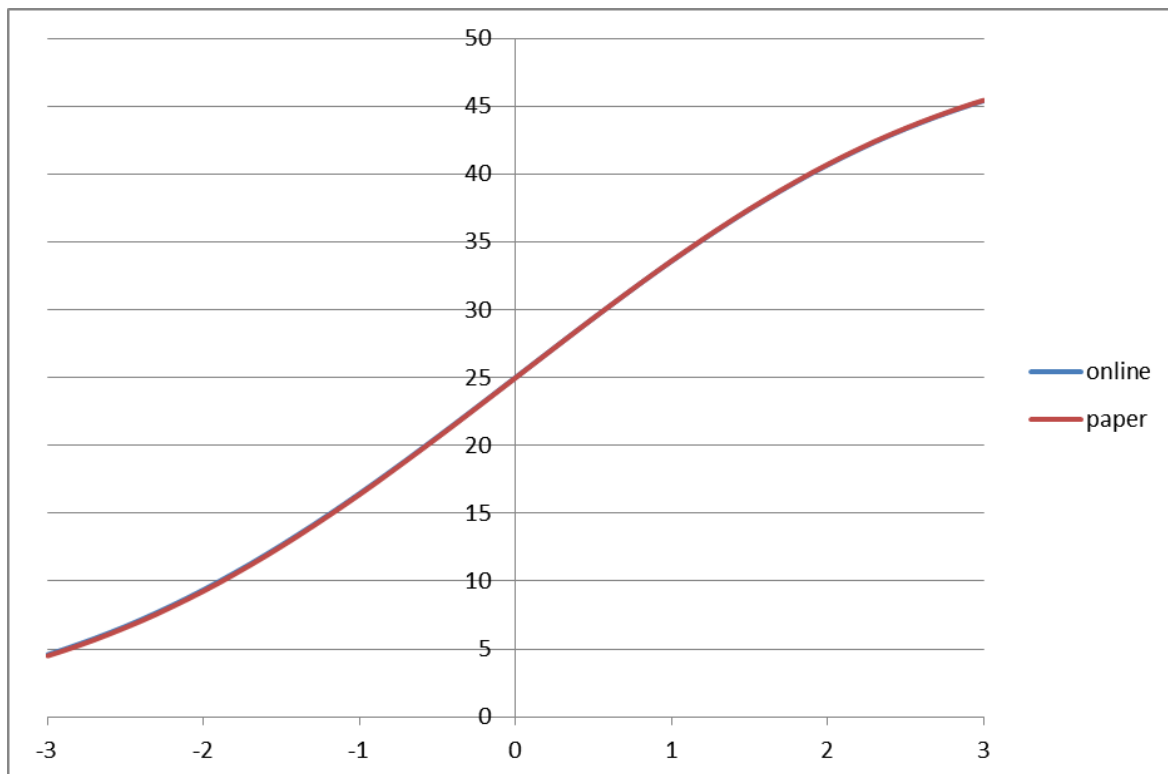
**Figure I.1.6. Test Characteristic Curves for Online and Paper Forms – Grade 8 ELA****Figure I.1.7. Test Characteristic Curves for Online and Paper Forms – Grade 9 ELA**

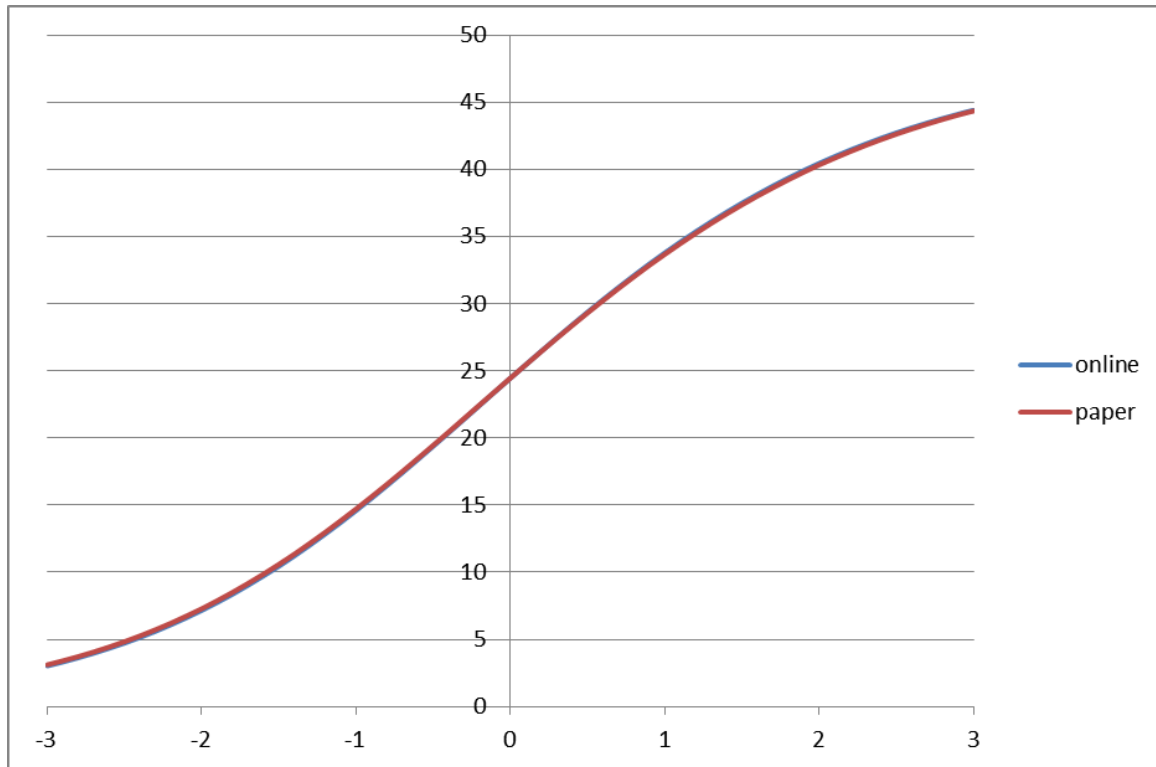
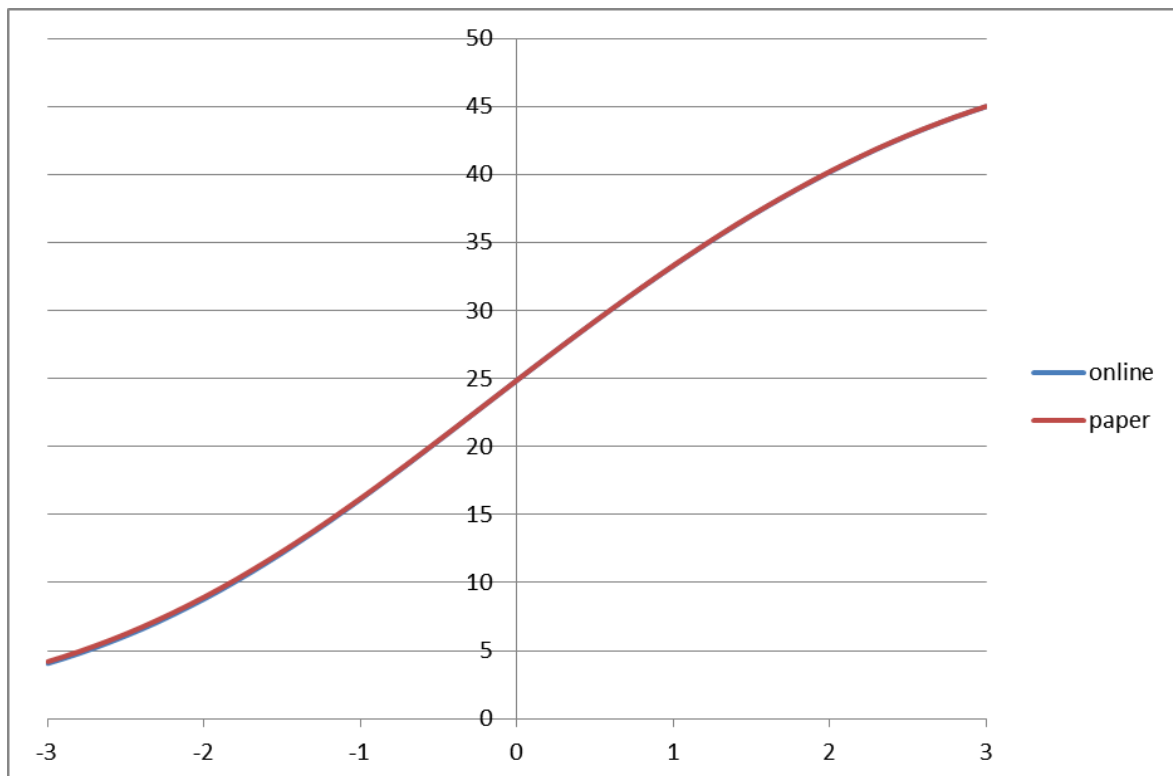
**Figure I.1.8. Test Characteristic Curves for Online and Paper Forms – Grade 10 ELA****Figure I.1.9. Test Characteristic Curves for Online and Paper Forms – Grade 11 ELA**

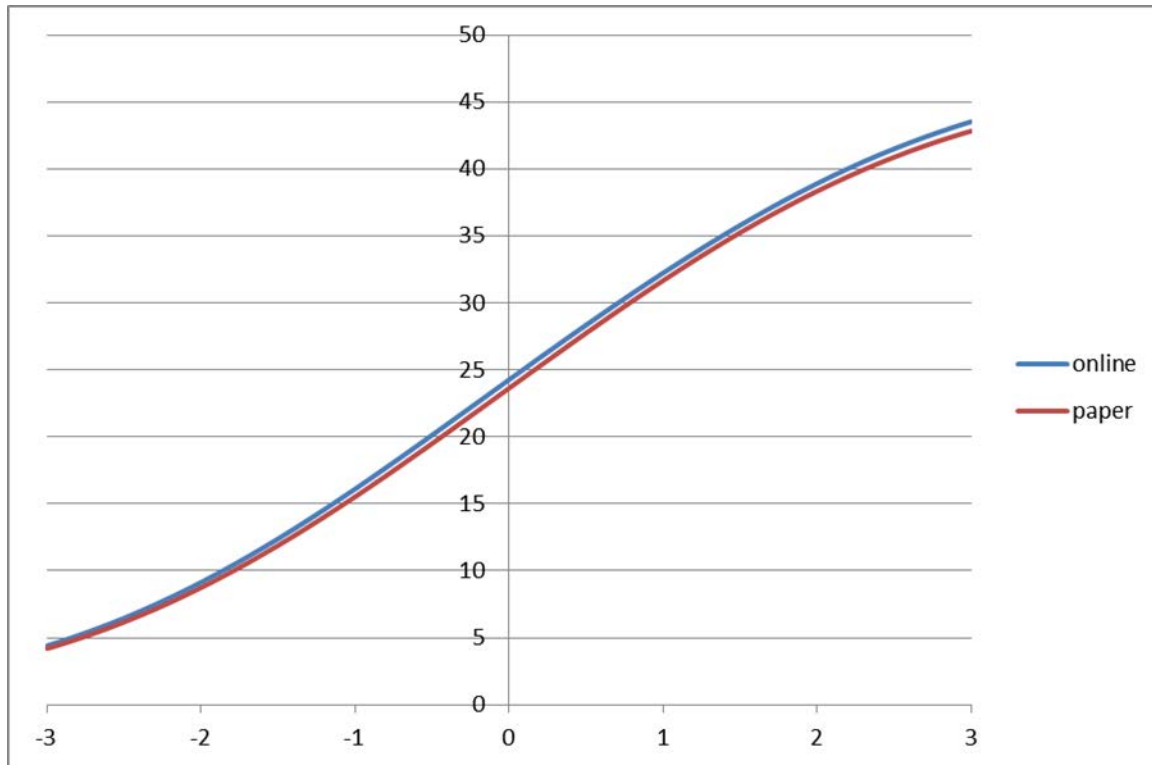
**Figure I.1.10. Test Characteristic Curves for Online and Paper Forms – Grade 3 Math****Figure I.1.11. Test Characteristic Curves for Online and Paper Forms – Grade 4 Math**



**Figure I.1.12. Test Characteristic Curves for Online and Paper Forms – Grade 5 Math****Figure I.1.13. Test Characteristic Curves for Online and Paper Forms – Grade 6 Math**

**Figure I.1.14. Test Characteristic Curves for Online and Paper Forms – Grade 7 Math****Figure I.1.15. Test Characteristic Curves for Online and Paper Forms – Grade 8 Math**

**Figure I.1.16. Test Characteristic Curves for Online and Paper Forms – Algebra I****Figure I.1.17. Test Characteristic Curves for Online and Paper Forms – Geometry**

**Figure I.1.18. Test Characteristic Curves for Online and Paper Forms – Algebra II**

## Appendix I.2 – Comparison of Matched Samples

**Table I.2.1. Comparison of Matched Samples – Grade 3 ELA**

Demographic and Achievement Variables	Online Sample	Paper Sample
Male	0.51	0.51
Female	0.49	0.49
White	0.83	0.85
Black	0.08	0.08
Asian	0.04	0.04
American Indian	0.09	0.07
Hispanic	0.47	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.63	0.53
English Language Learner (ELL)	0.16	0.16
Special Education (SPED)	0.11	0.12
Migrant	0.00	0.00
Predicted Score Mean	27.36	27.36
Predicted Score Standard Deviation	7.99	7.99
Predicted Score Skewness	-0.13	-0.13
Predicted Score Kurtosis	1.90	1.89
Spring 2014 Reading Achievement Mean	52.69	52.58
Spring 2014 Reading Achievement Standard Deviation	27.68	27.65

**Table I.2.2. Comparison of Matched Samples – Grade 3 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.83	0.85
Black	0.07	0.07
Asian	0.04	0.04
American Indian	0.09	0.06
Hispanic	0.46	0.47
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.63	0.54
English Language Learner (ELL)	0.16	0.16
Special Education (SPED)	0.11	0.12
Migrant	0.00	0.00
Predicted Score Mean	27.83	27.81
Predicted Score Standard Deviation	6.92	6.93
Predicted Score Skewness	-0.15	-0.13
Predicted Score Kurtosis	1.97	1.95
Spring 2014 Math Achievement Mean	53.26	52.69
Spring 2014 Math Achievement Standard Deviation	29.53	29.59

**Table I.2.3. Comparison of Matched Samples – Grade 4 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.83	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.09	0.07
Hispanic	0.46	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.62	0.54
English Language Learner (ELL)	0.11	0.11
Special Education (SPED)	0.12	0.13
Migrant	0.00	0.00
Predicted Score Mean	30.06	30.06
Predicted Score Standard Deviation	8.17	8.17
Predicted Score Skewness	-0.13	-0.13
Predicted Score Kurtosis	1.93	1.94
Spring 2014 Reading Achievement Mean	51.51	51.26
Spring 2014 Reading Achievement Standard Deviation	29.05	28.94

**Table I.2.4. Comparison of Matched Samples – Grade 4 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.83	0.85
Black	0.07	0.07
Asian	0.04	0.04
American Indian	0.10	0.07
Hispanic	0.46	0.45
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.62	0.53
English Language Learner (ELL)	0.11	0.11
Special Education (SPED)	0.12	0.13
Migrant	0.00	0.00
Predicted Score Mean	26.07	26.08
Predicted Score Standard Deviation	7.76	7.77
Predicted Score Skewness	-0.07	-0.06
Predicted Score Kurtosis	1.88	1.88
Spring 2014 Math Achievement Mean	51.46	51.16
Spring 2014 Math Achievement Standard Deviation	28.96	28.83

**Table I.2.5. Comparison of Matched Samples – Grade 5 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.83	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.10	0.07
Hispanic	0.45	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.62	0.53
English Language Learner (ELL)	0.11	0.11
Special Education (SPED)	0.11	0.13
Migrant	0.00	0.00
Predicted Score Mean	28.57	28.57
Predicted Score Standard Deviation	7.98	8.00
Predicted Score Skewness	-0.10	-0.10
Predicted Score Kurtosis	1.92	1.92
Spring 2014 Reading Achievement Mean	50.80	50.58
Spring 2014 Reading Achievement Standard Deviation	29.01	28.86

**Table I.2.6. Comparison of Matched Samples – Grade 5 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.83	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.10	0.07
Hispanic	0.45	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.62	0.52
English Language Learner (ELL)	0.11	0.11
Special Education (SPED)	0.11	0.12
Migrant	0.00	0.00
Predicted Score Mean	22.93	22.93
Predicted Score Standard Deviation	8.32	8.33
Predicted Score Skewness	-0.03	-0.02
Predicted Score Kurtosis	1.84	1.85
Spring 2014 Math Achievement Mean	51.17	50.66
Spring 2014 Math Achievement Standard Deviation	29.09	28.85

**Table I.2.7. Comparison of Matched Samples – Grade 6 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.84	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.08	0.08
Hispanic	0.46	0.45
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.61	0.52
English Language Learner (ELL)	0.08	0.08
Special Education (SPED)	0.11	0.13
Migrant	0.00	0.00
Predicted Score Mean	28.67	28.68
Predicted Score Standard Deviation	8.57	8.57
Predicted Score Skewness	-0.10	-0.10
Predicted Score Kurtosis	1.92	1.93
Spring 2014 Reading Achievement Mean	50.67	50.61
Spring 2014 Reading Achievement Standard Deviation	27.38	27.25



**Table I.2.8. Comparison of Matched Samples – Grade 6 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.84	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.08	0.08
Hispanic	0.45	0.44
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.61	0.52
English Language Learner (ELL)	0.08	0.08
Special Education (SPED)	0.11	0.12
Migrant	0.00	0.00
Predicted Score Mean	23.20	23.20
Predicted Score Standard Deviation	8.10	8.11
Predicted Score Skewness	-0.02	-0.01
Predicted Score Kurtosis	1.86	1.87
Spring 2014 Math Achievement Mean	50.84	50.75
Spring 2014 Math Achievement Standard Deviation	28.91	28.68

**Table I.2.9. Comparison of Matched Samples – Grade 7 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.85	0.83
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.08	0.09
Hispanic	0.46	0.45
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.59	0.52
English Language Learner (ELL)	0.05	0.06
Special Education (SPED)	0.10	0.12
Migrant	0.00	0.01
Predicted Score Mean	29.61	29.62
Predicted Score Standard Deviation	8.62	8.63
Predicted Score Skewness	-0.15	-0.15
Predicted Score Kurtosis	1.98	1.99
Spring 2014 Reading Achievement Mean	50.89	50.64
Spring 2014 Reading Achievement Standard Deviation	27.23	27.17

**Table I.2.10. Comparison of Matched Samples – Grade 7 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.85	0.83
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.08	0.08
Hispanic	0.46	0.45
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.59	0.52
English Language Learner (ELL)	0.05	0.05
Special Education (SPED)	0.11	0.12
Migrant	0.00	0.00
Predicted Score Mean	23.05	23.05
Predicted Score Standard Deviation	8.35	8.36
Predicted Score Skewness	-0.01	-0.01
Predicted Score Kurtosis	1.88	1.89
Spring 2014 Math Achievement Mean	50.58	50.36
Spring 2014 Math Achievement Standard Deviation	28.79	28.56

**Table I.2.11. Comparison of Matched Samples – Grade 8 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.85	0.83
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.07	0.08
Hispanic	0.45	0.44
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.58	0.51
English Language Learner (ELL)	0.05	0.04
Special Education (SPED)	0.10	0.11
Migrant	0.00	0.00
Predicted Score Mean	31.30	31.30
Predicted Score Standard Deviation	8.40	8.40
Predicted Score Skewness	-0.15	-0.15
Predicted Score Kurtosis	1.95	1.96
Spring 2014 Reading Achievement Mean	51.25	51.34
Spring 2014 Reading Achievement Standard Deviation	27.33	27.20

**Table I.2.12. Comparison of Matched Samples – Grade 8 Math**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.85	0.84
Black	0.07	0.07
Asian	0.03	0.04
American Indian	0.07	0.08
Hispanic	0.45	0.45
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.58	0.52
English Language Learner (ELL)	0.05	0.04
Special Education (SPED)	0.10	0.11
Migrant	0.00	0.00
Predicted Score Mean	22.38	22.39
Predicted Score Standard Deviation	8.65	8.66
Predicted Score Skewness	-0.01	0.00
Predicted Score Kurtosis	1.84	1.85
Spring 2014 Math Achievement Mean	50.96	50.62
Spring 2014 Math Achievement Standard Deviation	28.98	28.87

**Table I.2.13. Comparison of Matched Samples – Grade 9 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.84	0.86
Black	0.07	0.07
Asian	0.04	0.05
American Indian	0.08	0.05
Hispanic	0.38	0.48
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.45	0.51
English Language Learner (ELL)	0.02	0.03
Special Education (SPED)	0.09	0.08
Migrant	0.00	0.01
Predicted Score Mean	27.69	27.69
Predicted Score Standard Deviation	7.24	7.27
Predicted Score Skewness	-0.17	-0.16
Predicted Score Kurtosis	1.98	1.99
Spring 2014 Reading Achievement Mean	54.42	54.56
Spring 2014 Reading Achievement Standard Deviation	28.18	28.00

**Table I.2.14. Comparison of Matched Samples – Algebra I**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.85	0.86
Black	0.07	0.06
Asian	0.03	0.05
American Indian	0.07	0.05
Hispanic	0.41	0.47
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.47	0.50
English Language Learner (ELL)	0.02	0.02
Special Education (SPED)	0.09	0.09
Migrant	0.00	0.01
Predicted Score Mean	21.46	21.46
Predicted Score Standard Deviation	7.72	7.74
Predicted Score Skewness	-0.15	-0.14
Predicted Score Kurtosis	1.87	1.87
Spring 2014 Math Achievement Mean	54.92	55.13
Spring 2014 Math Achievement Standard Deviation	28.45	28.27

**Table I.2.15. Comparison of Matched Samples – Grade 10 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.50
Female	0.49	0.50
White	0.84	0.86
Black	0.08	0.07
Asian	0.04	0.04
American Indian	0.08	0.05
Hispanic	0.38	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.43	0.50
English Language Learner (ELL)	0.01	0.02
Special Education (SPED)	0.09	0.08
Migrant	0.00	0.01
Predicted Score Mean	29.75	29.74
Predicted Score Standard Deviation	8.38	8.39
Predicted Score Skewness	-0.20	-0.19
Predicted Score Kurtosis	1.97	1.97
Spring 2014 Reading Achievement Mean	55.03	55.08
Spring 2014 Reading Achievement Standard Deviation	26.24	26.27

**Table I.2.16. Comparison of Matched Samples – Geometry**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.51	0.51
Female	0.49	0.49
White	0.84	0.86
Black	0.07	0.07
Asian	0.04	0.05
American Indian	0.08	0.05
Hispanic	0.38	0.46
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.44	0.49
English Language Learner (ELL)	0.01	0.02
Special Education (SPED)	0.08	0.07
Migrant	0.00	0.01
Predicted Score Mean	16.65	16.66
Predicted Score Standard Deviation	6.79	6.81
Predicted Score Skewness	-0.07	-0.06
Predicted Score Kurtosis	1.94	1.95
Spring 2014 Math Achievement Mean	55.32	55.81
Spring 2014 Math Achievement Standard Deviation	27.26	26.95

**Table I.2.17. Comparison of Matched Samples – Grade 11 ELA**

<b>Demographic and Achievement Variables</b>	<b>Online Sample</b>	<b>Paper Sample</b>
Male	0.52	0.51
Female	0.48	0.49
White	0.84	0.86
Black	0.07	0.07
Asian	0.05	0.04
American Indian	0.09	0.05
Hispanic	0.36	0.48
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.40	0.49
English Language Learner (ELL)	0.01	0.01
Special Education (SPED)	0.09	0.09
Migrant	0.00	0.01
Predicted Score Mean	25.99	26.00
Predicted Score Standard Deviation	7.00	7.00
Predicted Score Skewness	-0.27	-0.26
Predicted Score Kurtosis	2.15	2.16
Spring 2014 Reading Achievement Mean	57.63	57.70
Spring 2014 Reading Achievement Standard Deviation	24.57	24.55

Table I.2.18. Comparison of Matched Samples – Algebra II

Demographic and Achievement Variables	Online Sample	Paper Sample
Male	0.50	0.48
Female	0.50	0.52
White	0.84	0.86
Black	0.08	0.07
Asian	0.05	0.05
American Indian	0.08	0.05
Hispanic	0.36	0.47
Pacific Islander	0.01	0.01
Free and Reduced Lunch (FRL)	0.41	0.49
English Language Learner (ELL)	0.01	0.01
Special Education (SPED)	0.06	0.05
Migrant	0.00	0.01
Predicted Score Mean	14.09	14.11
Predicted Score Standard Deviation	6.13	6.14
Predicted Score Skewness	-0.45	-0.44
Predicted Score Kurtosis	2.34	2.34
Spring 2014 Math Achievement Mean	63.26	64.22
Spring 2014 Math Achievement Standard Deviation	24.70	24.59

## **Appendix I.3. Analysis of Mode Comparability of AzMERIT's Online and Paper Administrations for Spring 2015**

Analysis of Mode Comparability of  
AzMERIT's Online and Paper Administrations  
for Spring 2015.

Arizona Department of Education  
Assessment Section  
August 24, 2015

In spring of 2015, the Arizona Department of Education (ADE) instituted a new assessment (Arizona's Measurement of Educational Readiness to Inform Teaching, AzMERIT) in compliance with state and federal mandates and aligned with the Arizona State Board of Education's (State Board) adopted values which in part state that "It is essential that the new statewide assessment:...

- Use 21<sup>st</sup> Century technology to deliver the assessment, as available infrastructure allows."

The full March 6, 2014, State Board values document is available at: <http://www.azed.gov/state-board-education/files/2014/03/adopted-essential-assessment-values-6mar14.pdf>. In November 2014, the State Board adopted AzMERIT as its test to measure student achievement in mathematics (MATH) and English language arts (ELA) in Grades 3 through 8 and for end-of-course use in Grades 9 through 11 for ELA and Algebra I, Geometry, and Algebra II for MATH.

Since the State Board wanted an on-line testing system but many schools did not have the infrastructure to administer computer based tests to all of their students, ADE developed, with the assistance of its vendor (American Institutes for Research, AIR), a dual mode assessment (computer-based and paper-based) for each grade/subject combination. The question of how the comparability of these two modes of administration should be analyzed was brought before ADE's Technical Advisory Committee (TAC) during their February 2015 meeting. AIR proposed a method to TAC which they approved. The TAC, however, suggested that ADE might also examine the modes' comparability using a different method since ADE/AIR planned for Item Response Theory (IRT) scaling calibration to be performed using the Rasch model.

TAC recommended that ADE use the methodology presented by Wright (1967) first to compare the AIMS 2014 scales scores students in schools that were assessing students online with those of the whole state, to determine any differences between the scale scores of these two groups of schools on last year's tests. The purpose of this initial analysis was to have a baseline comparison of how much discrepancy to expect when the two groups of school went from taking assessments in the same mode to different modes. The second analysis that was recommended, using the same methodology, would be carried out once the data from the spring 2015 administration of AzMERIT was available. This paper presents the results from the first analysis of AIMS 2014 data, and results for the second analysis, using all data available for both modes as of 7/13/2015.

### Method

The method put forth by Wright (1967) to examine the effect of student sample and item sample on the calibration of a test is as follows:

- First perform IRT scaling separately on the two samples of interest using all items that contributed to each groups' total score.
- Organize the resulting scale scores (or student ability estimates, Thetas) from least to greatest.
- Graph the ability estimates or scale scores for both groups by number of raw score points available on one graph.
- Compare the amount of distance there is between the graphs of the two groups.



## Results

The graphs resulting from the first analysis, that comparing AIMS 2014 scales scores from computer-based schools to that of the whole state, are presented in Figure 1 for MATH and Figure 2 for Reading.<sup>1</sup> The examination of the two graphs for every grade/subject combination showed very little, if any, difference between the independently determined AIMS scales. Where there were differences, they occurred in the very lowest ranges and in the very highest ranges of the raw scores where the most measurement error occurs, but even these differences were extremely small.

The graphs resulting from the second analysis, that comparing AzMERIT student ability estimates (Theta) for each raw score from computer-based schools to that of those from paper-based schools, are presented in Figure 3 for MATH and Figure 4 for ELA. The examination of the two graphs for every grade/subject combination showed very little, if any, difference between the independently determined raw score to Theta estimates. Since ELA and Mathematics scales are set to very different values for AzMERIT (2000's for ELA and 3000's for Mathematics), to provide some comparability across subjects, IRT Theta estimates from which these scale scores are computed were used for these graphs. Minor differences were found in some grade/subject combinations (most evident in Grade 3 ELA), however, these differences again were both small and located at the ends of the raw score continuum where the most measurement error exists.

In Grade 3 ELA, while the number of items administered to students was the same for each mode, there was one less raw score point for the paper mode upon which to estimate student ability. For Grade 3 ELA, the difference was due to an online two point item, which could not be translated to paper, being substituted with a single point item aligned to the same content. Given the raw score difference, the resulting raw score/Theta comparison between the two modes is extremely small even for this most egregious subject/grade combination.

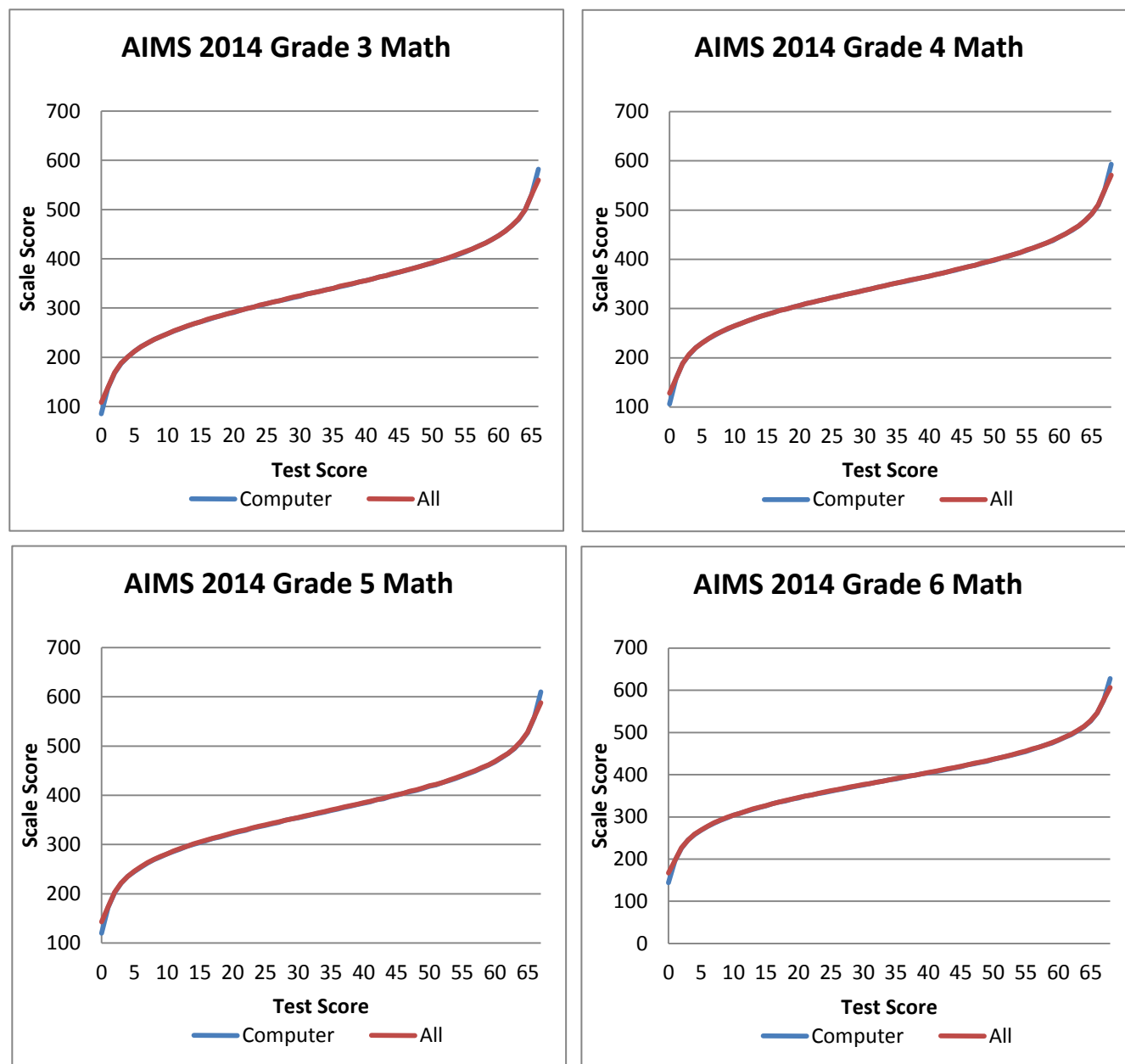
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<sup>1</sup>For AIMS, only the Reading test was compared using the 2014 data since this test did not have an ELA score, as such. In 2014 AIMS, as in prior years, writing was only assessed in Grades 5, 6, 7 and high school, so it was never combined with the reading score to compute an ELA score across all tested Grades 3 through 8 and high school.

## References

Wright, B. D. (October, 1967). Sample-free test calibration and person measurement. Paper presented at the ETS Invitational Conference on Testing Problems, Princeton, NJ, retrieved from <http://www.rasch.org/memo1.htm> on 2/18/2015.

Figure 1. AIMS 2014 MATH raw score/scale score graphs for schools assessing students via computer as compared to all students in the state.



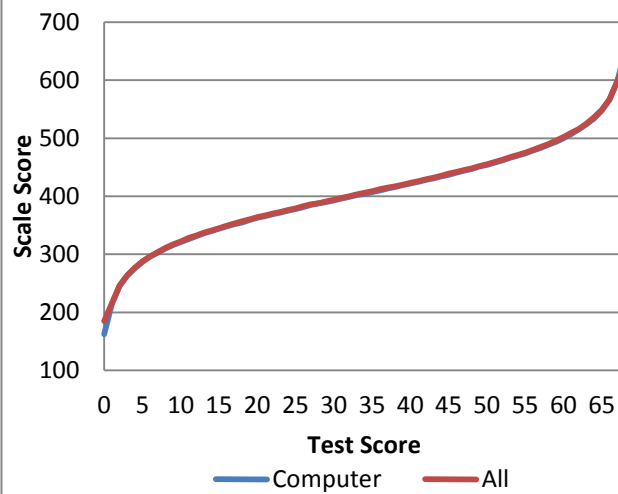
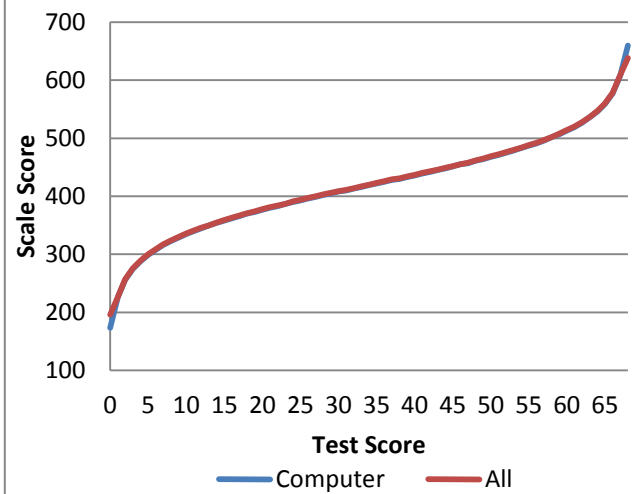
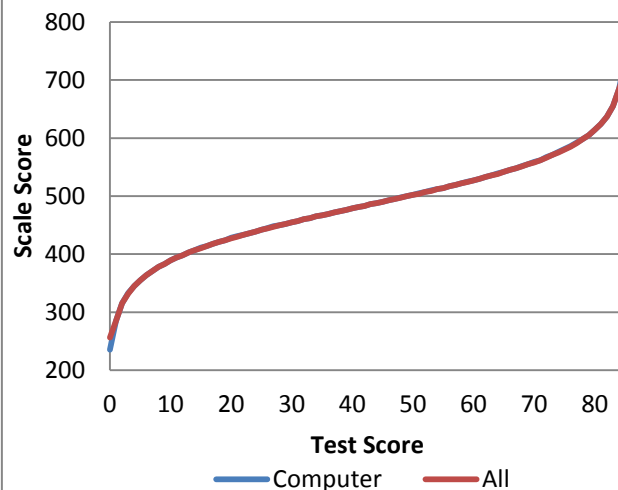
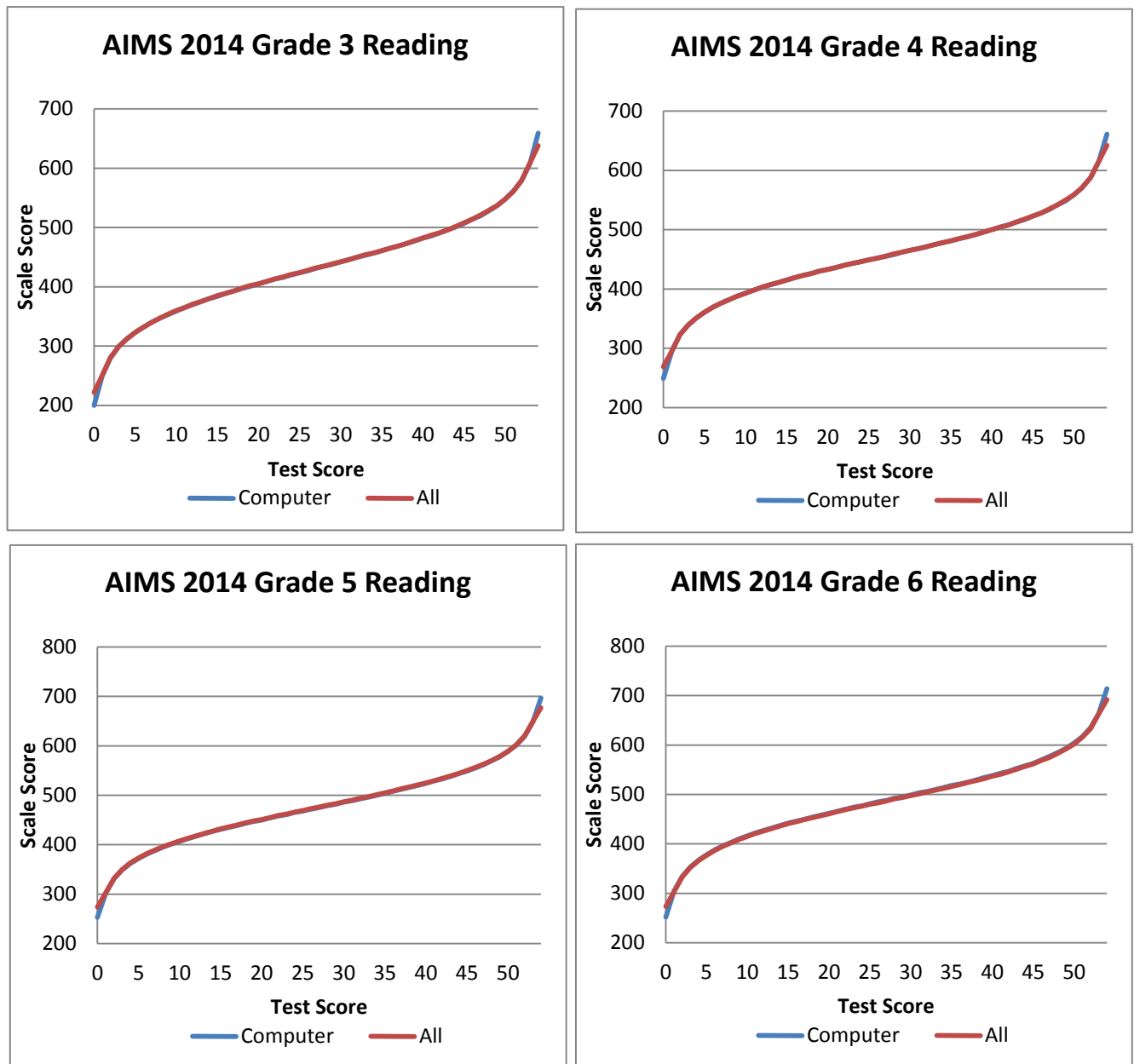
**AIMS 2014 Grade 7 Math****AIMS 2014 Grade 8 Math****AIMS 2014 Cohort 16 Math**

Figure 2. AIMS 2014 Reading raw score/scale score graphs for schools assessing students via computer as compared to all students in the state.



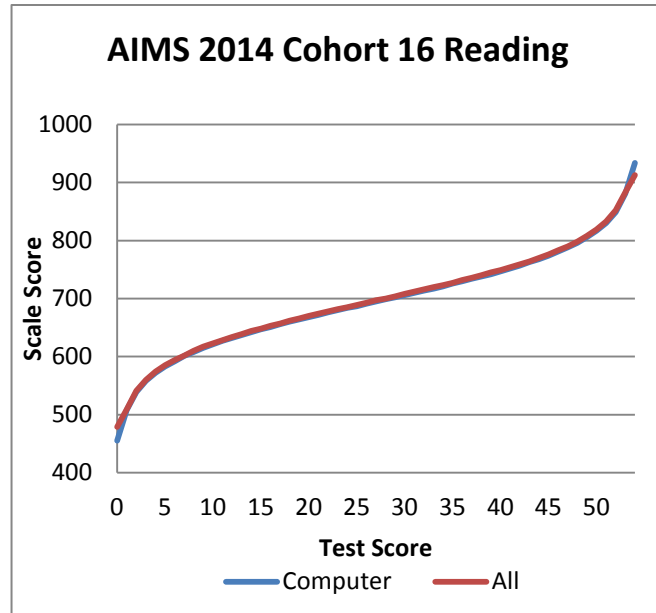
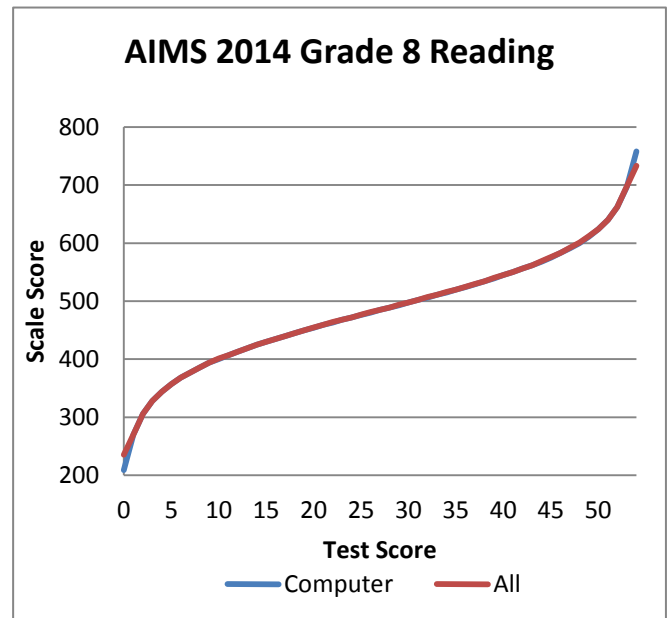
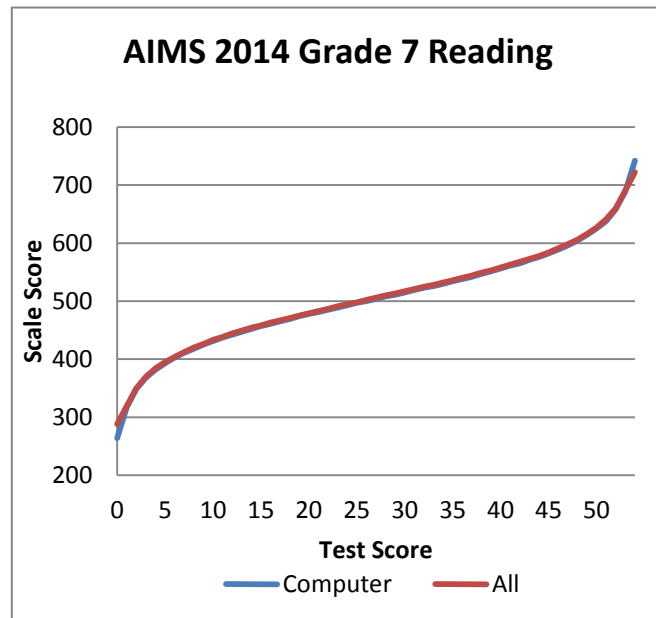
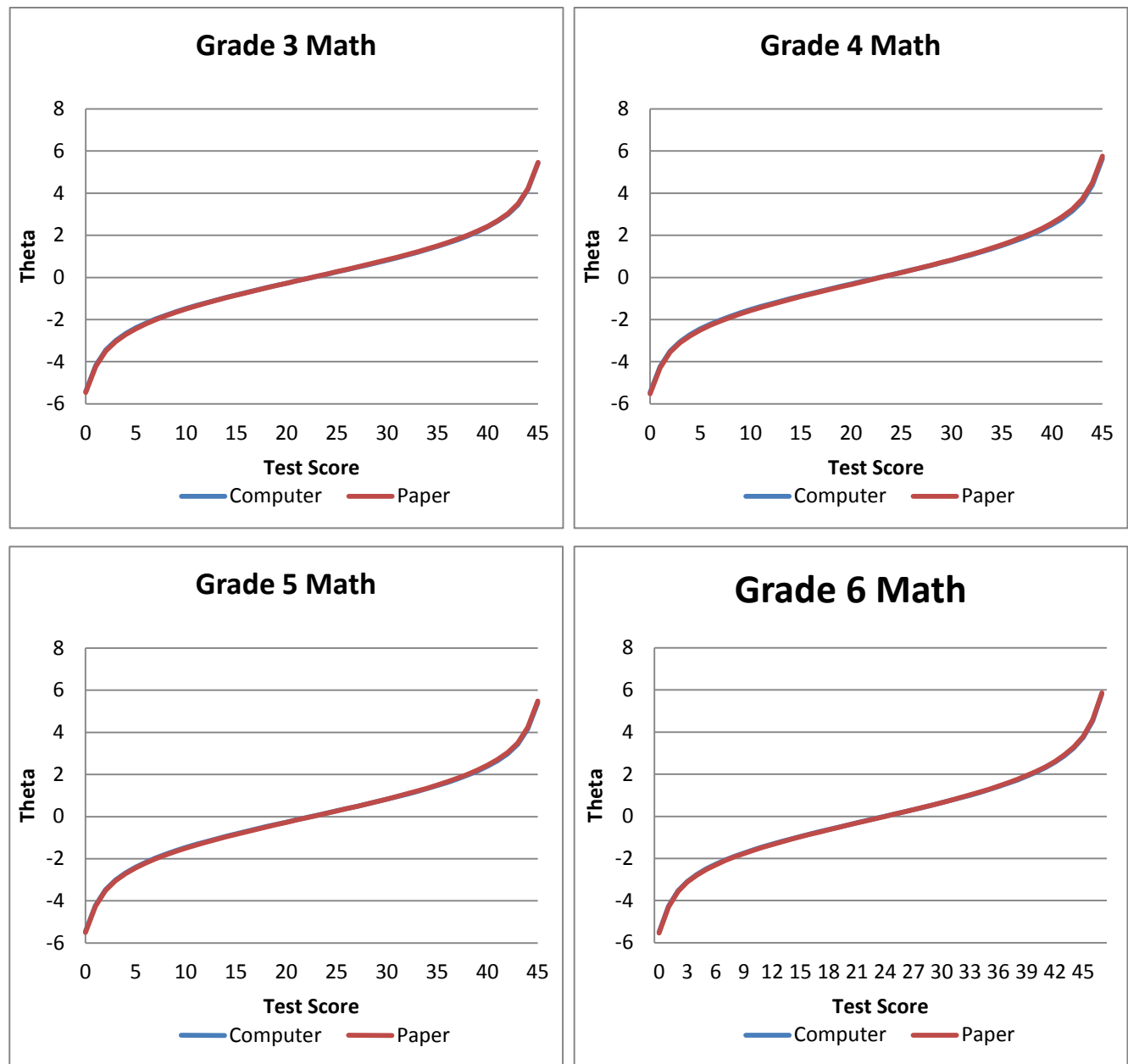
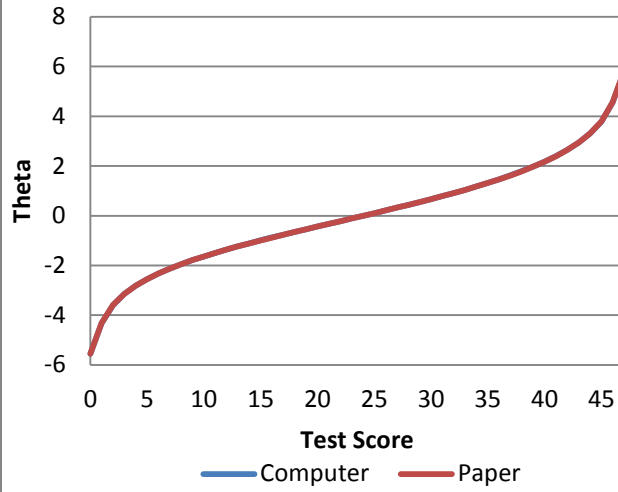


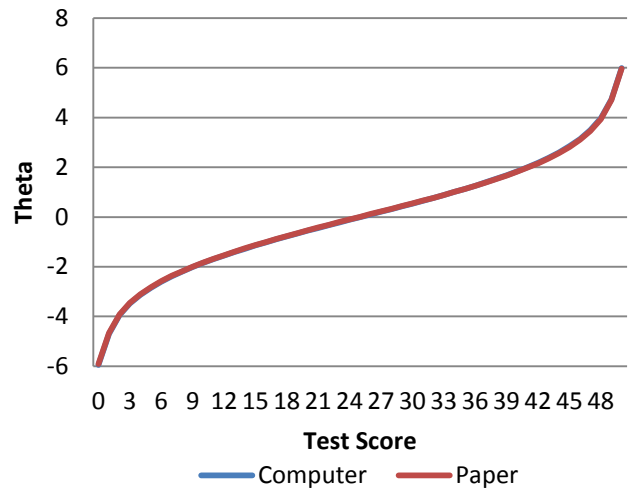
Figure 3. AzMERIT MATH raw score/student ability (Theta) graphs for schools assessing students via computer as compared to those using paper-based tests.



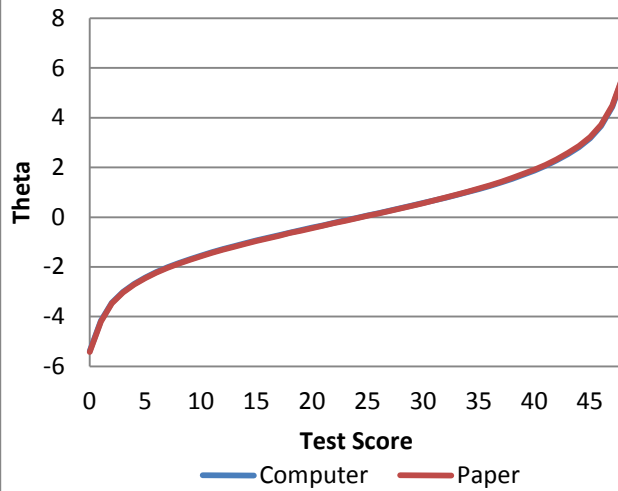
### Grade 7 Math



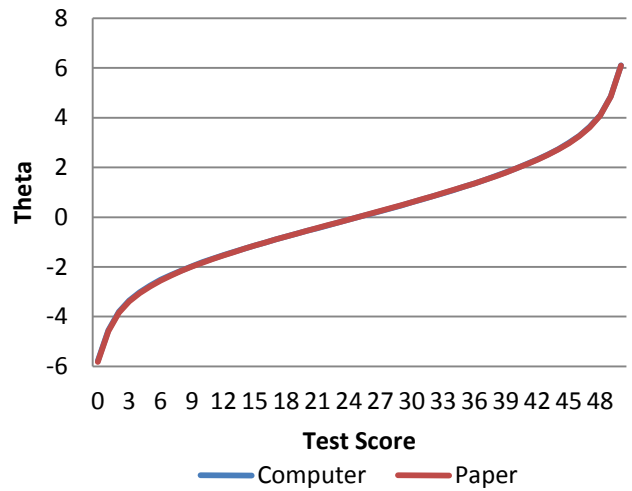
### Grade 8 Math



### Algebra I



### Geometry



### Algebra II

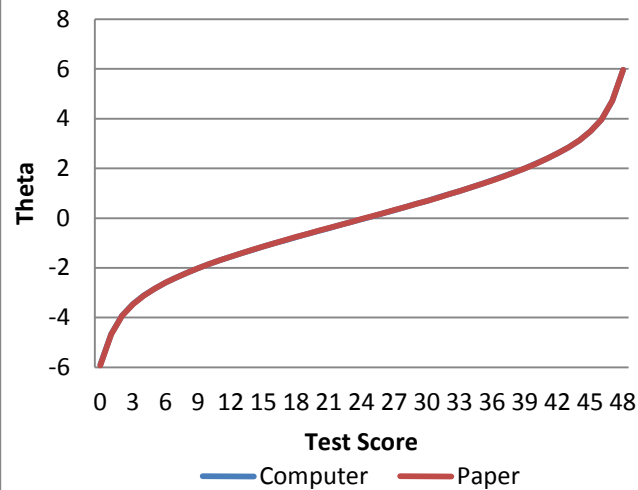
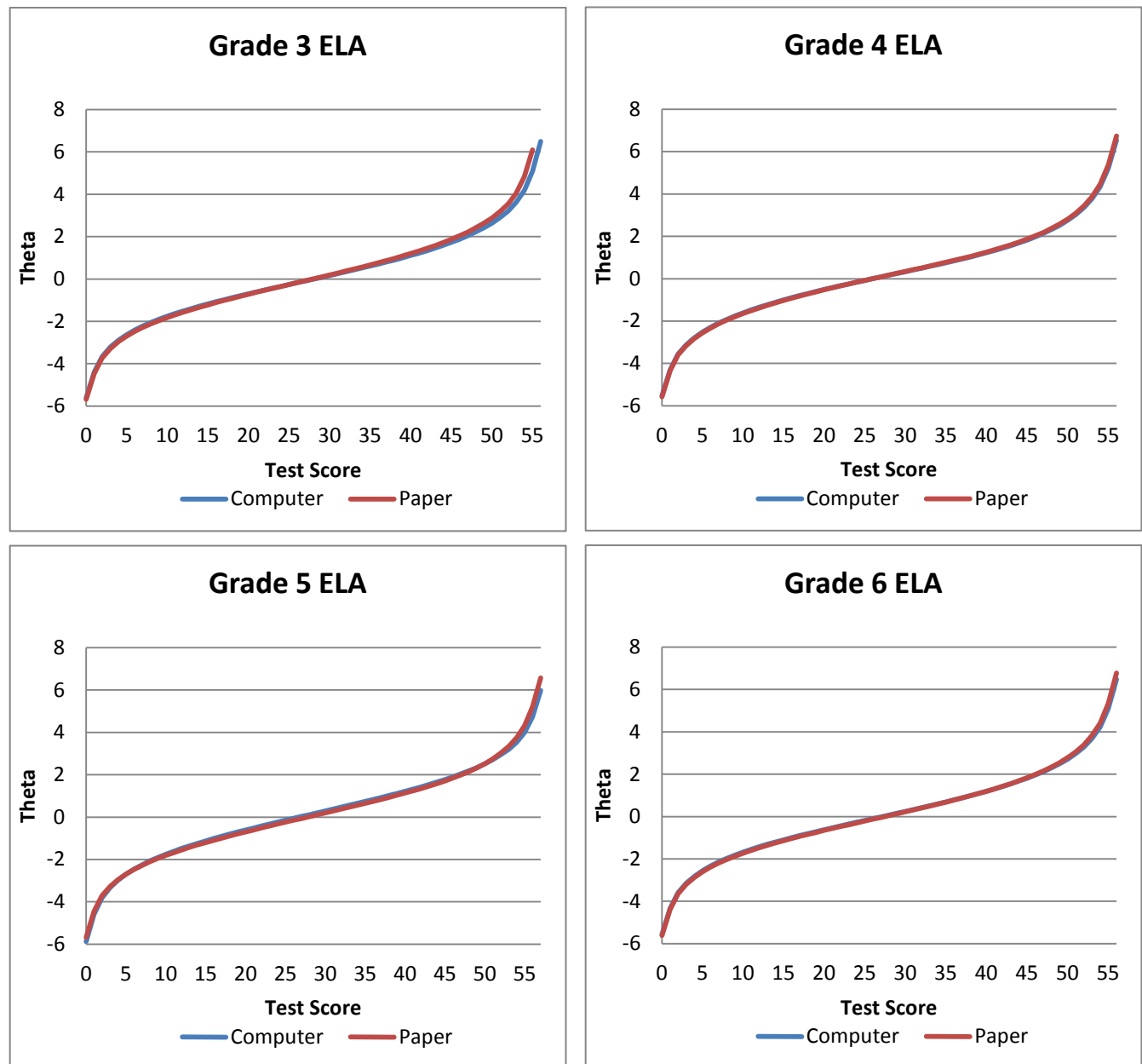




Figure 4. AzMERIT ELA raw score/student ability (Theta) graphs for schools assessing students via computer as compared to those using paper-based tests.



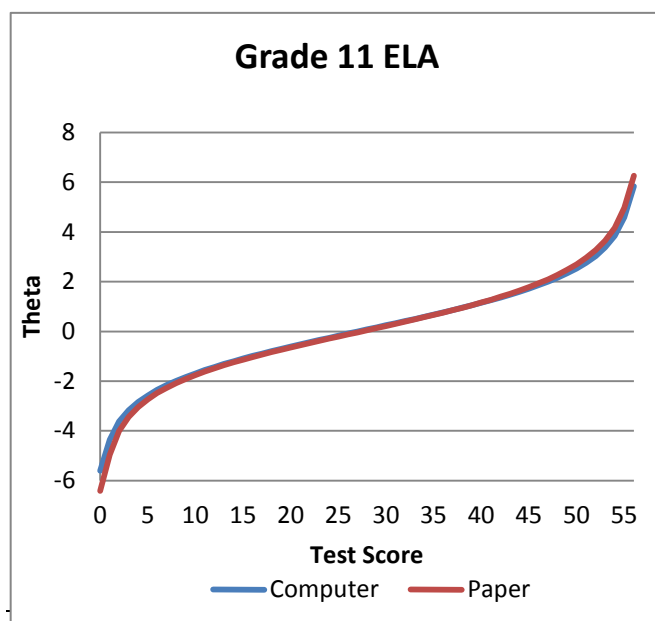
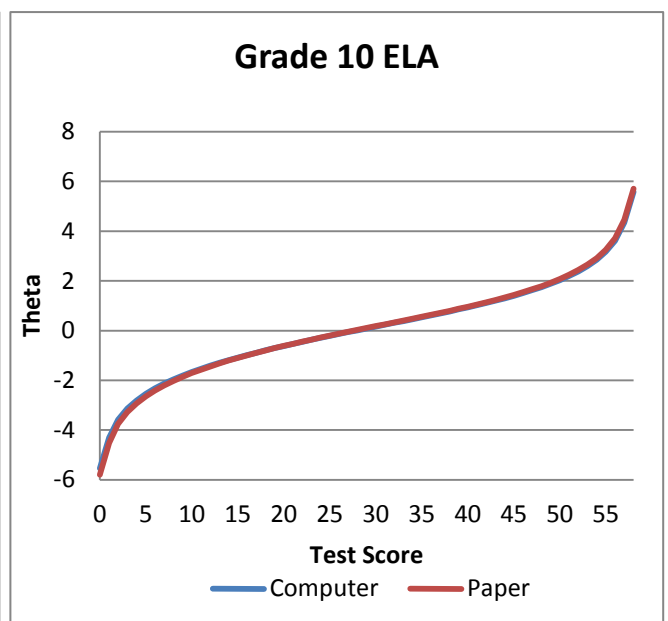
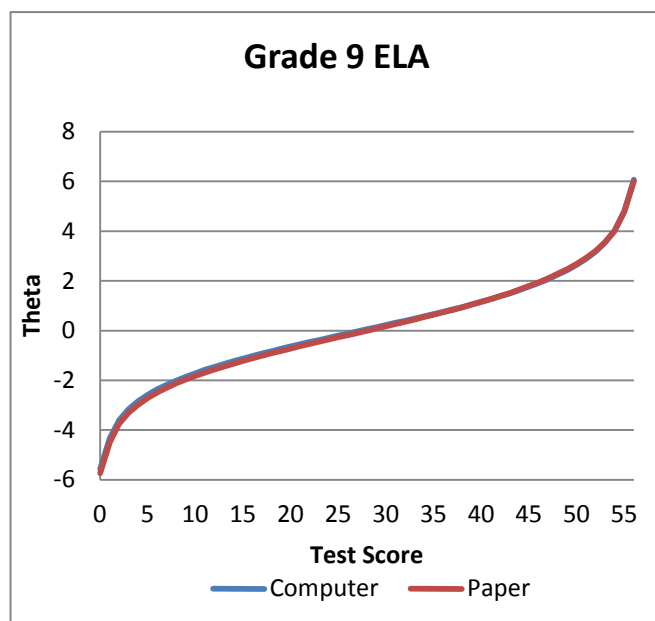
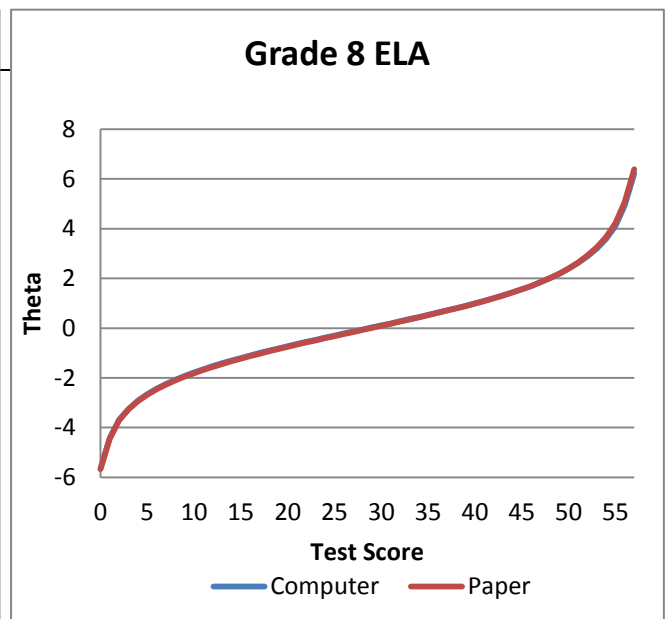
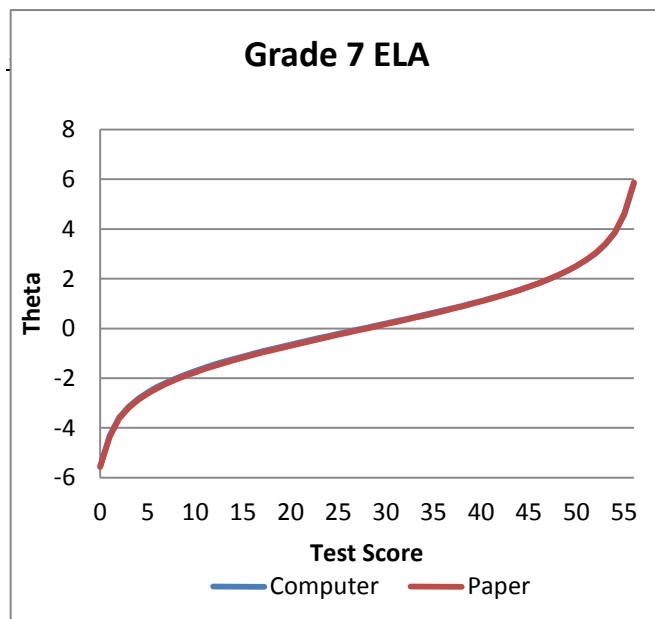


Table 1. Demographics of Students by AzMERIT Mode of Assessment –ELA.

<b>Demographic Variables</b>	<b>Online</b>	<b>Paper</b>
Number of Students	328,237	371,867
Number of Tests	329,691	372,897
Male	51.1%	50.6%
Female	48.9%	49.4%
White	83.1%	84.1%
Black	7.6%	7.5%
Asian	3.6%	4.4%
Native American	9.2%	8.4%
Hispanic	43.1%	44.6%
Pacific Islander	0.9%	0.9%
Multiethnic	3.2%	3.2%
Free and Reduced Lunch (FRL)	57.0%	50.4%
English Language Learner (ELL)	5.5%	4.7%
Special Education (SPED)	11.1%	11.2%
Migrant	0.4%	0.8%

Table 2. Demographics of Students by AzMERIT Mode of Assessment – MATH.

<b>Demographic Variables</b>	<b>Online</b>	<b>Paper</b>
Number of Students	318,208	353,648
Number of Tests	329,289	365,516
Male	51.1%	50.4%
Female	48.9%	49.6%
White	83.0%	84.3%
Black	7.6%	7.5%
Asian	3.5%	4.3%
Native American	9.3%	8.3%
Hispanic	43.5%	44.9%
Pacific Islander	0.8%	0.9%
Multiethnic	3.2%	3.2%
Free and Reduced Lunch (FRL)	57.6%	50.7%
English Language Learner (ELL)	5.6%	4.7%
Special Education (SPED)	11.2%	10.7%
Migrant	0.4%	0.7%

Note: Percentages on these tables were computed based on unique students, however since students were sometimes of multiple ethnicities, they were counted in each. Also, students were allowed to take tests in all grades and/or subjects for the courses that they were taking resulting in some students taking multiple tests within a subject area. Multiple course tests taken by students were especially prevalent in mathematics.

## **Appendix J – AzMERIT Vertical Linking Study**

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## Appendix J. AzMERIT Vertical Linking Study

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### Introduction

The purpose of this report is to document results of the vertical linking study that was implemented to develop a vertical scale for scoring and reporting student achievement results on the AzMERIT and that allows for monitoring and evaluation of students gains over time.

To emphasize the acquisition of new knowledge and skills in the development of the vertical scale, operational items from each grade level assessment (g) were embedded in field test slots of the assessment in the grade below (g-1). In this approach, the resulting linkage represents student achievement each year on the scale of the subsequent grade level assessment for which they are preparing to receive instruction. As such, the scale scores for each assessment can be interpreted as a pre-test score for measuring student acquisition of academic content in the subsequent grade level. While this approach risks administering to students 1-2 items measuring content that they may not yet have had the opportunity to learn, it provides a more sensitive measure of student growth than could be obtained by a linking design in the linkage represents continued growth on academic content assessed in the previous year's assessment.

### Linking Items

Since the vertical scale essentially places each AzMERIT assessment on the scale for the assessment in the grade above, we can best assure comparability of test scores between the grades by establishing the linkage using all available operational test items. Thus, to link the grade 4 assessments to the grade 5 scales, all operational items in the grade 5 assessment were made available for administration in the grade 4 embedded field test (EFT) slots. Including all operational items in the vertical linking set ensures that the item set used to link to the target adjacent grade scale represents fully the measured construct in the target grade, allowing valid inferences to be made with respect to student baseline performance for achievement in the subsequent grade level.

Because the AzMERIT assessments of English language arts (ELA) in high school continue as end-of-course (EOC) or grade-level measures of student achievement of the Arizona College and Career Ready Standards (ACCRS), each assessment can be linked to the grade above using all available operational items.

However, AzMERIT assessments of high school math are composed of a set of EOC tests that are not as consistently associated with grade-level instruction and which measure specific subsets of the content domain. For example, while mathematics coursework in high school follows a typical progression and it would therefore be possible to embed "grade 9" Algebra I EOC items in the grade 8 math assessment, embed the "grade 10" Geometry EOC items in the Algebra I EOC exam, and embed the "grade 11" Algebra II the Geometry exam, the constructs measured across the four exams vary considerably and have implications for the interpretation of growth, or lack thereof, across assessments. For example, it is not clear what the expectation for growth should be in a vertical scale established by embedding Geometry items in an Algebra I exam, since Geometry is not a focus of instruction in Algebra I courses.

An alternative approach, and the one adopted by ADE, was to link the grade 8 math scale to both the Algebra I and Geometry EOC scales. Because Algebra II builds on the knowledge and skills assessed in Algebra I, all Algebra II items were used to link the Algebra I assessments to the Algebra II scale.

## Item Administration

AIR's field-test engine was used to administer both field-test and vertical linking items in the embedded slots in the online test administrations. The field-test algorithm randomly assigns both the field-test items and the field-test item position within the EFT block, ensuring that

- A random sample of students is administered each item; and
- For any given item, the students are sampled with equal probability.

The field-test algorithm yields a representative, randomized sample of student responses for each item. The field-test algorithm also leads to randomization of item position and the context in which items appear. Field-testing each item in many positions and contexts should render the resulting statistics more robust to these factors.

## Linking Analysis

When feasible, it is desirable to establish linkages using both concurrent calibrations and chain-linking approaches to ensure that results are consistent across methods. An important advantage of chain linking approaches is that, because item response theory (IRT) calibrations proceed by establishing the within-grade scale, the achievement construct intended by the blueprint and enacted in the operational test form is preserved. Unfortunately, however, at each step in the linking chain, the linking error accumulates, so that linking constants for grades more distant from the reference grade are less precise than are linking constants for grades in closer proximity to the reference grade. Concurrent calibrations do not accrue linking error across grade levels, so that linking constants are similarly precise between all grade levels. However, the calibrations resulting from this approach measure the construct that is common across the linked assessments, which may be different from the intended achievement construct at each grade level, especially for subjects such as mathematics where the assessed construct may change markedly across grade levels. Generally, both approaches tend to converge to produce vertical scales that operate similarly (Ito, Sykes, and Yao, 2008; Karkee, Lewis, Hoskens, Yao, and Haug, 2003), and we view convergence as evidence for the robustness of the vertical scale.

**Final Linking Set.** To facilitate the development of a vertical scale that will be sensitive to student growth over time, we first evaluated the performance of vertical linking items between the grade levels in which they were administered to identify any items that were more difficult for students in the intended grade than they were for students in the lower grade. For math, items that showed proportion correct scores lower in the intended grade than in the lower grade were dropped from the final vertical linking set. This resulted in dropping on average just over two items per linking set, with a maximum of six items dropped for the linkage between grade 6 and grade 7 math assessments.

For reading, the proportion correct values across grades were much closer, especially at the higher grade levels, so that elimination of all items where the proportion correct value in the lower grade

exceeded the higher grade would result in dropping more items from the vertical linking set than would be desirable for executing a robust equating design. Thus, we modified the rule for reading to exclude from the vertical linking set those items which showed proportion correct values more than two standard errors beyond the average standard error for the total linking set (i.e., items that were reliably less difficult at the lower grade). This approach allowed us to identify a final set of linking items that would maximize detection of growth, while retaining sufficient items to establish a strong linkage between the grade level assessments.

**Table 1. Number of Items Dropped and Remaining in the Final Vertical Linking Set**

Linkage	Math		ELA	
	Dropped Items	Final VL Set	Dropped Items	Final VL Set
G3→G4	1	44	1	42
G4→G5	0	45	3	46
G5→G6	1	46	0	47
G6→G7	6	41	5	39
G7→G8	3	47	2	46
G8M→Alg I G8ELA→G9ELA	3	28	11	30
G8M →Geometry G9ELA→ G10ELA	2	31	7	39
Alg I→Alg II G10ELA→ G11ELA	2	32	10	35

**Chain-Linking.** The chain linking approach proceeds from the within grade item parameters identified in the initial calibrations of the operational and embedded field test items. Because operational test items at each grade were administered in the EFT slots in the grade below, each item in the vertical linking set has two sets of item parameters: on-grade (g) and below-grade (g-1). The chain linking proceeds by identifying the linking constants necessary to place the below-grade item parameters on the on-grade scale for the items in the final vertical linking set. The linking constant for each grade was defined as the mean difference of the item difficulty estimates for the linking items between the linked grades. The chain linking began by placing the grade 3 item parameters on the grade 4 scale for both math and ELA and proceeded upwards. For math EOC assessments, the grade 8 math scale was linked to both the Algebra I and Geometry scales, and the Algebra I scale was linked to the Algebra II scale.

**Concurrent Calibration.** A vertical scale for each subject area was also established by calibrating simultaneously all items in the final vertical linking set. As with the within grade calibrations, parameters were estimated using Winsteps. To compare results from the chain-linking and concurrent calibrations, the concurrent calibrations were placed on the grade 3 reference scale.

Table 2 shows the vertical linking constants resulting from chain-linking the within grade scales as well as from concurrently calibrating items from across grade levels. The linking constants are applied to their respective within grade scale to place all item parameters on the grade 3 reference scale. To more directly examine the magnitude of gains across grade level assessments, Table 3 shows the difference between linking constants between each of the grade levels assessed. Relative gains are also

represented graphically in Figure 1 and Figure 2 for math and ELA, respectively, which plot the linking constants across grade level assessments. As the linking constants indicate, for math there is relatively large and steady growth across the grade level and end of course assessments. For the ELA assessments, the cross grade gains are more modest, and tend to diminish in the higher grade levels.

**Table 2. Vertical Linking Constants Resulting from Chain-Linking Within Grade Scales and Concurrent Calibration of Items Across Grades.**

	Vertical Linking Constants			
	Mathematics		ELA	
Linkage	Chain-Linked	Concurrent	Chain-Linked	Concurrent
G3→G4	1.32	1.30	0.18	0.16
G4→G5	2.75	2.67	0.81	0.78
G5→G6	3.90	3.73	1.19	1.15
G6→G7	4.48	4.28	1.44	1.39
G7→G8	5.69	5.39	1.76	1.70
G8M→Alg I G8ELA→G9ELA	6.07	5.76	1.97	1.88
G8M →Geometry G9ELA→ G10ELA	7.15	6.86	2.12	1.98
Alg I→Alg II G10ELA→ G11ELA	7.81	7.45	2.32	2.16

**Table 3. Linking Constant Differences between each of the Grade Level Scales.**

	Vertical Linking Constant Differences			
	Mathematics		Reading	
Linkage	Chain-Linked	Concurrent	Chain-Linked	Concurrent
G3→G4	1.32	1.3	0.18	0.16
G4→G5	1.43	1.37	0.63	0.62
G5→G6	1.15	1.06	0.38	0.37
G6→G7	0.58	0.55	0.25	0.24
G7→G8	1.21	1.11	0.32	0.31
G8M→Alg I G8ELA→G9ELA	0.38	0.37	0.21	0.18
G8M →Geometry G9ELA→ G10ELA	1.08	1.10	0.15	0.10
Alg I→Alg II G10ELA→ G11ELA	0.66	0.59	0.20	0.18

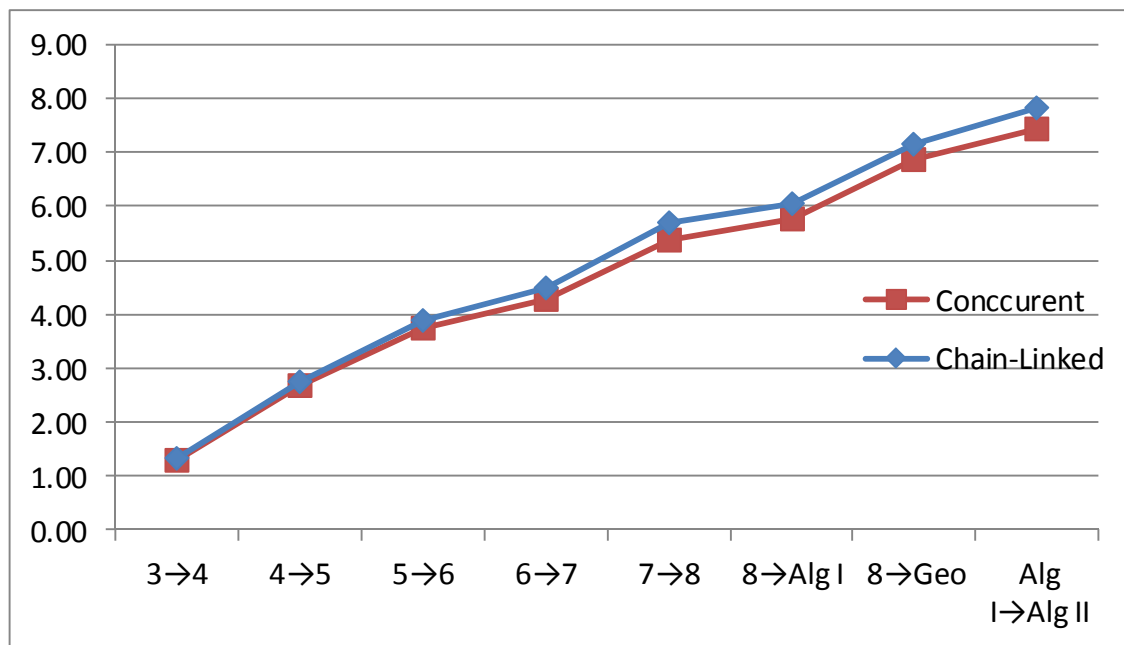
Linking constants resulting from the chain-linking and concurrent calibration approach are quite consistent, indicating that both approaches converge on a common growth scale. Although the linking constants derived from the concurrent calibration approach may be considered more precise, the chain-linking method preserves the within grade measurement construct, and was therefore selected as a



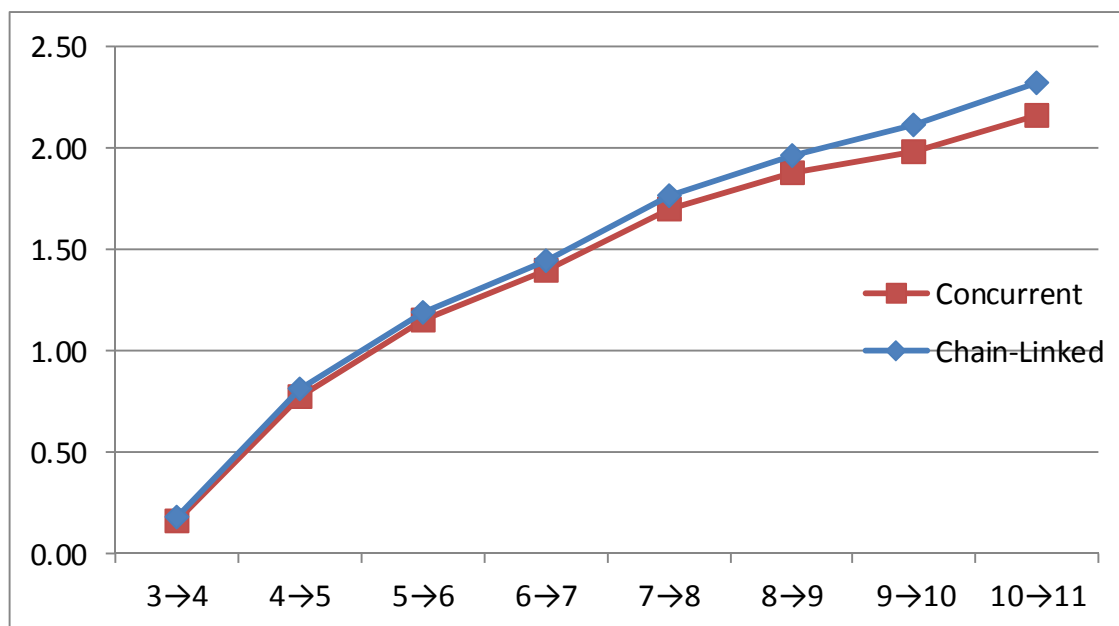
preliminary vertical scale for the purpose of recommending performance standards. We note that ordered item books for the standard setting workshop were based on the within grade scales, so any modifications to the vertical scale will not impact the recommended performance standards.

The vertical linking constants also indicate much greater growth across grades and high school courses for mathematics than is observed for ELA. In mathematics, growth is on the order of about one standard deviation per year, with the exception of grade 6 to grade 7, which showed just over a half standard deviation gain. Similar half standard deviation gains were observed between grade 8 and Algebra I, which some students take concurrently, and between coursework in Algebra I and Algebra II. Gains in ELA are less pronounced, with somewhat larger gains in the elementary school years, with growth attenuating in the high school grades.

**Figure 1. Vertical Linking Constants Estimated from Chain-Linking and Concurrent Calibrations: Mathematics**



**Figure 2. Vertical Linking Constants Estimated from Chain-Linking and Concurrent Calibrations: ELA**



## Dimensionality

A central concern in the development of a vertical scale is whether changes in the assessed construct across grades limits the comparability of test scores. We do note, however, that because the linkages were limited to one adjacent grade, the linking design simply allows the adjacent grade ( $g-1$ ) item parameters to be represented on the target grade ( $g$ ) scale, with comparisons of test scores leading to very specific inferences. In this case, the adjacent grade ( $g-1$ ) scale scores represent the baseline for measuring the acquisition of content taught in subsequent target grade ( $g$ ). In this sense, the derived vertical scale is not a developmental scale measuring progress on a common underlying construct, but rather a sequence of linked adjacent grade scales, with inferences about student growth limited to directly linked scales.

Nevertheless, the concurrent calibrations afford an opportunity to evaluate the reasonableness of the unidimensionality assumption underlying the measurement model, and thus whether a common reporting scale across grade levels and courses can be supported.

To evaluate the degree to which multidimensionality is present in the vertical linking items, Winsteps provides principal components analysis of residuals from the common underlying achievement dimension. The variance accounted for by the first principal component of the residuals, the secondary dimension, indicates the presence of multidimensionality. The eigenvalues and the percent of variance explained by common factor underlying item responses items and the secondary dimension, representing the common variation underlying the residuals, are shown in Table 4. As the results of this comparison indicate, evidence for multidimensionality is weak, and the assumption of unidimensionality in the achievement items across grades is supported.

**Table 4. Eigenvalues and Percent of Variance Accounted for by Items and the First Contrast.**

Dimensionality Component	Eigenvalue	Percent of Variance Accounted For
<i>ELA</i>		
Raw variance explained by items	97.1	16.3%
Unexplained variance in 1 <sup>st</sup> contrast	2.2	0.4%
<i>Math</i>		
Raw variance explained by items	121.4	18.9%
Unexplained variance in 1 <sup>st</sup> contrast	2.1	0.3%

Winsteps also plots the residuals of the items with respect to the underlying achievement dimension and identifies clusters of items based on this contrast to assist in the identification of sources of multidimensionality. For ELA, the contrast is defined by a cluster of writing dimension scores, across grade levels, versus other item types in the ELA assessment. Although evidence for the unidimensionality of ELA test scores is strong, that reading and writing items would exhibit some degree of multidimensionality is not surprising, and could represent either differences in the assessed construct or method of response, or both. Disattenuated correlation coefficients among the ability estimates derived from items comprising the three clusters are uniformly high, with values of 0.93, 1.00, and 0.98, indicating that the items in the three clusters are measuring a common underlying dimension.

For math, item clusters identified by residuals are defined by the equation item types versus other items in the math assessments, and the items types defining the contrast extend across grade levels. This contrast could represent a method factor, given the different response mode for equation item types, or could even reflect differences in the cognitive processes assessed by these item types. Nevertheless, disattenuated correlations of ability estimates based on the items identified in the three clusters are all 1.0, indicating that items in each cluster are measuring the same underlying construct.

## Reporting on the Vertical Scale

Standard setting workshops were conducted the week of July 13, 2015 to recommend to the Arizona State Board of Education a set of performance standards to classify student performance on the AzMERIT assessments. Arizona educators reviewed the performance level descriptors and used the Bookmarking method to identify the level of achievement on the AzMERIT consistent with students who just barely qualify for entry into each performance level.

ADE intends to report student performance on the AzMERIT on the vertical scale derived from the chain-linked within grade scales. Because ability estimates of extremely low and high scoring students are less precise, test scores for very low and high performing students will be more prone to fluctuate over time. To minimize scale score instability for very low and high scoring students, ability estimates will be truncated at +3.5 on the within grade scale before being transformed to the vertically linked scale.

Student ability estimates will then be transformed from the vertically linked Rasch theta scale to the subject specific AzMERIT reporting scale:

$$ELA \text{ Scale Score} = 2500 + (30 * \theta)$$

$$Math \text{ Scale Score} = 3500 + (30 * \theta)$$

Applying the AzMERIT scale score transformations to the performance standards recommended by the workshop panels results in the system of scale score ranges for each of the AzMERIT performance level classifications identified in Table 5 for ELA and Table 6 for math.

**Table 5. ELA Scale Score Ranges for AzMERIT Performance Level Classification**

<b>ELA Assessment</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	2395-2496	2497-2508	2509-2540	2541-2605
<b>Grade 4</b>	2400-2509	2510-2522	2523-2558	2559-2610
<b>Grade 5</b>	2419-2519	2520-2542	2543-2577	2578-2629
<b>Grade 6</b>	2431-2531	2532-2552	2553-2596	2597-2641
<b>Grade 7</b>	2438-2542	2543-2560	2561-2599	2600-2648
<b>Grade 8</b>	2448-2550	2551-2571	2572-2603	2604-2658
<b>Grade 9</b>	2454-2554	2555-2576	2577-2605	2606-2664
<b>Grade 10</b>	2458-2566	2567-2580	2581-2605	2606-2668
<b>Grade 11</b>	2465-2568	2569-2584	2585-2607	2608-2675

**Table 6. Math Scale Score Ranges for AzMERIT Performance Level Classification**

<b>Math Assessment</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	3395-3494	3495-3530	3531-3572	3573-3605
<b>Grade 4</b>	3435-3529	3530-3561	3562-3605	3606-3645
<b>Grade 5</b>	3478-3562	3563-3594	3595-3634	3635-3688
<b>Grade 6</b>	3512-3601	3602-3628	3629-3662	3663-3722
<b>Grade 7</b>	3529-3628	3629-3651	3652-3679	3680-3739
<b>Grade 8</b>	3566-3649	3650-3672	3673-3704	3705-3776
<b>Algebra I</b>	3577-3660	3661-3680	3681-3719	3720-3787
<b>Geometry</b>	3609-3672	3673-3696	3697-3742	3743-3819
<b>Algebra II</b>	3629-3689	3690-3710	3711-3750	3751-3839

## Summary

Vertical scaling was accomplished both through chain-linking of within-grade scales, which has the advantage of preserving the measurement construct at each grade, but may lead to less precise vertical linking constants since linking error accumulates across linkages, as well as through concurrent calibration of all vertical linking items, which may yield more precise vertical linking constants, but may not preserve the measurement construct assessed within each grade level and EOC assessment. Both methods converged to produce highly comparable vertical linking constants. With an eye to preserving the measurement construct in each of the within-grade scales, the preliminary vertical scale was developed using results from the chain-linking approach.

The concurrent calibrations afforded the opportunity to evaluate the vertical linking set for evidence of multidimensionality. The variance accounted for by any secondary dimension was weak for both the ELA and math assessments. Moreover, when the basis for any multidimensionality was investigated, it appeared related to differentiation of reading and writing in the ELA assessment, which may be expected, and differentiation of equation and other item types in math, which could be due to method factors or possibly even differentiation in the underlying cognitive processes assessed. In either event, the measurement construct appears to be preserved across the grade level assessments.

## References

- Ito, K., Sykes, R. C., & Yao, L. (2008). Concurrent and separate grade-groups linking procedures for vertical scaling. *Applied Measurement in Education*, 21, 187-206.
- Karkee, T., Lewis, D. M., Hoskens, M., Yao, L., & Haug, C. (2003). *Separate versus Concurrent Calibration Methods in Vertical Scaling*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.

## **Appendix K – Panelist Evaluation Forms**

## Document K. Overall Workshop Evaluations

Please take your time to carefully complete the information below. It is important that you answer this evaluation thoroughly as the results will be used to improve the Standard Setting process. The information gathered from this evaluation will be reported in the Standard Setting Technical Report that will be available to the public.

Panelist ID Number: \_\_\_\_\_

1. At the end of the workshop,

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a.	I understood the purpose of this standard setting workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	The procedures used to recommend performance standards were fair and unbiased.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	The training provided me with the information I needed to recommend performance standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Taking the online assessment helped me to better understand what students need to know and be able to do to answer each item.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	The Performance Level Descriptors (description of what students within each performance level are expected to know and be able to do) provided a clear picture of expectations for student achievement at each level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	I was able to develop an understanding of the knowledge and skills demonstrated by students who are “just barely” described by the Performance Level Descriptors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	I understood how to review each page in the Ordered Item Book (OIB) to determine what students must know and be able to do to answer each item correctly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	I was able to interpret having a two-thirds likelihood of answering an item correctly as indicating mastery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	I understood how to place my bookmarks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	I found the benchmark data and discussions helpful in my decisions about where to place my bookmarks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
k.	I found the panelist agreement data (room medians and individual bookmark placements) and discussion helpful in my decisions about where to place my bookmarks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	I found the impact data (percentage of students that would achieve at the level indicated by the OIB page) and discussions helpful in my decisions about where to place my bookmarks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	I felt comfortable expressing my opinions throughout the workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n.	Everyone was given the opportunity to express his or her opinions throughout the workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please rate the clarity of the following components of the workshop.

		<b>Very Unclear</b>	<b>Somewhat Unclear</b>	<b>Somewhat Clear</b>	<b>Very Clear</b>
a.	Instructions provided by the Workshop Leader	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Performance Level Descriptors (PLDs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Ordered Item Booklet (OIB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Panelist agreement data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Impact data (percentage of students that would achieve at the level indicated by the OIB page)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



3. How important was each of the following factors in your placement of the bookmarks?

		<b>Not Important</b>	<b>Somewhat Important</b>	<b>Very Important</b>
a.	Performance Level Descriptors (PLDs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Your perception of the difficulty of the items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Your experiences with students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Discussions with other panelists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	External benchmark data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Room agreement data (room medians and individual bookmark placements)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Impact data (percentage of students that would achieve at the level indicated by the OIB page)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Interpolated page numbers provided for adjacent grades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How appropriate was the amount of time you were given to complete the following components of the standard setting process?

		<b>Too Little</b>	<b>About Right</b>	<b>Too Much</b>
a.	Large group orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Experiencing the online assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Review of the Performance Level Descriptors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Discussion of skills demonstrated by students who are “just barely” described by each PLD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Review of the Ordered Item Booklet (OIB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Placement of your bookmarks in each round	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Round 1 discussion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Please read the following statement carefully and indicate your response.

		Strongly Disagree	Disagree	Agree	Strongly Agree
a.	I am confident that students classified as <b>Proficient</b> demonstrate a fundamental understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	I am confident that students classified as <b>Partially Proficient</b> demonstrate a partial understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	I am confident that students classified as <b>Highly Proficient</b> demonstrate an advanced understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. What suggestions do you have to improve the training or standard setting process?

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7. Do you have any additional comments? Please be specific.

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*Thank you for participating in the Standard Setting Workshop!*

## Appendix L – Recommend Performance Standards by Round

**Table L. Recommended Cuts By Round**

Form	Round	Panelist	Partially Proficient	Proficient	Highly Proficient
Grade 3 ELA	Round 1	Minimum	16	22	45
		Maximum	19	26	50
		Median	18	25	49
	Round 2	Minimum	16	24	42
		Maximum	19	25	49
		Median	18	24	49
	Moderation	--	--	25	--
	Final	--	18	25	49
Grade 4 ELA	Round 1	Minimum	3	13	52
		Maximum	33	58	63
		Median	19	33	57
	Round 2	Minimum	15	25	50
		Maximum	26	38	59
		Median	19	32	57
	Final	--	19	32	57
Grade 5 ELA	Round 1	Minimum	11	28	46
		Maximum	15	33	64
		Median	15	32	53
	Round 2	Minimum	14	32	52
		Maximum	15	32	57
		Median	15	32	53
	Final	--	15	32	53
Grade 6 ELA	Round 1	Minimum	9	21	36
		Maximum	21	47	64
		Median	14	28	51
	Round 2	Minimum	13	28	51
		Maximum	26	46	61
		Median	16	30	58
	Final	--	16	30	58
Grade 7 ELA	Round 1	Minimum	15	34	58
		Maximum	20	39	63
		Median	18	36	60
	Round 2	Minimum	15	34	58
		Maximum	20	39	63
		Median	18	36	61
	Final	--	18	36	61
Grade 8 ELA	Round 1	Minimum	13	30	54

Form	Round	Panelist	Partially Proficient	Proficient	Highly Proficient
		Maximum	33	46	63
		Median	17	32	59
		Minimum	16	36	56
	Round 2	Maximum	28	42	65
		Median	19	38	62
	Final	--	19	38	62
Grade 9 ELA	Round 1	Minimum	15	27	51
		Maximum	18	35	59
		Median	17	32	56
	Round 2	Minimum	15	27	51
		Maximum	18	35	59
		Median	17	32	56
	Final	--	17	32	56
Grade 10 ELA	Round 1	Minimum	7	21	45
		Maximum	16	45	58
		Median	13	27	53
	Round 2	Minimum	12	26	52
		Maximum	15	34	56
		Median	14	32	53
	Moderation	--	13		59
	Final	--	13	32	59
Grade 11 ELA	Round 1	Minimum	6	20	44
		Maximum	15	46	61
		Median	13	29	52
	Round 2	Minimum	10	23	47
		Maximum	16	31	56
		Median	12	29	52
	Moderation	--	13	--	--
	Final	--	13	29	52
Grade 3 Math	Round 1	Minimum	6	29	50
		Maximum	11	35	56
		Median	10	33	52
	Round 2	Minimum	6	30	51
		Maximum	10	35	53
		Median	10	33	52
	Final	--	10	33	52
Grade 4 Math	Round 1	Minimum	7	23	44
		Maximum	20	37	61
		Median	9	32	56
	Round 2	Minimum	8	31	54

Form	Round	Panelist	Partially Proficient	Proficient	Highly Proficient
		Maximum	14	36	61
		Median	10	35	58
	Final	--	10	35	58
Grade 5 Math	Round 1	Minimum	4	26	51
		Maximum	10	30	58
		Median	6	27	52
	Round 2	Minimum	4	26	51
		Maximum	6	30	58
		Median	4	27	52
	Final	--	4	27	52
Grade 6 Math	Round 1	Minimum	3	19	42
		Maximum	21	30	51
		Median	9	26	46
	Round 2	Minimum	7	24	45
		Maximum	13	26	47
		Median	9	26	46
	Final	--	9	26	46
Grade 7 Math	Round 1	Minimum	10	29	44
		Maximum	11	33	48
		Median	11	30	46
	Round 2	Minimum	10	29	45
		Maximum	14	30	46
		Median	11	30	46
	Final	--	11	30	46
Grade 8 Math	Round 1	Minimum	11	24	39
		Maximum	17	33	52
		Median	15	28	44
	Round 2	Minimum	13	28	44
		Maximum	25	30	51
		Median	15	29	47
	Final	--	15	29	47
Algebra I	Round 1	Minimum	15	30	51
		Maximum	19	37	57
		Median	17	30	54
	Round 2	Minimum	16	31	53
		Maximum	19	38	57
		Median	17	33	56
	Final	--	17	33	56
Geometry	Round 1	Minimum	11	20	30
		Maximum	20	31	53

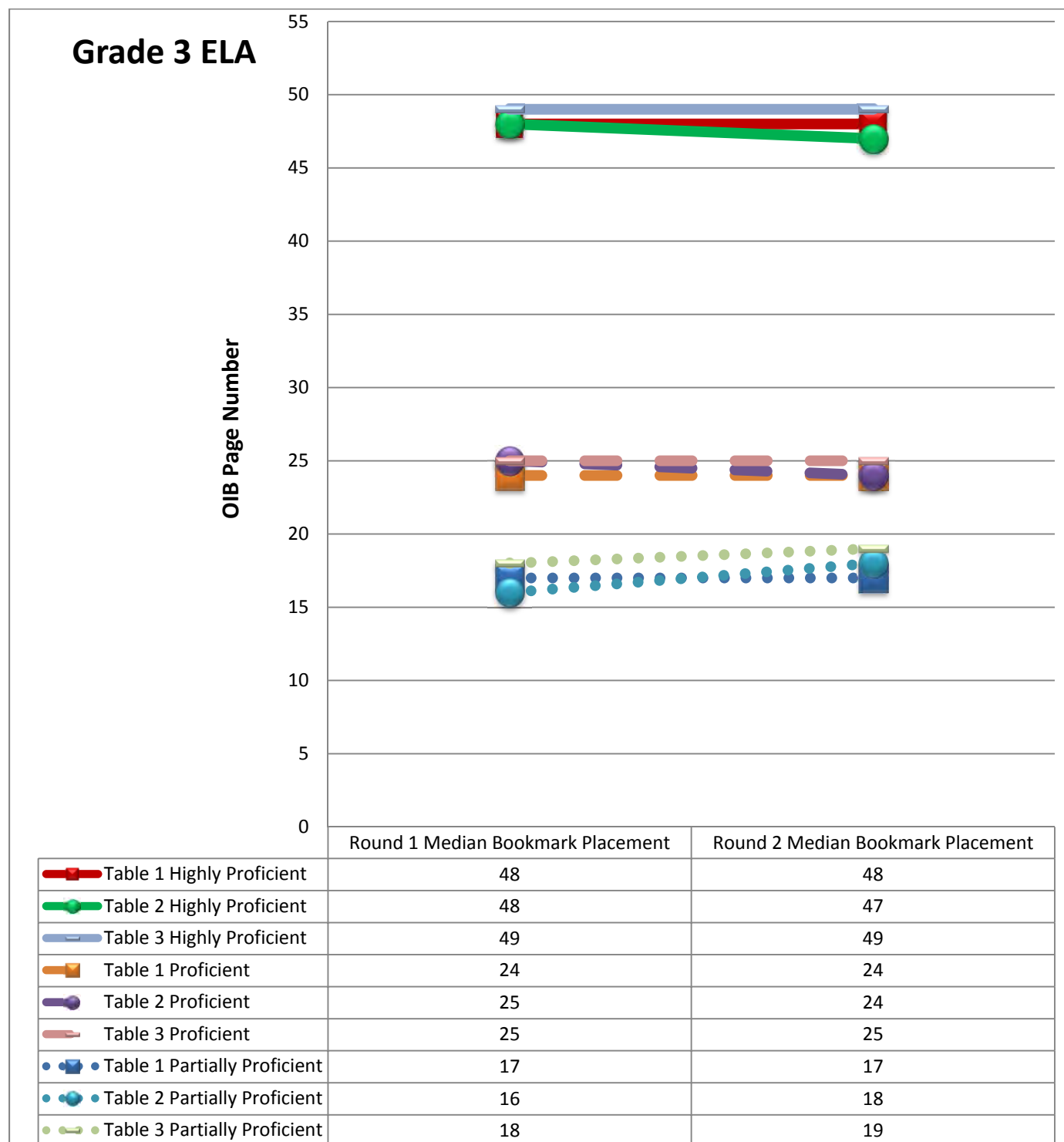
Form	Round	Panelist	Partially Proficient	Proficient	Highly Proficient
		Median	13	21	45
	Round 2	Minimum	12	30	45
		Maximum	18	31	54
		Median	16	30	52
	Final	--	16	30	52
Algebra II	Round 1	Minimum	9	27	48
		Maximum	30	43	57
		Median	15	29	51
	Round 2	Minimum	14	27	48
		Maximum	16	33	56
		Median	15	29	49
	Final	--	15	29	49



## **Appendix M – Convergence of Bookmarks across Rounds**

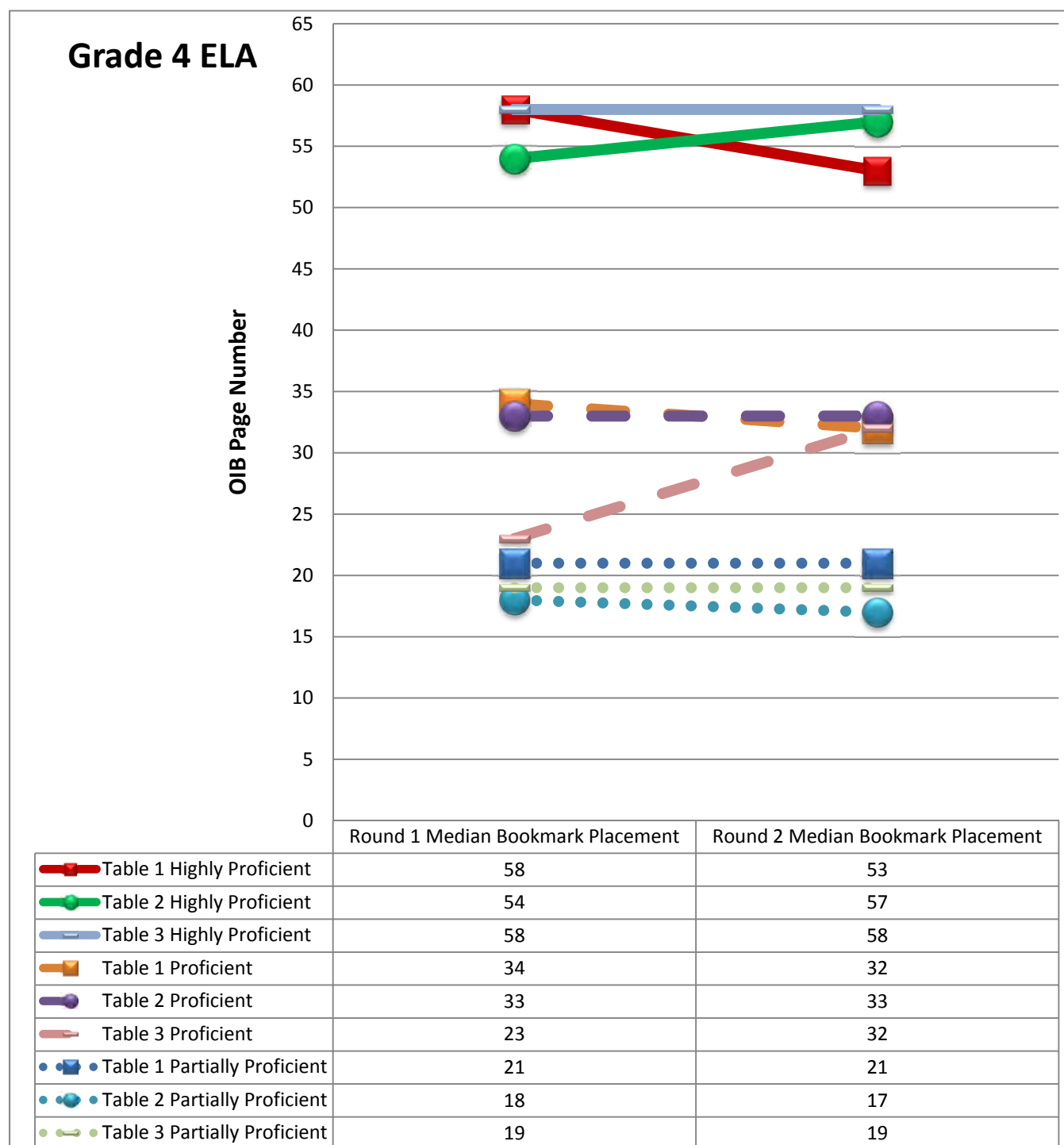
**Figure M1. Convergence of Bookmarks across Rounds – Grade 3 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



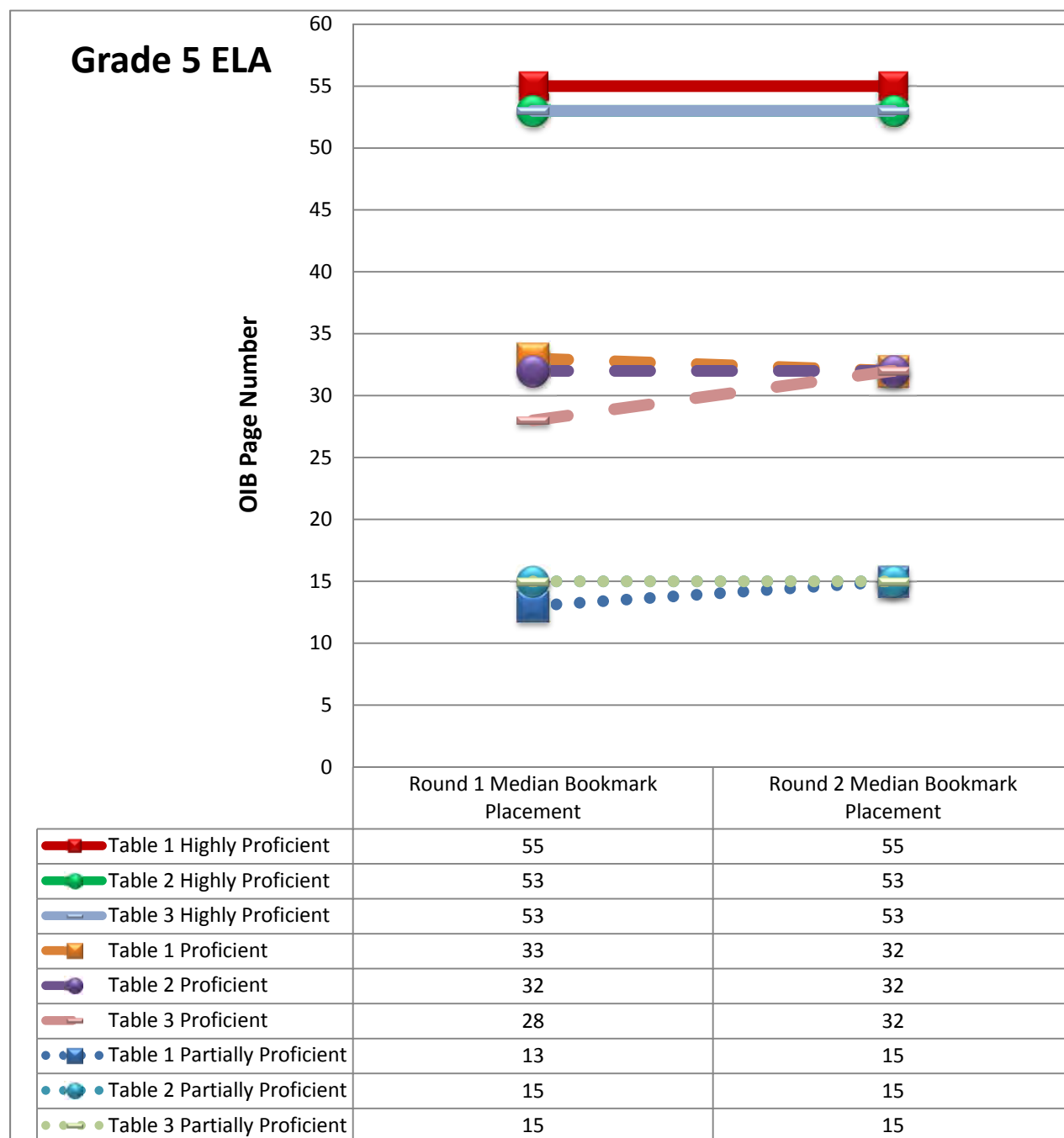
**Figure M2. Convergence of Bookmarks across Rounds – Grade 4 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



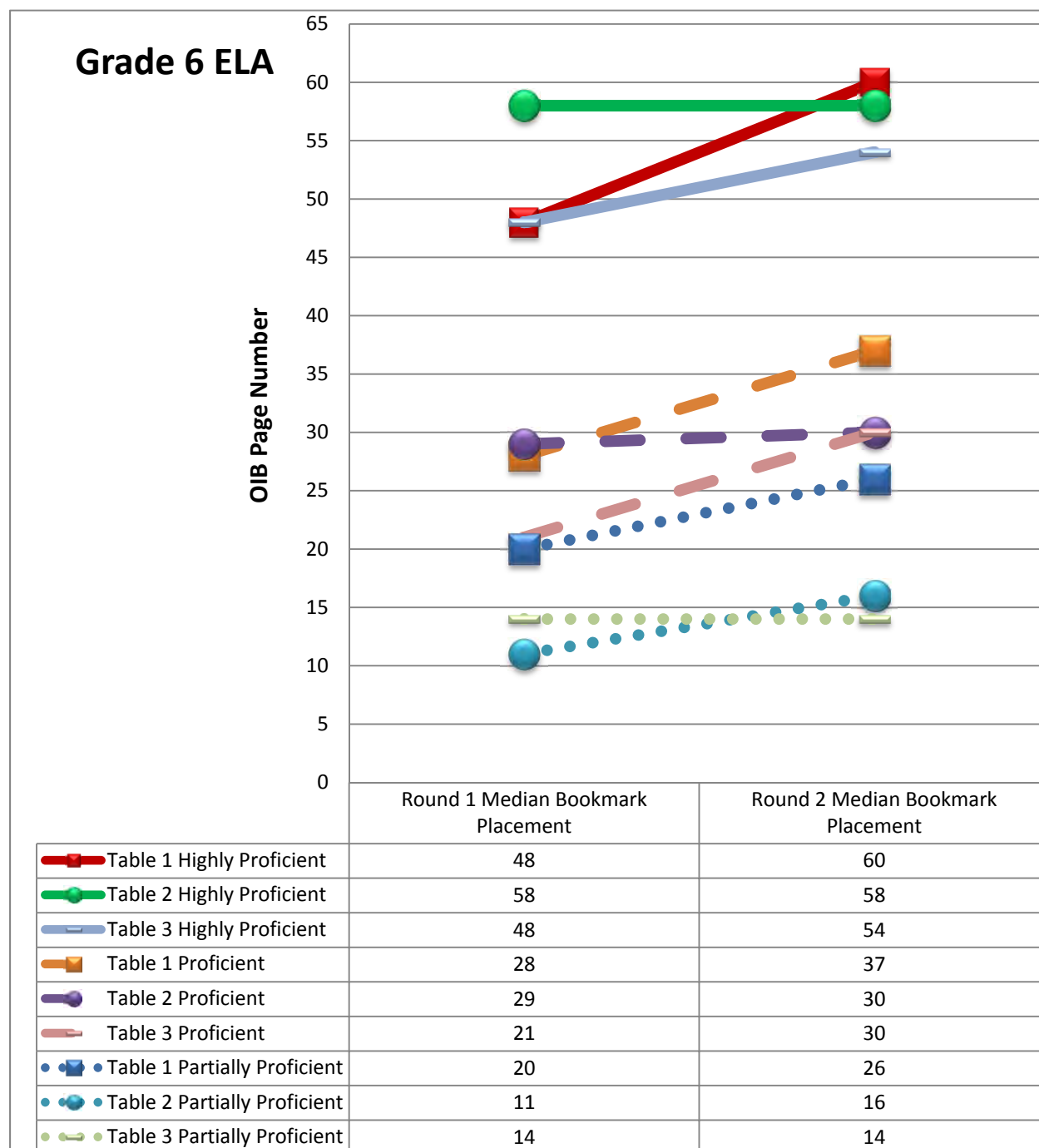
**Figure M3. Convergence of Bookmarks Across Rounds – Grade 5 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



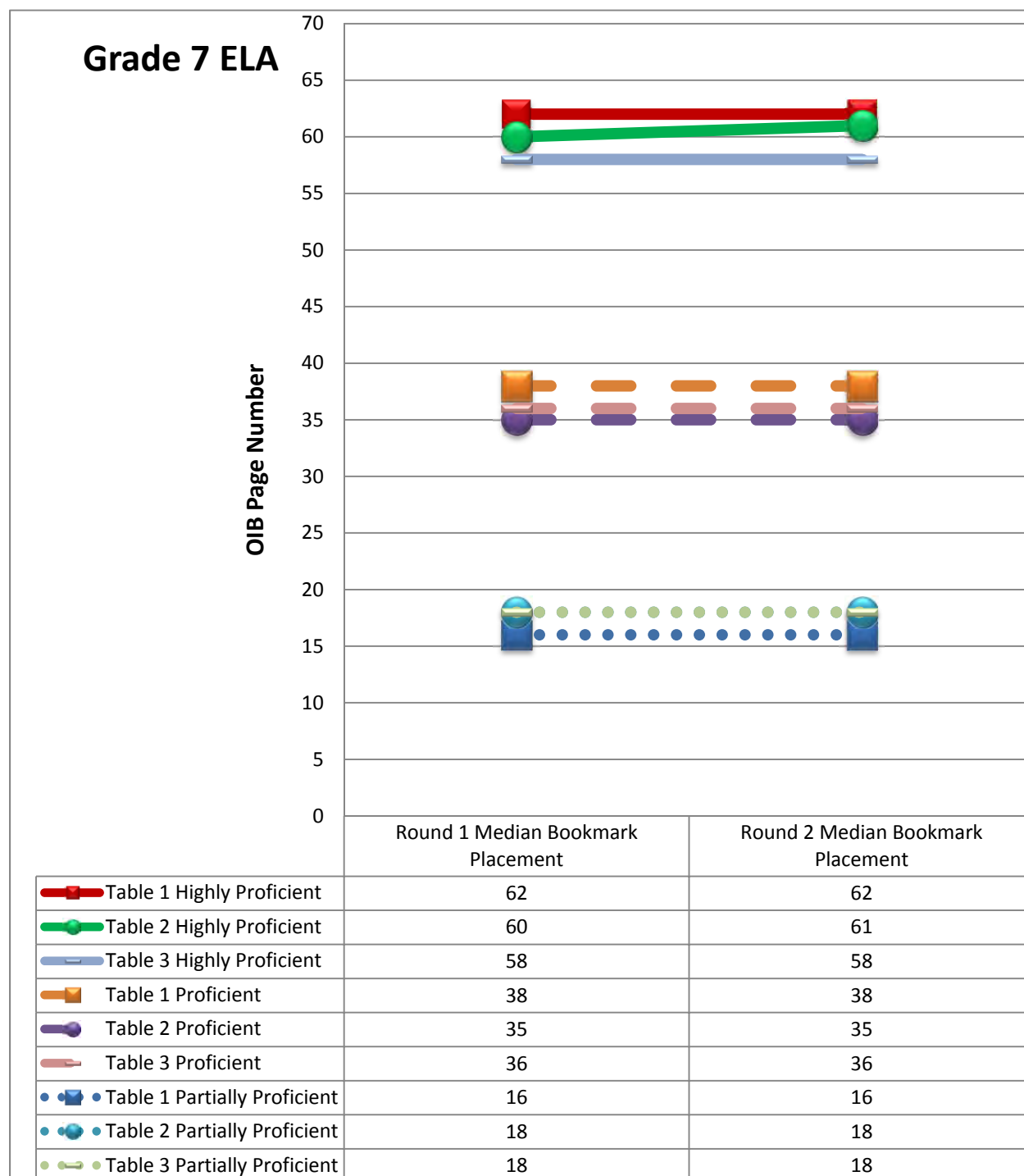
**Figure M4. Convergence of Bookmarks Across Rounds – Grade 6 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



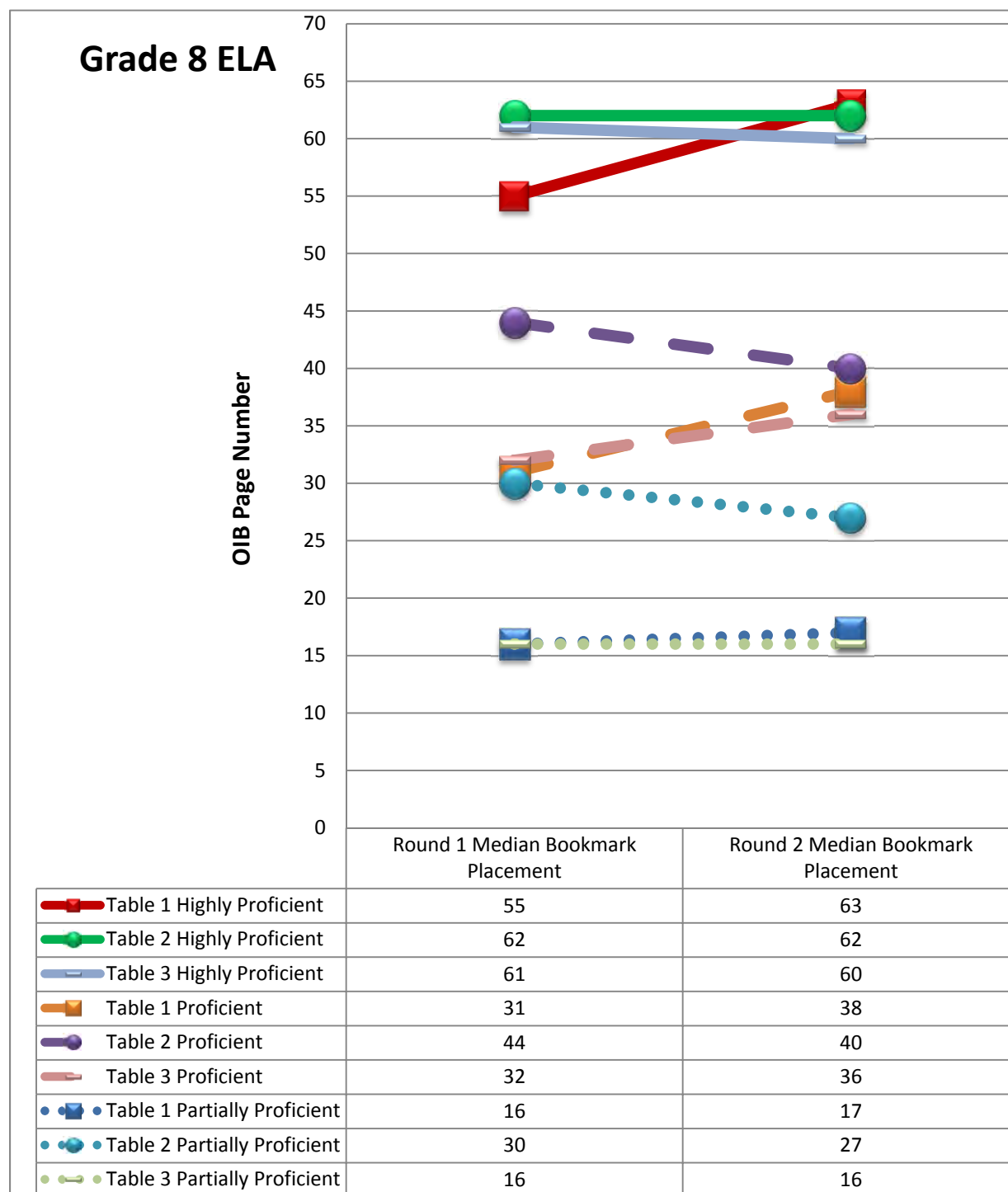
**Figure M5. Convergence of Bookmarks Across Rounds – Grade 7 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



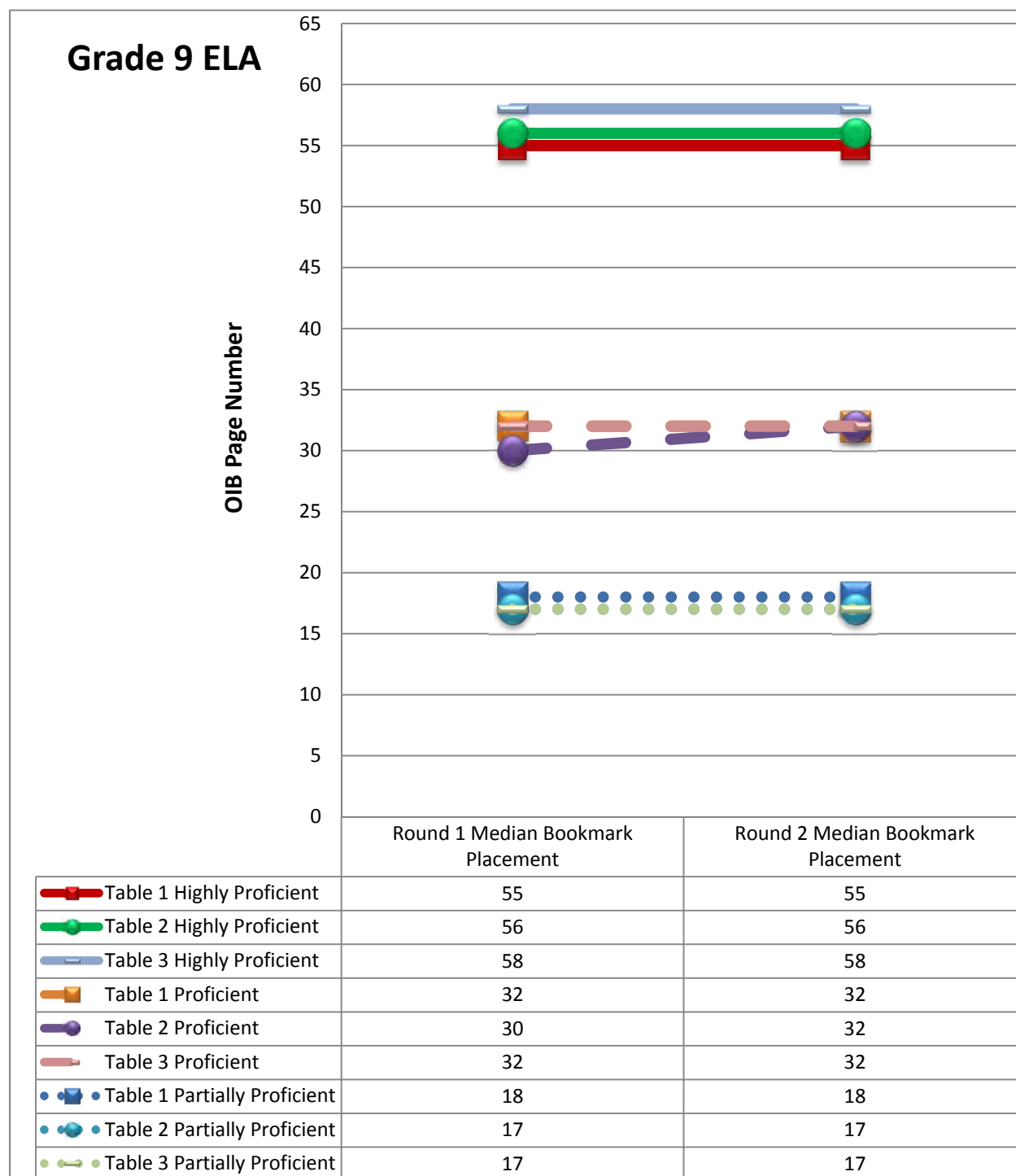
**Figure M6. Convergence of Bookmarks across Rounds – Grade 8 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



**Figure M7. Convergence of Bookmarks across Rounds – Grade 9 ELA**

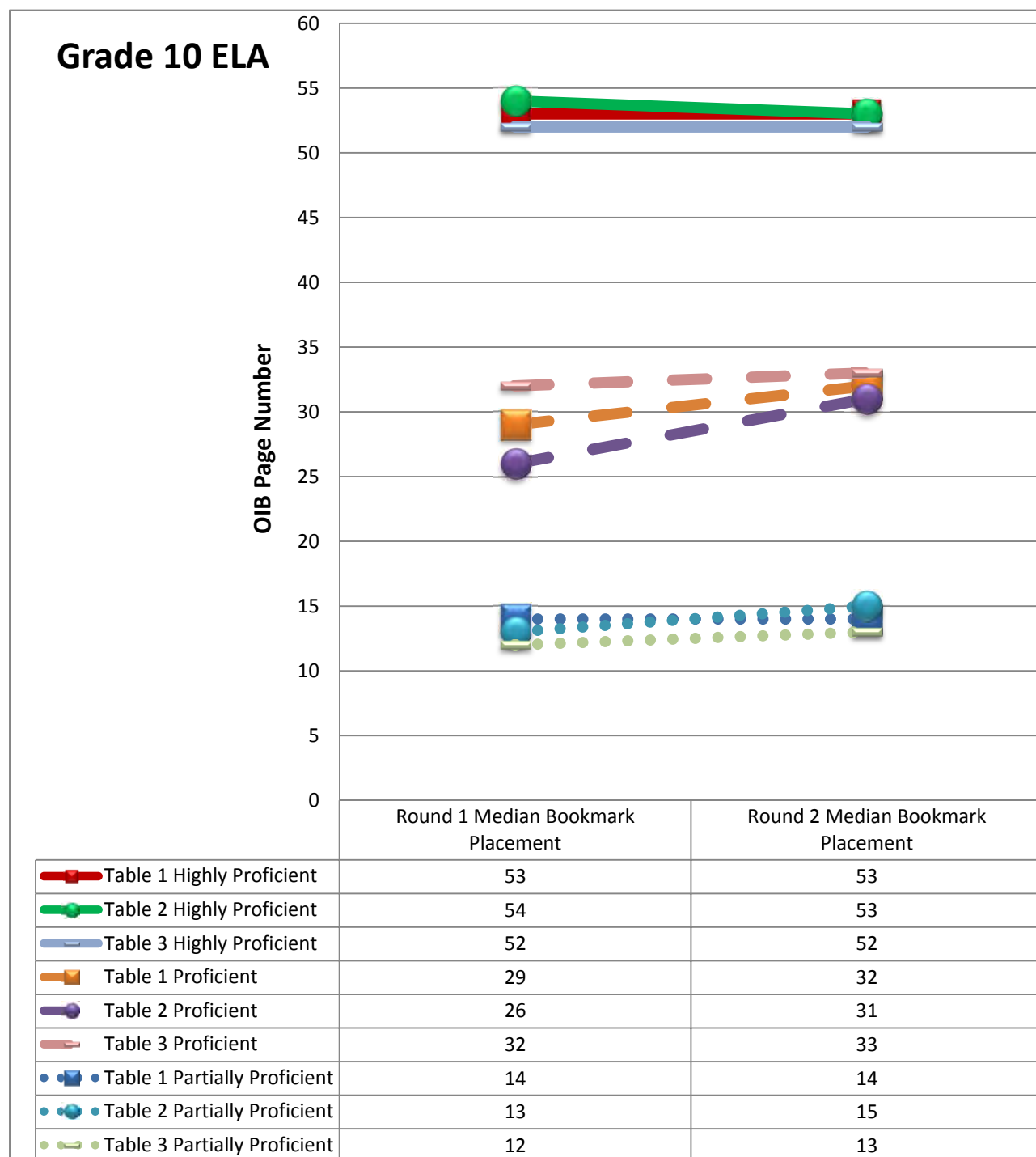
The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.





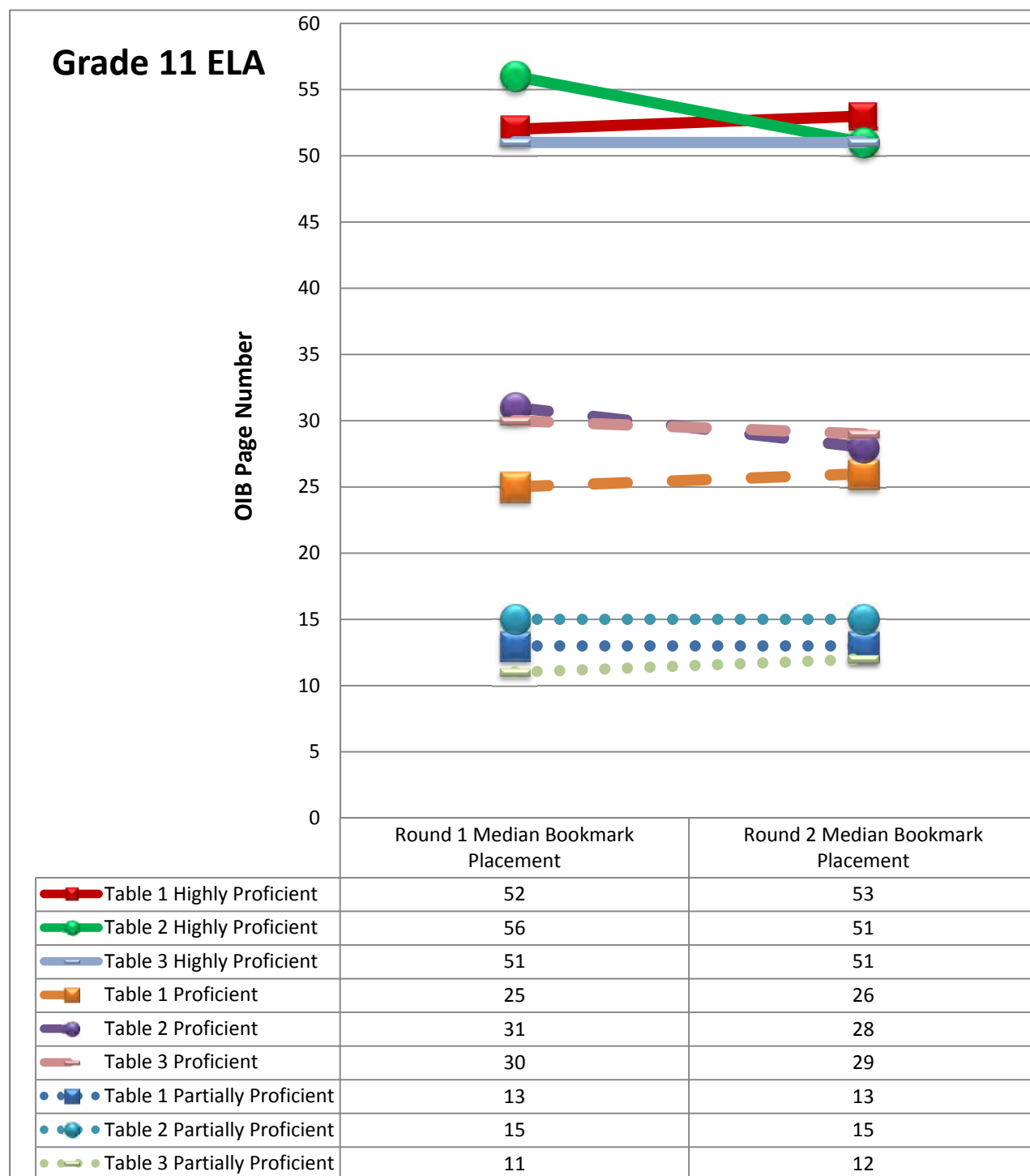
**Figure M8. Convergence of Bookmarks across Rounds – Grade 10 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



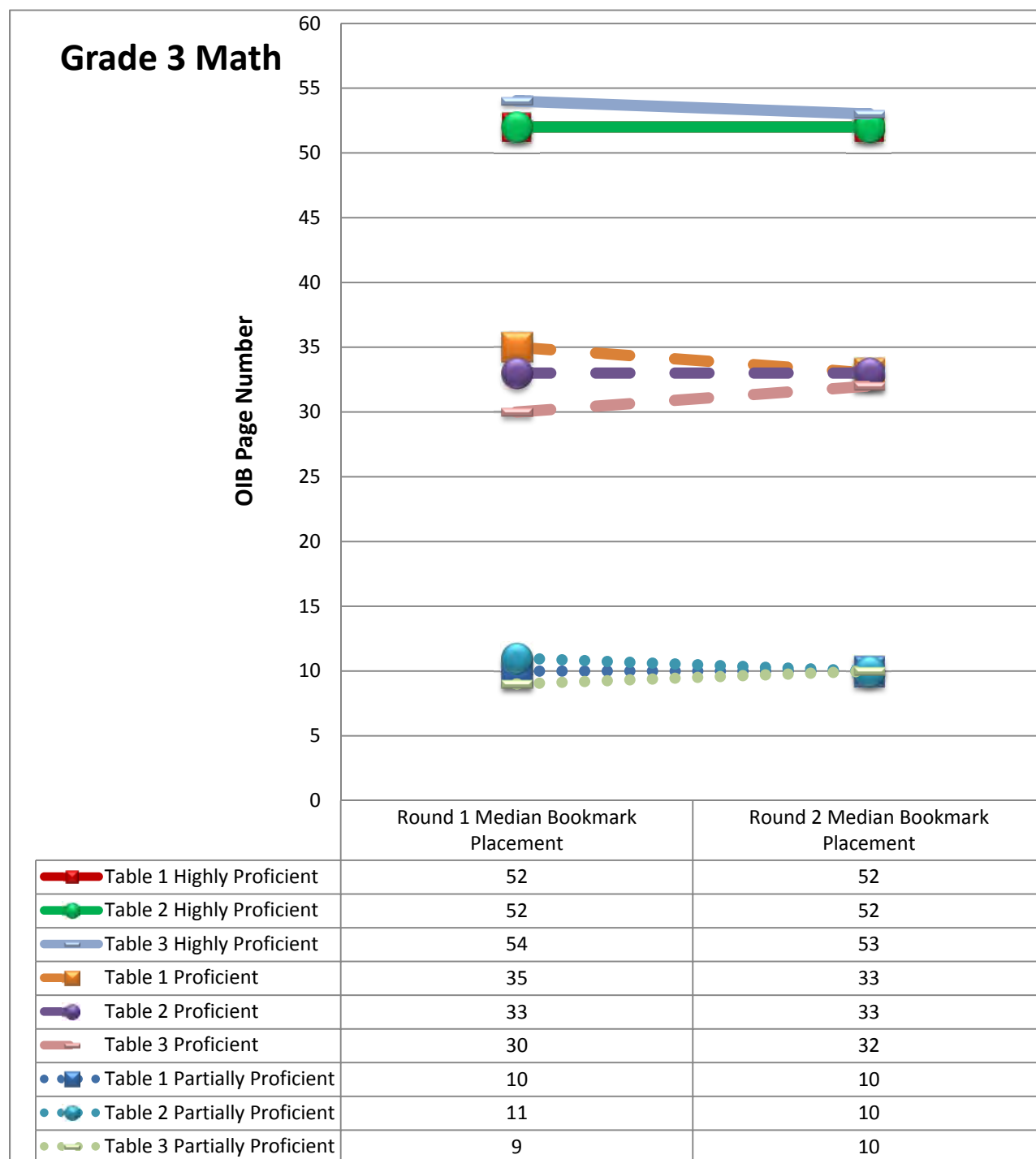
**Figure M9. Convergence of Bookmarks across Rounds – Grade 11 ELA**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



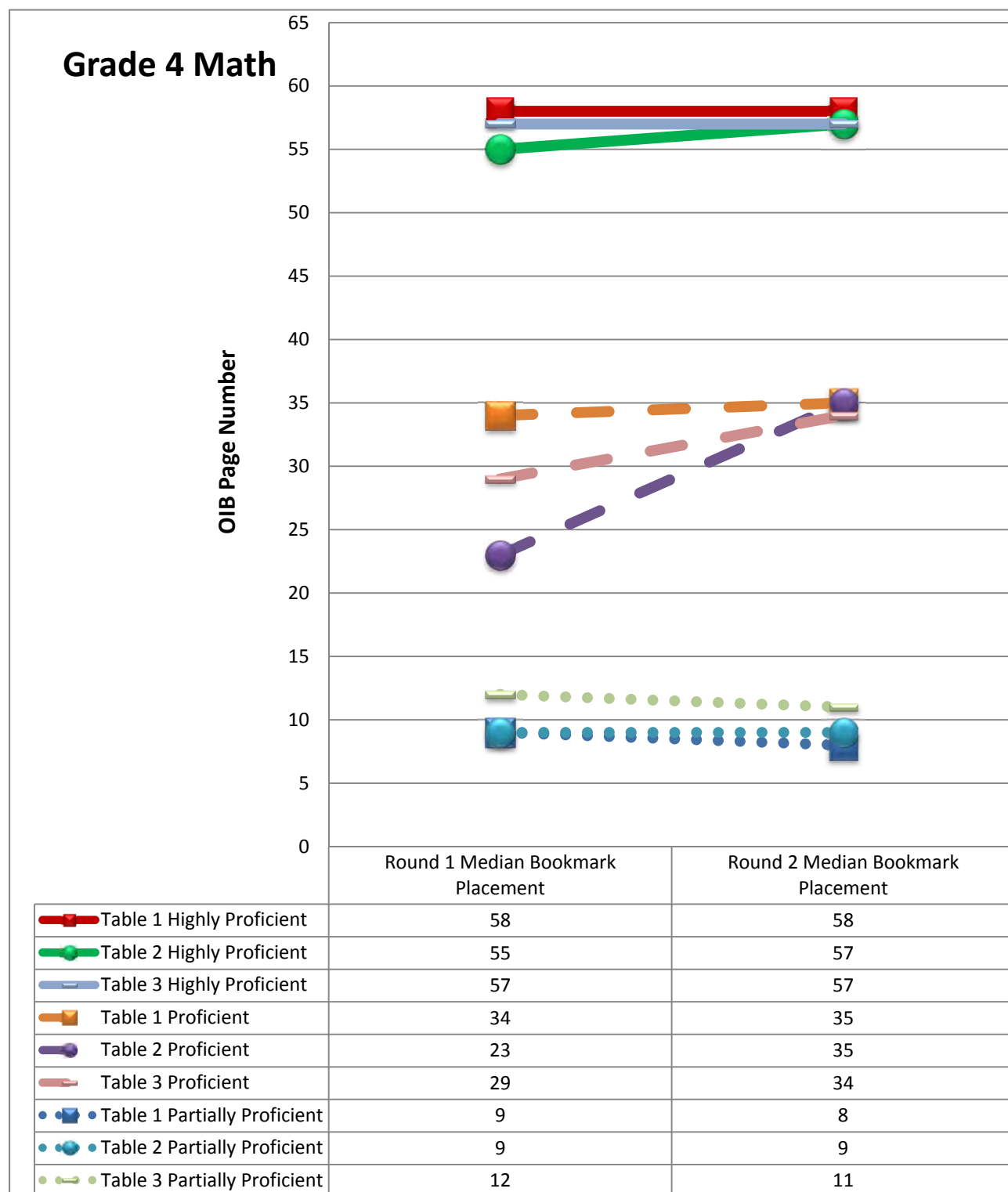
**Figure M10. Convergence of Bookmarks across Rounds – Grade 3 Math**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



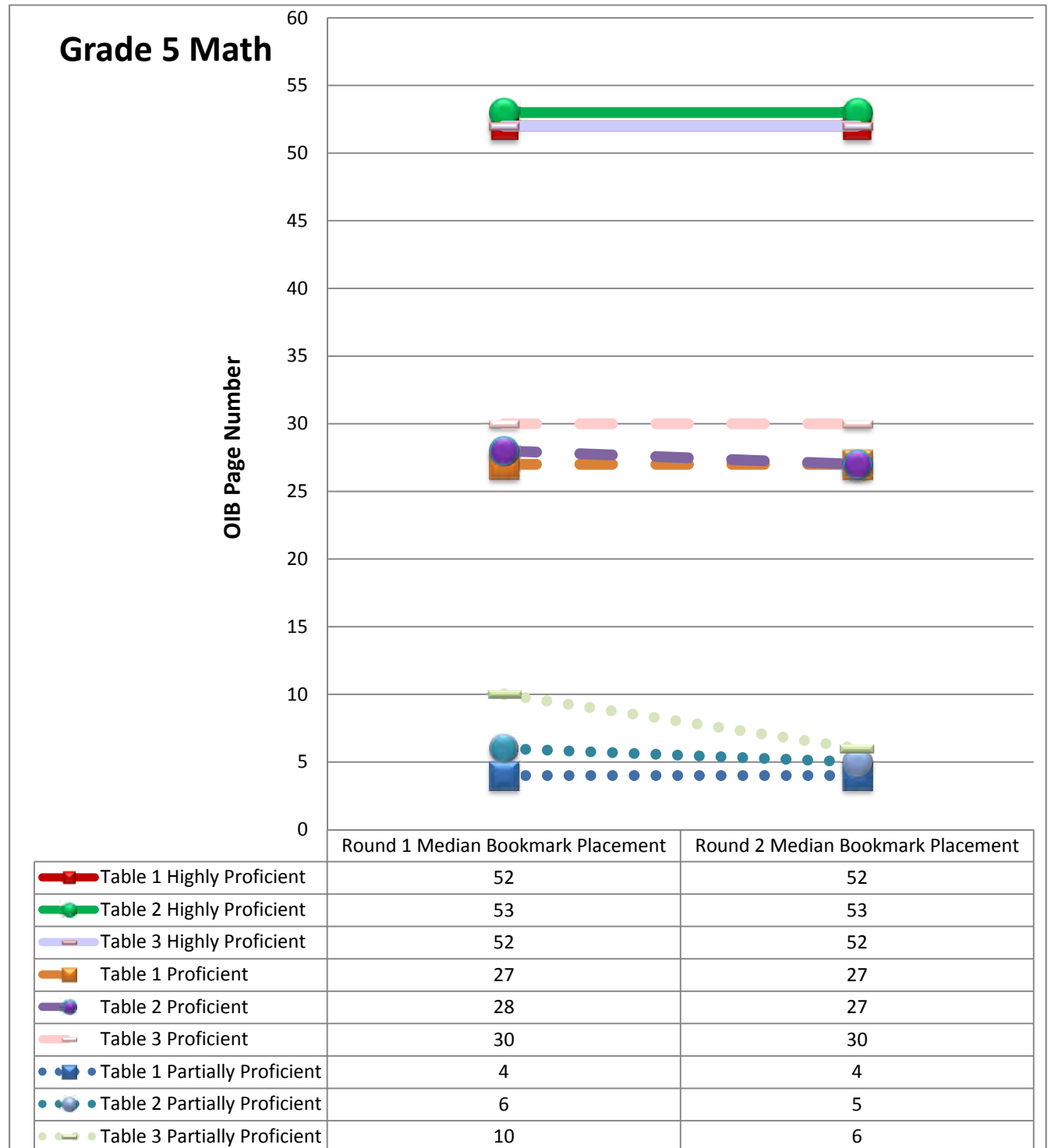
**Figure M11. Convergence of Bookmarks across Rounds – Grade 4 Math**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



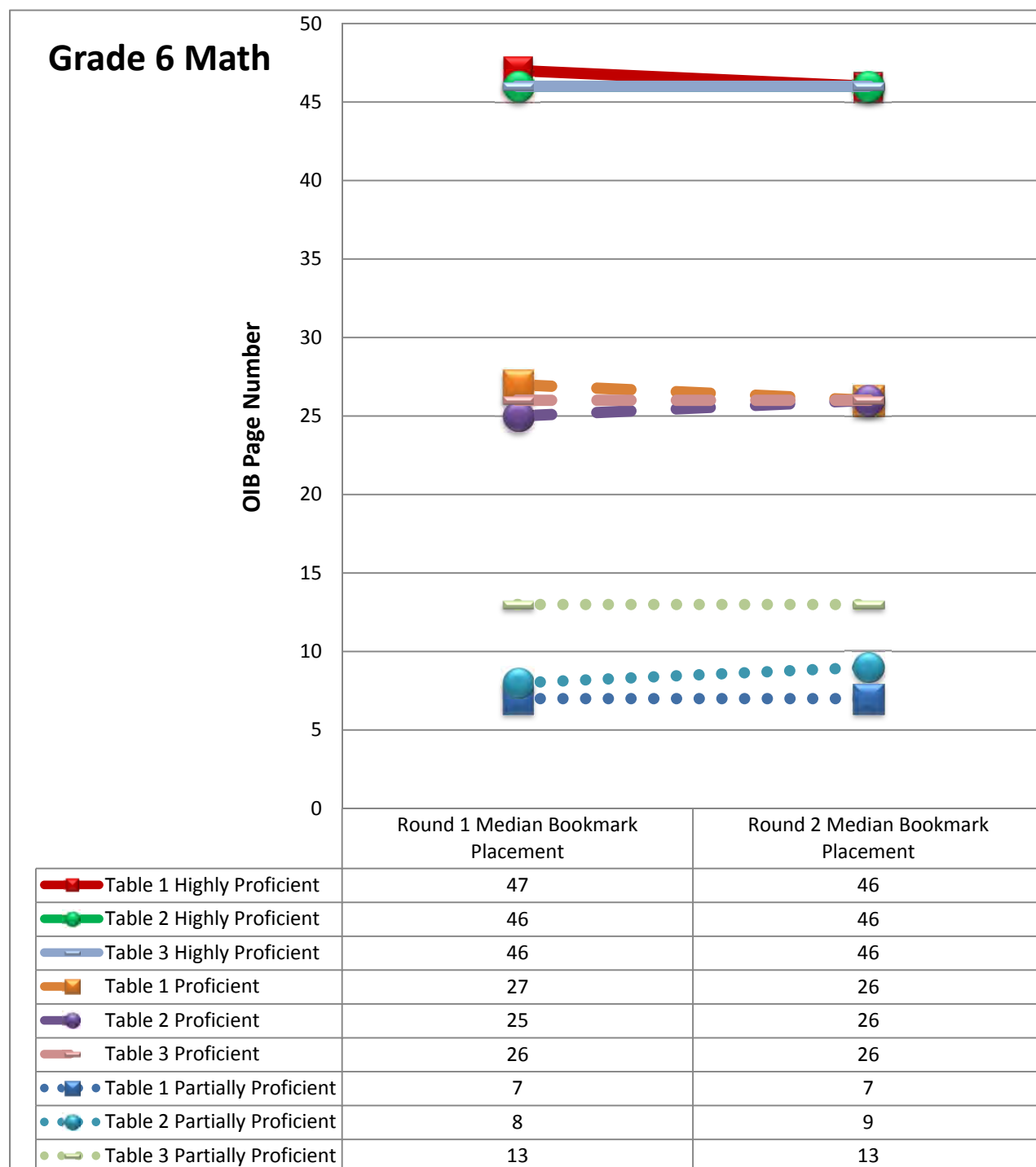
**Figure M12. Convergence of Bookmarks across Rounds – Grade 5 Math**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



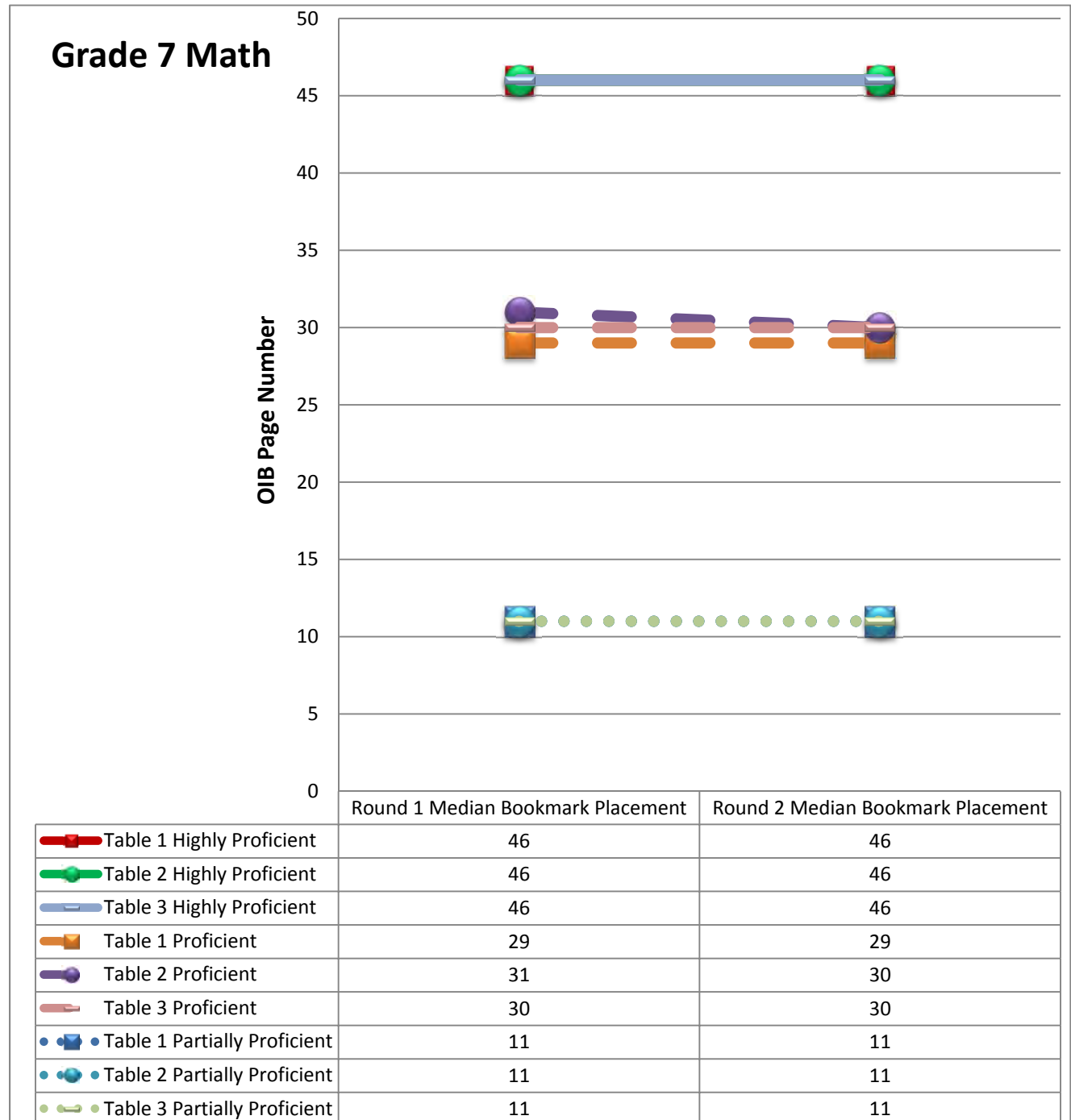
**Figure M13. Convergence of Bookmarks across Rounds – Grade 6 Math**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



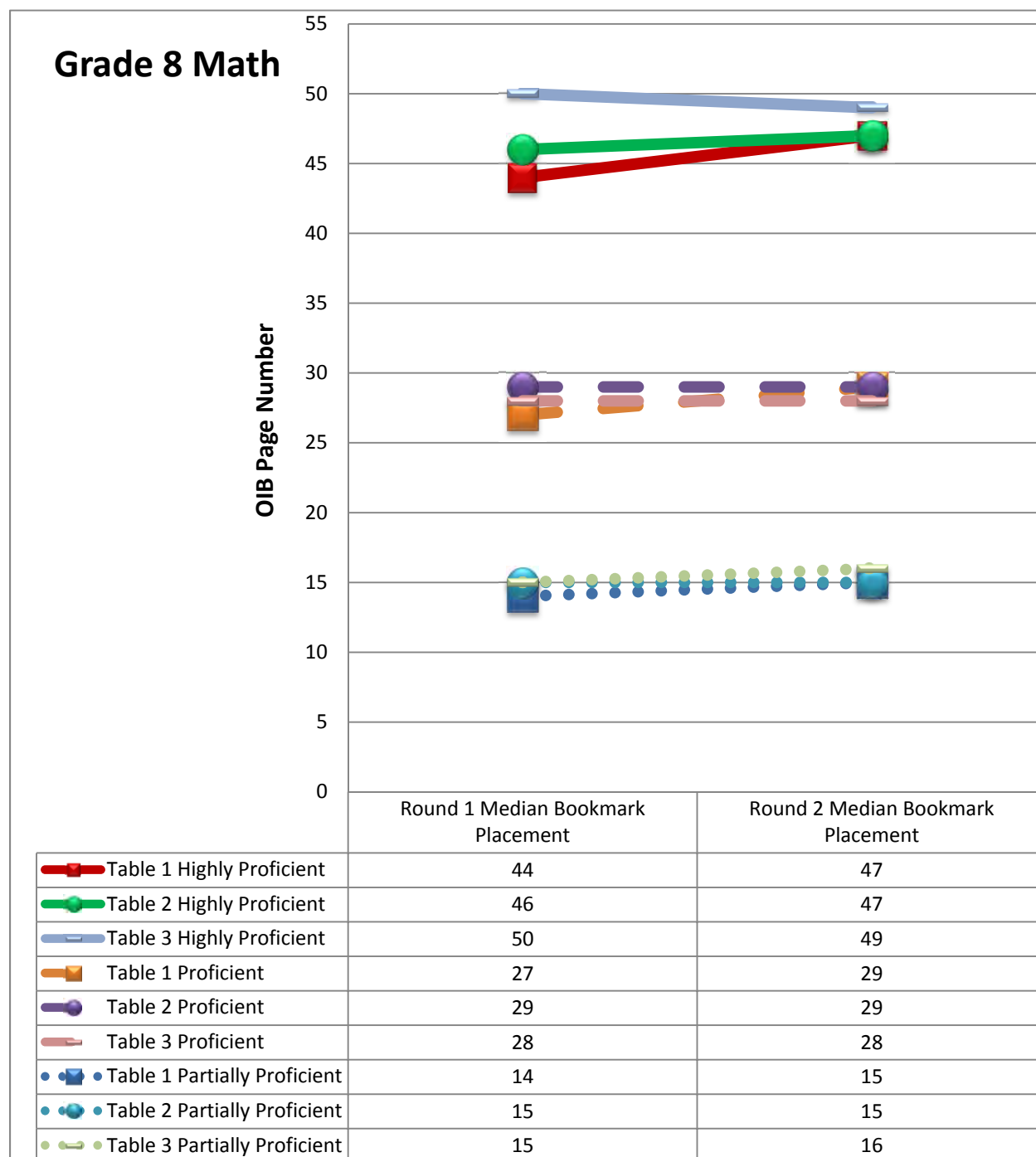
**Figure M14. Convergence of Bookmarks across Rounds – Grade 7 Math**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



**Figure M15. Convergence of Bookmarks across Rounds – Grade 8 Math**

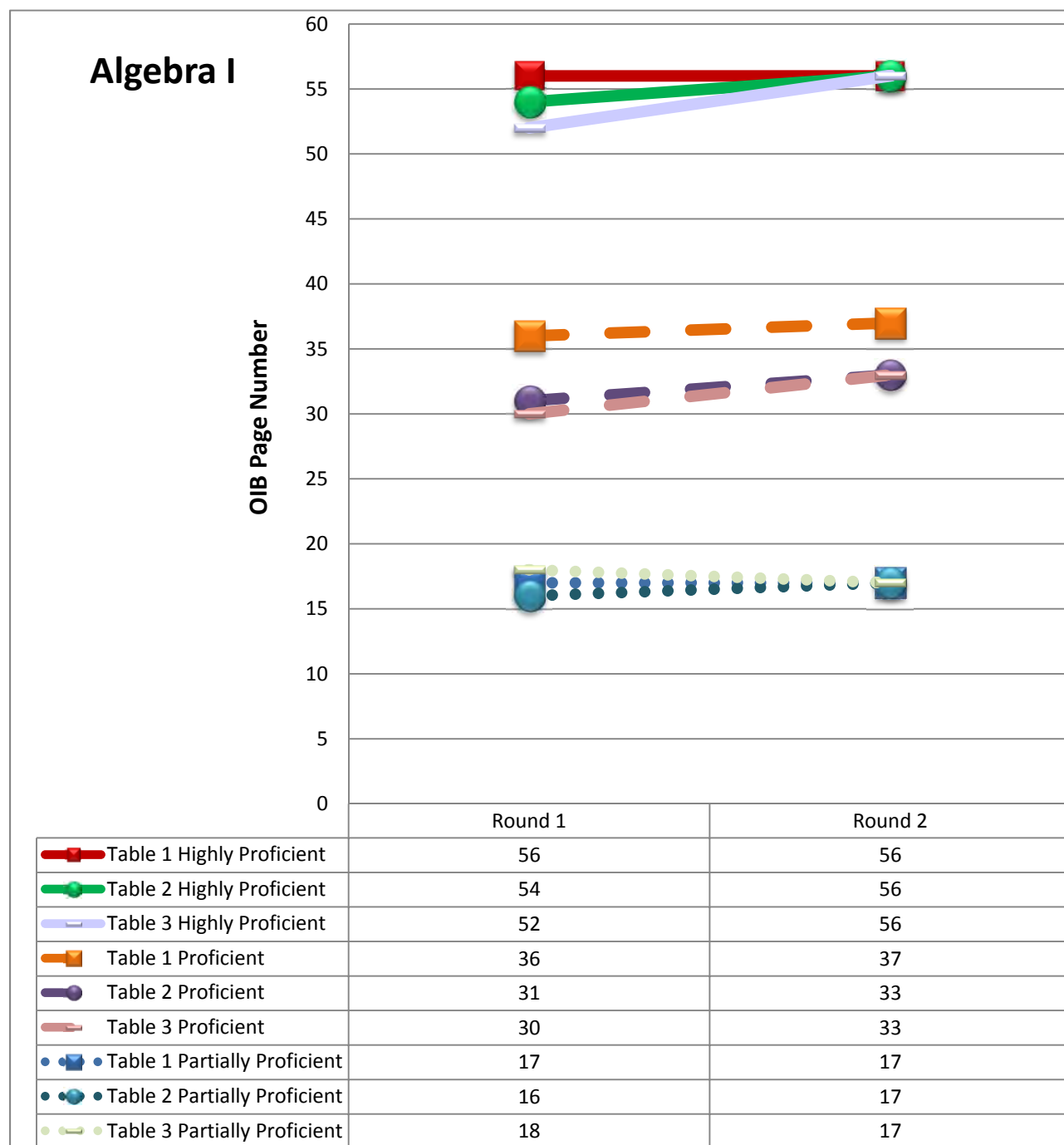
The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.





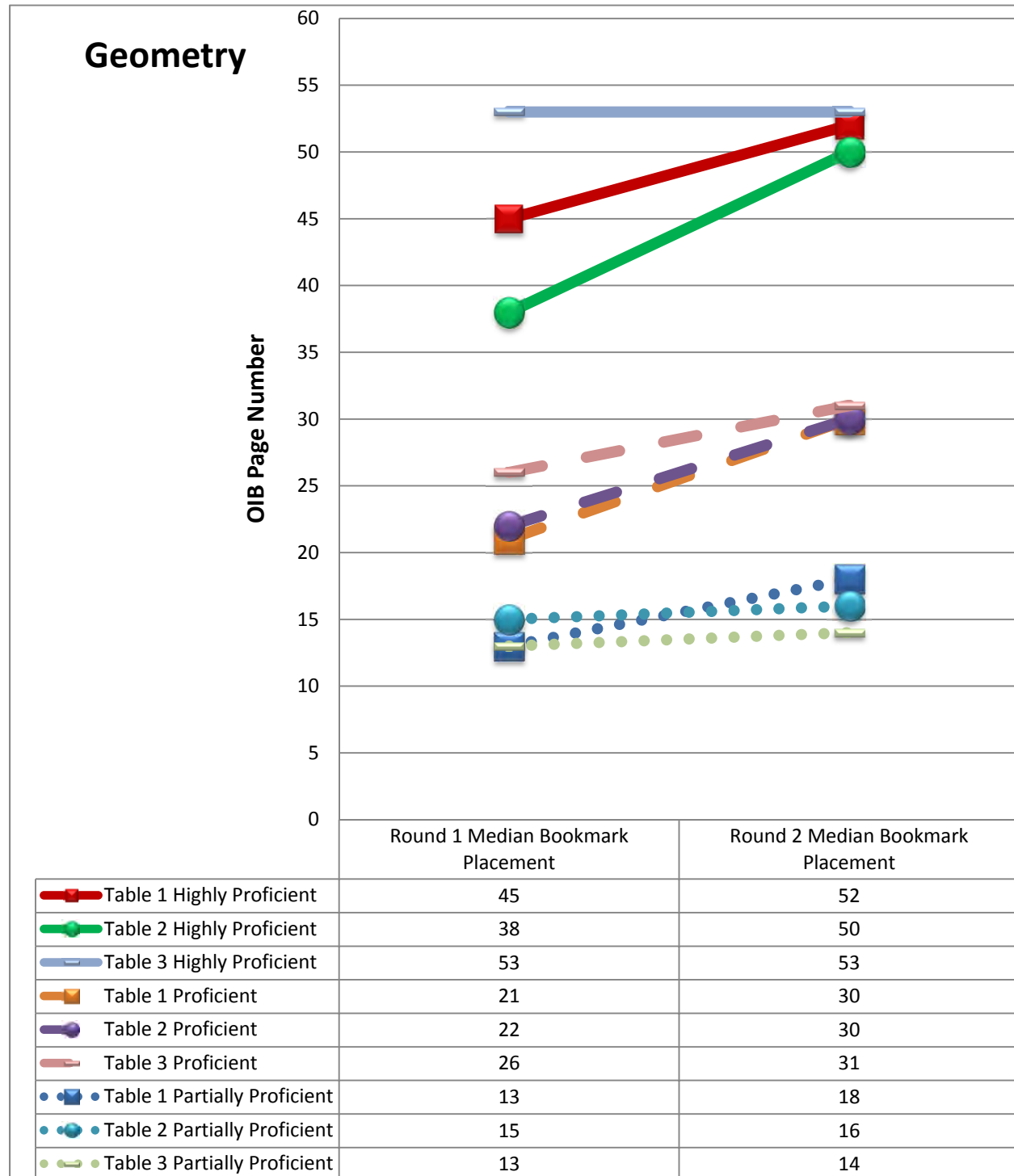
**Figure M16. Convergence of Bookmarks across Rounds – Algebra I**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



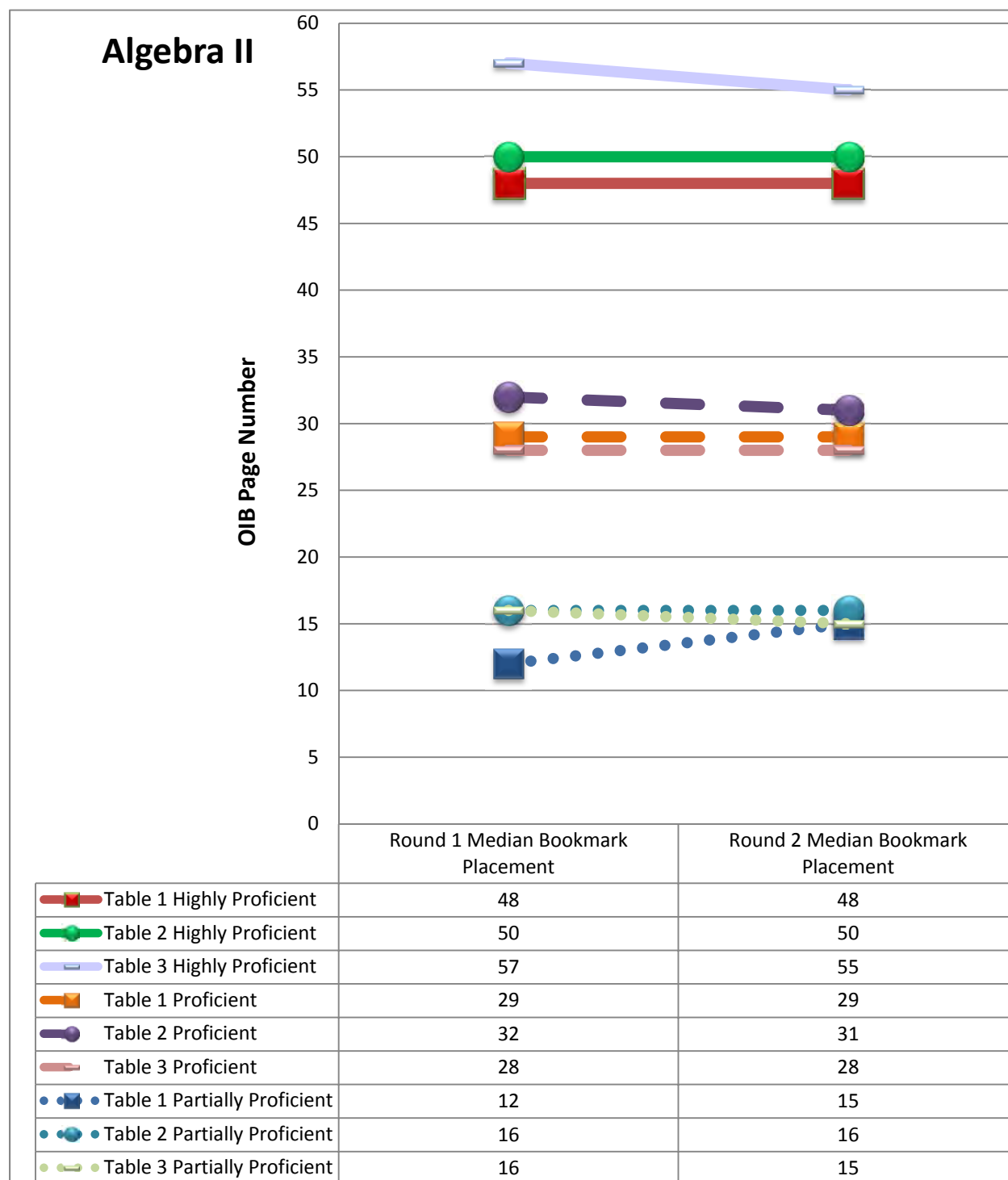
**Figure M17. Convergence of Bookmarks across Rounds – Geometry**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



**Figure M18. Convergence of Bookmarks across Rounds – Algebra II**

The figure illustrates how variability in panelists' bookmark decisions changed from the first to the second round and displays the median bookmark for each table, from Round 1 of bookmark placement to Round 2 of bookmark placement.



## **Appendix N – Estimated Percentage of Students at Each Performance Level for Panelist Recommended Performance Standards, Overall and by Gender and Ethnicity**

**Table N. Estimated Percentage of Students at Each Performance Level for Panelist Recommended Performance Standards, Overall and by Gender and Ethnicity**

Test	Performance Level	Overall	Female	Male	White	Black	American Indian	Asian	Hispanic	Multi-Racial	Other
Grade 3 ELA	Minimally Proficient	44	40	48	28	57	68	22	55	35	56
	Partially Proficient	15	15	14	14	15	14	12	15	14	14
	Proficient	31	33	29	40	24	16	43	25	37	24
	Highly Proficient	10	12	9	18	4	2	23	5	14	5
Grade 4 ELA	Minimally Proficient	43	38	47	28	52	69	19	53	34	56
	Partially Proficient	19	19	18	19	19	16	15	19	20	17
	Proficient	33	36	31	45	27	15	47	26	39	23
	Highly Proficient	5	6	4	9	3	1	18	2	8	3
Grade 5 ELA	Minimally Proficient	37	32	42	23	49	64	18	47	28	53
	Partially Proficient	33	34	32	33	32	26	28	34	35	28
	Proficient	27	30	24	40	18	9	46	18	35	17
	Highly Proficient	3	3	2	5	1	0	8	1	3	1
Grade 6 ELA	Minimally Proficient	39	34	45	25	49	66	19	50	31	51
	Partially Proficient	27	28	26	27	28	22	22	27	27	27
	Proficient	30	34	26	42	21	11	49	21	38	20
	Highly Proficient	4	5	3	6	2	1	11	1	4	2
Grade 7 ELA	Minimally Proficient	41	35	47	26	49	70	19	51	35	51
	Partially Proficient	26	28	25	26	27	20	21	27	29	25
	Proficient	29	32	25	41	22	9	46	20	31	22
	Highly Proficient	4	5	3	7	2	0	13	2	5	2
Grade 8 ELA	Minimally Proficient	40	35	45	27	52	65	20	49	34	45
	Partially Proficient	27	29	26	28	26	22	23	28	28	24
	Proficient	26	29	24	35	19	11	41	20	30	24
	Highly Proficient	6	8	5	10	3	1	16	3	8	7

Test	Performance Level	Overall	Female	Male	White	Black	American Indian	Asian	Hispanic	Multi-Racial	Other
Grade 9 ELA	Minimally Proficient	47	41	52	33	56	70	23	56	39	67
	Partially Proficient	26	28	25	28	25	22	20	26	26	18
	Proficient	21	25	18	30	16	8	36	15	27	12
	Highly Proficient	6	7	4	9	3	1	20	2	8	3
Grade 10 ELA	Minimally Proficient	49	44	54	36	61	73	25	59	42	62
	Partially Proficient	21	22	19	22	19	16	19	20	22	18
	Proficient	22	25	20	30	16	9	33	17	25	15
	Highly Proficient	8	10	6	13	3	1	24	4	11	6
Grade 11 ELA	Minimally Proficient	54	50	58	41	66	78	30	64	47	52
	Partially Proficient	20	21	19	22	18	15	19	19	21	17
	Proficient	17	19	16	23	13	7	25	13	21	19
	Highly Proficient	8	10	7	13	4	1	25	4	11	12
Grade 3 Math	Minimally Proficient	27	27	28	17	39	44	8	34	22	41
	Partially Proficient	31	33	30	28	33	35	20	34	30	32
	Proficient	27	27	27	33	21	17	33	23	30	19
	Highly Proficient	15	14	15	22	7	4	39	9	19	9
Grade 4 Math	Minimally Proficient	29	29	30	17	41	51	10	38	22	45
	Partially Proficient	29	30	28	26	32	30	18	32	30	29
	Proficient	32	32	32	41	23	17	43	26	35	22
	Highly Proficient	10	9	11	16	4	2	30	5	12	4
Grade 5 Math	Minimally Proficient	29	27	30	17	42	47	11	36	23	30
	Partially Proficient	31	32	30	28	33	33	19	34	31	32
	Proficient	27	29	26	35	20	16	32	23	31	25
	Highly Proficient	13	12	14	21	5	3	37	7	15	12
Grade 6 Math	Minimally Proficient	38	36	40	25	52	59	14	47	32	53
	Partially Proficient	30	31	28	30	29	27	22	31	33	28
	Proficient	21	23	20	28	14	12	30	17	23	13
	Highly Proficient	11	11	11	17	5	3	34	5	12	6

Test	Performance Level	Overall	Female	Male	White	Black	American Indian	Asian	Hispanic	Multi-Racial	Other
Grade 7 Math	Minimally Proficient	48	48	48	32	65	72	20	59	45	62
	Partially Proficient	22	23	21	24	19	16	18	22	23	19
	Proficient	18	18	18	24	11	9	24	13	19	12
	Highly Proficient	13	12	14	20	5	3	38	6	14	7
Grade 8 Math	Minimally Proficient	43	42	45	29	57	67	17	53	39	55
	Partially Proficient	24	26	23	26	24	20	18	24	26	17
	Proficient	20	21	19	26	14	10	25	16	21	14
	Highly Proficient	13	12	13	19	6	3	40	7	14	14
Algebra I	Minimally Proficient	45	42	48	32	58	66	17	53	39	69
	Partially Proficient	23	24	22	23	22	20	19	24	22	17
	Proficient	23	25	21	30	16	12	36	18	26	11
	Highly Proficient	9	9	9	15	4	2	28	5	13	2
Geometry	Minimally Proficient	47	46	48	33	61	66	22	58	41	64
	Partially Proficient	24	25	22	25	23	21	18	23	26	19
	Proficient	24	24	24	33	15	11	40	17	26	13
	Highly Proficient	6	5	7	9	2	1	21	2	7	4
Algebra II	Minimally Proficient	47	45	48	35	61	70	18	57	42	67
	Partially Proficient	24	26	22	25	21	19	21	24	24	17
	Proficient	23	23	22	30	15	9	38	17	24	13
	Highly Proficient	6	6	7	10	2	1	22	2	9	3

## **Appendix O – Summary of Panelist Evaluations**



**Document O. Summary of Panelist Evaluations**

1. At the end of the workshop,

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a.	I understood the purpose of this standard setting workshop.	1	0	6	73
b.	The procedures used to recommend performance standards were fair and unbiased.	1	0	24	54
c.	The training provided me with the information I needed to recommend performance standards.	1	0	9	69
d.	Taking the online assessment helped me to better understand what students need to know and be able to do to answer each item.	1	1	14	64
e.	The Performance Level Descriptors (description of what students within each performance level are expected to know and be able to do) provided a clear picture of expectations for student achievement at each level.	1	3	42	33
f.	I was able to develop an understanding of the knowledge and skills demonstrated by students who are “just barely” described by the Performance Level Descriptors.	1	0	41	38
g.	I understood how to review each page in the Ordered Item Book (OIB) to determine what students must know and be able to do to answer each item correctly.	1	0	11	68
h.	I was able to interpret having a two-thirds likelihood of answering an item correctly as indicating mastery.	1	0	29	50
i.	I understood how to place my bookmarks.	1	0	10	69
j.	I found the benchmark data and discussions helpful in my decisions about where to place my bookmarks.	1	1	7	71
k.	I found the panelist agreement data (room medians and individual bookmark placements) and discussion helpful in my decisions about where to place my bookmarks.	1	0	12	67
l.	I found the impact data (percentage of students that would achieve at the level indicated by the OIB page) and discussions helpful in my decisions about where to place my bookmarks.	1	0	23	56

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
m.	I felt comfortable expressing my opinions throughout the workshop.	1	0	7	72
n.	Everyone was given the opportunity to express his or her opinions throughout the workshop.	1	0	7	72

2. Please rate the clarity of the following components of the workshop.

		<b>Very Unclear</b>	<b>Somewhat Unclear</b>	<b>Somewhat Clear</b>	<b>Very Clear</b>
a.	Instructions provided by the Workshop Leader	0	0	8	71
b.	Performance Level Descriptors (PLDs)	0	3	18	59
c.	Ordered Item Booklet (OIB)	0	0	3	77
d.	Panelist agreement data	0	0	5	75
e.	Impact data (percentage of students that would achieve at the level indicated by the OIB page)	0	0	6	74

3. How important was each of the following factors in your placement of the bookmarks?

		<b>Not Important</b>	<b>Somewhat Important</b>	<b>Very Important</b>
a.	Performance Level Descriptors (PLDs)	0	17	63
b.	Your perception of the difficulty of the items	0	17	61
c.	Your experiences with students	0	16	64
d.	Discussions with other panelists	0	12	68
e.	External benchmark data	1	46	33
f.	Room agreement data (room medians and individual bookmark placements)	2	42	36
g.	Impact data (percentage of students that would achieve at the level indicated by the OIB page)	2	27	51
h.	Interpolated page numbers provided for adjacent grades	3	41	36

4. How appropriate was the amount of time you were given to complete the following components of the standard setting process?

		<b>Too Little</b>	<b>About Right</b>	<b>Too Much</b>
a.	Large group orientation	0	65	14
b.	Experiencing the online assessment	7	64	9
c.	Review of the Performance Level Descriptors	1	68	11
d.	Discussion of skills demonstrated by students who are “just barely” described by each PLD	4	59	17
e.	Review of the Ordered Item Booklet (OIB)	1	60	19
f.	Placement of your bookmarks in each round	0	46	34
g.	Round 1 discussion	1	71	8

5. Please read the following statement carefully and indicate your response.

		Strongly Disagree	Disagree	Agree	Strongly Agree
a.	I am confident that students classified as <b>Proficient</b> demonstrate a fundamental understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 3)	1	0	35	44
b.	I am confident that students classified as <b>Partially Proficient</b> demonstrate a partial understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 2)	1	0	34	45
c.	I am confident that students classified as <b>Highly Proficient</b> demonstrate an advanced understanding of and ability to apply the content knowledge and skills needed to be on track towards Arizona's College and Career Readiness Standards (ACCRS) in Mathematics and English Language Arts Standards. (Level 4)	1	0	30	49

## **Appendix P – Independent Observer Report to State Board of Education**

**Document P. Independent Observer Report to State Board of Education**

TO: State Board of Education

FROM: John Wilson, Tempe Elementary Schools  
Joe O'Reilly, Mesa Schools  
Jay Midyett, Amphitheatre Schools

RE: Standard Setting Observations

As representatives to the state's assessment Technical Advisory Committee, we were invited to observe the AzMERIT standard setting. The three of us observed throughout the process. At least one of us observed each group, with most groups being visited by multiple observers. The first two days were observed by all three of us, and one or two observers were there for the last two days.

**THE STANDARD SETTING PROCESS**

There were eight groups of approximately 12 teachers each that set the standards. Each group was divided into three tables and worked individually, as a table and as a whole group as they went through the process. Elementary groups (grades 4, 6, 8) set the cut points for their grade and an interpolated grade just below (3, 5, 7). High school groups set the cut points for all math (Algebra II, Geometry, Algebra I) or ELA (Grades 9-11) using a similar process with ninth grade being interpolated.

Aside from a few handouts, the materials necessary for standard setting were all delivered on computers which made the process easier and allowed sharing of table and group results quicker and clearer. Participants appeared to find the system easy to use and intuitive.

Teachers started with a large group introductory training. It was emphasized that they were to make decisions based on the Performance Level Descriptors and their professional judgment. The State Board goals for the assessment were also shared with them.

Teachers then broke into groups and took the same assessment the students took. They then reviewed the PLDs and developed 'just barely' PLDs or descriptions of a student who was just barely proficient would know and can do.

Teachers then familiarized themselves with the online ordered item booklet (OIB). The OIB had a page for each question which showed the question and response options as well as the correct answer. The items consisted of the actual test items and other field test items to give a full progression of the item difficulties. To help with context for the difficulty/complexity of each item, the comparable cut points for other tests (AIMS, Smarter Balance, NAEP, ACT College and Career Ready Index, and/or PISA depending on grade) were provided.

Next, AIR used the bookmark method to have groups identify cut points. Teachers determined the item at which a just barely proficient (or barely partially proficient or highly proficient) student would get an item right, but a student in the level below would not be likely to get it right. Teachers then got to see how the other tables and each participant placed their bookmarks and they then discussed the bookmarks. They were told the “expectation is converging judgements, not necessarily consensus,” so there was no requirement that one had to agree with the group.

In Round 2 the teachers again placed their bookmarks. Before starting they saw ‘impact data’ or what percent of 2015 students who took the test would fall in each category based on the round one cut scores. They were then asked to set their bookmarks a second time.

During lunch on the second day Superintendent Douglas spoke briefly to the group thanking them for taking time from their summer vacation and she told them they were doing important work for all of Arizona. Her words sent a message to the participants about how crucial their task was and how important their professional judgement was to the success of the standard setting.

At the end of the process participants gathered in a large room and were able to see where every grade/subject placed their cut points and the impact data. At that point, vertical moderation was scheduled, but it was not needed except for one high school group that set the tenth grade standard slightly higher than grade eleven, and they discussed lowering tenth grade by one item, which was more for appearance than a substantive change.

The process was repeated for interpolated grades. Each group was provided a cut point for their grade that was predicted using a psychometric (statistical) analysis. The task for these grades was to adjust, as needed, the predicted cut point so that it reflected the “just barely” threshold based on content. Again, the decision was guided by the psychometric prediction but determined by professional judgement and thinking about the ‘just barely’ student.

## **OBSERVATIONS**

The process was clear, well organized and logical. Teachers were trained to make decisions based on the Performance Level Descriptors and the content students are supposed to know. They were also guided by the Board’s goals of having tests that can be compared to other assessments and that reflect college and career readiness.

The teachers drove the decisions, and it appeared they relied heavily on the PLDs and the Board’s goals. Teachers were given a lot of space to discuss and make their own choices. They were not told that the cut scores have to be at cut points for other tests but they were there for context. In the training they were told “Your decision should be based on your professional opinion. The related tests are to give you a context for your choice.” When given impact scores they were told they “really need to make decisions based on content, not based on these [impact] scores.”

Teachers took their training to heart. We heard them say things to each other like “I want to make sure we are setting it at college and career ready, not too low, not where a student is not really college and career ready.” They also discussed why the results turned out as they did and said things like “we are setting this for what we want students to be able to do, not what they can do now,” “that [item’s results] is a teacher issue and where the teacher is on the new standards,” and “that should be an easy item if it was taught properly.”

Teachers had very spirited discussions about items, what a “just barely” student was and what students should know and be able to do and why. They talked about increased cognitive demand and additional complexity or depth separating levels. These were teachers who had clearly taught these subjects and could articulate gradients of performance.

In only one instance did we see a case where they were very disparate ratings (e.g., individual cuts set from item 30 to item 47). In Geometry the teachers would see an item that only a proficient student would get right followed by some easier items followed by a hard item, and that pattern would repeat until the subsequent items would only be answered by proficient students. Once it was clarified that the cut point should not be set at the first question only a proficient student would get right, but at the point at which items would consistently be those only a proficient student would get right, the ratings became more consistent and teachers were in agreement.

## **CONCLUSIONS**

We observed a very well organized, professionally run standard setting process. It was a very good standard setting that left us, and the teachers we talked to, with a feeling of accomplishment.

The cut points were set based on teacher judgment, and the final decision was theirs. The directions and training made that clear to teachers. The teachers took the State Board’s goals to heart as their target outcome and the cut points reflect that.

AIR and ADE should be commended for their hard work and professionalism that led to a productive and successful standard setting. The teachers are also to be commended for their hard work, their deep and nuanced knowledge of student performance at their grade levels, their open discussions, and their engagement throughout the process.



## **Appendix Q – State Board of Education Review and Adoption of Standards**



## Arizona State Board of Education

**NOTICE OF PUBLIC MEETING**  
**REVISED AMENDED AGENDA**

Pursuant to Arizona Revised Statutes (A.R.S.) 38-431.02, notice is hereby given to the members of the Arizona State Board of Education and to the general public that the Boards will hold a special meeting, open to the public, on **Friday, August 14, 2015, at 9:00 AM at the Arizona Department of Education, Room 122**, 1535 W. Jefferson, Phoenix, AZ 85007. A copy of the agenda for the meeting is attached. The Board reserves the right to change the order of items on the agenda, with the exception of public hearings. One or more members of the Board may participate telephonically. Agenda materials can be reviewed online at <http://azsbe.az.gov>.

Pursuant to A.R.S. §38-431.02 (H), the Board may discuss and take action concerning any matter listed on the agenda.

Pursuant to A.R.S. § 38-431.03(A)(3) and (4), the Board may vote to convene in executive session for discussion or consultation for legal advice from the Board's attorneys concerning any items on this agenda and/or for discussion or consultation with the Board's attorneys in order to consider its position and instruct its attorneys in pending or contemplated litigation or in settlement discussions conducted in order to avoid or resolve litigation.

Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting the State Board Office at (602) 542-5057. Requests should be made as early as possible to allow time to arrange the accommodation.

DATED AND POSTED this 12<sup>th</sup> day of August, 2015.

Arizona State Board of Education

By:   
Christine Thompson  
Executive Director  
(602) 542-5057

Friday, August 14, 2015  
9:00 AM

Arizona Department of Education, Room 122  
1535 W. Jefferson, Phoenix, AZ 85007

SPECIAL MEETING **REVISED** **AMENDED AGENDA**

## ARIZONA STATE BOARD OF EDUCATION

August 14, 2015

Page 2

9:00 a.m. CALL TO ORDER, PLEDGE OF ALLEGIANCE, MOMENT OF SILENCE, AND ROLL CALL

1. Presentation, discussion and possible action to adopt proposed AzMERIT performance levels (cut scores).
2. Presentation, discussion and possible action to adopt a “Move on When Reading” cut score for AzMERIT Grade 3, English Language Arts (ELA)
3. Presentation and discussion regarding proposed performance levels (cut scores) for the National Center and State Collaborative Alternate Assessment (NCSC).
- ~~4. Presentation and discussion regarding the administration of the Move On When Reading Program~~
5. Presentation, discussion and possible action regarding filling Board staff vacancies in the positions of Deputy Director and Administrative Assistant for the Investigative Unit, including consideration of the Superintendent’s recommendation and those of other Board members. Pursuant to A.R.S. § 38-431.03(A)(3), the Board may vote to convene in executive session, which will not be open to the public, for discussion or consultation for legal advice with the Board’s attorneys.
- ~~6. Presentation, discussion and possible action regarding the execution of the May 18, 2015 Board policy requiring the Superintendent to grant the employees of the State Board Investigation Unit access to necessary documents, records and electronic information. Pursuant to A.R.S. 38-431.03(A)(3) and (4), the Board may vote to convene in executive session for discussion or consultation for legal advice with the Board’s attorneys.~~
7. Presentation, discussion and possible consideration regarding Douglas v. State Board of Education (CV2015-006171). Pursuant to A.R.S. § 38-431.03(A)(3) and (4), the Board may vote to convene in executive session, which will not be open to the public, for discussion or consultation for legal advice with the Board’s attorneys and/or for discussion or consultation with the Board’s attorneys in order to consider its position and instruct its attorneys in pending or contemplated litigation or in settlement discussions conducted in order to avoid or resolve litigation.

## SPECIAL MEETING REVISED AMENDED AGENDA

## ARIZONA STATE BOARD OF EDUCATION

August 14, 2015

Page 3

8. CALL TO THE PUBLIC. This is the time for the public to comment. Members of the Board may not discuss items that are not specifically identified on the agenda. Therefore, pursuant to A.R.S. 38-431.01(H), action taken as a result of public comment will be limited to directing staff to study the matter, responding to any criticism or scheduling the matter for further consideration and decision at a later date

ADJOURN

**EXECUTIVE SUMMARY**

**Issue:** Presentation, discussion and possible action to adopt AzMERIT performance standards (cut scores)

☒ Action/Discussion Item

☐ Information Item

## Background and Discussion

On November 3, 2014, the Board adopted AzMERIT as the statewide assessment to measure the Arizona English Language Arts and Mathematics standards.

The March 2014 Board adopted values for the state's new assessment guided the AzMERIT Standard Setting Workshop held July 13-17, 2015 in Phoenix, Arizona. The adopted values included expectations related to the transparency, validity, and inclusion of Arizona stakeholders in the processes associated with AzMERIT. Specifically, the values included test results that

- measure a student's mastery of the Arizona standards and progress towards college and career readiness,
- provide valid, reliable and timely data to educators and policy makers to advance the academic success of Arizona students and inform the State's accountability measures,
- communicate results to students, parents, and educators, in a clear and timely manner to guide instruction,
- provide an accurate perspective of the quality of learning occurring within classrooms and schools, and
- allow meaningful national or multistate comparisons of school and student achievement.

In February 2015, Arizona's Technical Advisory Council (TAC), comprised of nationally recognized assessment experts, reviewed all of the planned standard setting processes and planned studies necessary for the establishment of the AzMERIT vertical scale and for the determination of mode (paper-based, computer-based) comparability. All recommendations from the TAC were incorporated in the final standard setting procedures and plans for supporting studies. On July 22, 2015, the TAC met again to review the results of the completed standard setting process and related studies. The TAC endorsed the standard setting process and the findings and conclusions of the studies.

Eighty-one Arizona educators participated in the AzMERIT Standard Setting Workshop. These educators were divided into eight panels representing four grade bands (3-4, 5-6, 7-8, and 9-11) for each subject (ELA and math). Using the Bookmark method, these panelists recommended performance standards (cut scores) for AzMERIT that measure student progress toward college and career readiness and allow for meaningful national

### Contact Information:

Irene Hunting, Deputy Associate Superintendent

Leila Williams, Associate Superintendent

**EXECUTIVE SUMMARY**

and multistate comparisons of school and student achievement. The recommended AzMERIT performance standards are generally comparable to performance standards for NAEP and Smarter Balanced. For AzMERIT ELA 11 and AzMERIT Algebra II, the recommended performance standards indicate a college readiness at least as rigorous as ACT's college readiness.

A complete description of the standard setting process is included in the attached report, "Recommending AzMERIT Performance Standards ELA Grades 3-11, Math Grades 3-8, Algebra I, Geometry, and Algebra II."

ADE recommends that the Board adopt these scale score ranges which reflect the performance standards recommended by the AzMERIT Standard Setting panelists.

<b>AzMERIT ELA Scale Score Ranges</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	2395-2496	2497-2508	2509-2540	2541-2605
<b>Grade 4</b>	2400-2509	2510-2522	2523-2558	2559-2610
<b>Grade 5</b>	2419-2519	2520-2542	2543-2577	2578-2629
<b>Grade 6</b>	2431-2531	2532-2552	2553-2596	2597-2641
<b>Grade 7</b>	2438-2542	2543-2560	2561-2599	2600-2648
<b>Grade 8</b>	2448-2550	2551-2571	2572-2603	2604-2658
<b>Grade 9</b>	2454-2554	2555-2576	2577-2605	2606-2664
<b>Grade 10</b>	2458-2566	2567-2580	2581-2605	2606-2668
<b>Grade 11</b>	2465-2568	2569-2584	2585-2607	2608-2675

<b>AzMERIT Math Scale Score Ranges</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	3395-3494	3495-3530	3531-3572	3573-3605
<b>Grade 4</b>	3435-3529	3530-3561	3562-3605	3606-3645
<b>Grade 5</b>	3478-3562	3563-3594	3595-3634	3635-3688
<b>Grade 6</b>	3512-3601	3602-3628	3629-3662	3663-3722
<b>Grade 7</b>	3529-3628	3629-3651	3652-3679	3680-3739
<b>Grade 8</b>	3566-3649	3650-3672	3673-3704	3705-3776
<b>Algebra I</b>	3577-3660	3661-3680	3681-3719	3720-3787
<b>Geometry</b>	3609-3672	3673-3696	3697-3742	3743-3819
<b>Algebra II</b>	3629-3689	3690-3710	3711-3750	3751-3839

The adoption of these scale score ranges will result in the following estimated performance on the Spring 2015 AzMERIT assessments.

**EXECUTIVE SUMMARY**

<b>AzMERIT ELA est. % of students for Spring 2015</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	44%	15%	31%	10%
<b>Grade 4</b>	43%	19%	33%	5%
<b>Grade 5</b>	37%	33%	27%	3%
<b>Grade 6</b>	39%	27%	30%	4%
<b>Grade 7</b>	41%	26%	29%	4%
<b>Grade 8</b>	40%	27%	26%	6%
<b>Grade 9</b>	47%	26%	21%	6%
<b>Grade 10</b>	49%	21%	22%	8%
<b>Grade 11</b>	54%	20%	17%	8%

<b>AzMERIT Math est. % of students for Spring 2015</b>	<b>Minimally Proficient</b>	<b>Partially Proficient</b>	<b>Proficient</b>	<b>Highly Proficient</b>
<b>Grade 3</b>	27%	31%	27%	15%
<b>Grade 4</b>	29%	29%	32%	10%
<b>Grade 5</b>	29%	31%	27%	13%
<b>Grade 6</b>	38%	30%	21%	11%
<b>Grade 7</b>	48%	22%	18%	13%
<b>Grade 8</b>	43%	24%	20%	13%
<b>Algebra I</b>	45%	23%	23%	9%
<b>Geometry</b>	47%	24%	24%	6%
<b>Algebra II</b>	47%	24%	23%	6%

**Recommendation to the Board**

It is recommended that the Board adopt the performance standards for AzMERIT as proposed by the ADE in these materials.

**ARIZONA STATE BOARD OF EDUCATION**  
**Special Board Meeting, August 14, 2015**  
**1535 W. Jefferson, Conf Room 122, Phoenix, Arizona 85007**  
**SUMMARY OF BOARD ACTION**

<b>MEMBERS PRESENT:</b> Mr. Schmidt Mr. Ballantyne Superintendent Douglas Dr. Rottweiler Mr. Carter Mr. Jacks President Miller Mr. Taylor	<b>MEMBERS ABSENT:</b> Dr. Crow Mr. Deschene Ms. Hamilton
<b>CALL TO ORDER, PLEDGE OF ALLEGIANCE, MOMENT OF SILENCE, AND ROLL CALL</b>	Meeting called to order at 9:00 am Pledge of Allegiance, Moment of Silence and Roll Call confirmed a quorum
<b>Call to Public</b>	Recorded comments are available: (Part 1/06:15) <ul style="list-style-type: none"> <li>Kelly Murphy, Dir of Early Childhood Policy, Childrens Action Alliance spoke about the Move On When Reading program</li> </ul>
<b>Item 1 - Presentation, discussion and possible action to adopt proposed AzMERIT performance levels.</b>	Recorded comments are available: (Part 1/07:50)  Presentation of proposed performance levels on AzMERIT was given by Dr. Leila Williams, Associate Superintendent for High Quality Assessments and Adult Education, Arizona Department of Education and Irene Hunting, Deputy Associate Superintendent for Assessment, Arizona Department of Education and staff from the American Institute of Resear (AIR).  <hr/> Recorded comments are available: (Part 1/46:45)  <b>Call to the Public:</b> <ul style="list-style-type: none"> <li>Joe O’Rielly, Executive Director of Mesa Schools</li> <li>Becky Hill, Arizona State Chamber</li> <li>Gina Bahlman, Mayer Unified School District, K-12 Instructional Coach</li> </ul>



	<ul style="list-style-type: none"> <li>• Anna-Lisa Kersch, Arizona School for the Arts, 7<sup>th</sup> grade teacher sat on the committee for setting the standard cut scores.</li> <li>• Ilde Lasko Kerr, Arizona Charter Association</li> <li>• Patricia Tate, Superintendent, Osborn School District thanked the Board</li> <li>• Mike Huckins, VP of Public Affairs, Greater Phoenix Chamber of Commerce</li> <li>• Erin Hart, COO, Expect More Arizona</li> <li>• Arlynn Grodinez, Director of Curriculum and Programming, Superior Unified School District</li> <li>• Jennifer Reynolds, Arizonans Against Common Core</li> <li>• Lisa Hoberg, Vice President Legislation, Scottsdale Parent Council</li> <li>• Joe Thomas, Vice President, Arizona Education Association</li> <li>• Rebecca Gau, Stand for Children Arizona, Executive Director</li> <li>• Janice Palmer, Arizona School Boards Association, Director of Governmental Relations</li> <li>• Joe Geusic, Arizona resident</li> </ul> <hr/> <p style="text-align: center;"><b>MOTION (Part 1/28:15)</b></p> <p><b><i>A motion was made by Vice President Ballantyne to adopt the proposed performance levels on AzMERIT. The motion was seconded by Superintendent Douglas.</i></b></p> <p>Roll call vote was taken:  Mr. Schmidt - Yes  Mr. Ballantyne - Yes  Superintendent Douglas - Yes  Dr. Rottweiler - Yes  Mr. Carter - Yes  Mr. Jacks - Yes  President Miller - Yes  Mr. Taylor - Yes</p> <p>The motion passed unanimously. (Part 1/01:40:00)</p>
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<p><b>Item 2. Presentation, discussion and possible action to adopt a “Move on When Reading” cut score for AzMERIT Grade 3, English Language Arts (ELA)</b></p>	<p>Recorded comments are available. (Part 1/01:41.35)</p> <p>This item was presented by Dr. Leila Williams, Associate Superintendent for High Quality Assessments and Adult Education, Arizona Department of Education and Irene Hunting, Deputy Associate Superintendent for Assessment, Arizona Department of Education and staff from the American Institute of Resear (AIR).</p> <p style="text-align: center;"><b>MOTION – (Part 2:05:02 )</b></p> <p><b><i>A motion was made by Dr. Rottweiler to adopt the proposed AzMERIT 3<sup>rd</sup> grade ELA score that demonstrates a student’s reading falls far below the third grade level for purposes of promotion, as required in ARS §15-701. The motion was seconded by Mr. Carter.</i></b></p> <hr/> <p>Recorded comments are available: (Part 1/ 02:05)</p> <p><b>Call to the Public:</b></p> <ul style="list-style-type: none"> <li>• Ilde Lasko-Kerr, AZ Charters Association, VP of Academics</li> </ul> <hr/> <p>Recorded comments are available: (Part 1/ 02:11:25 )</p> <p><b><i>Dr. Rottweiler withdrew his motion and Mr. Carter withdrew his second of that motion. Member Carter made a motion to table this item until the next Board meeting on Monday, Aug. 24<sup>th</sup>. Member Ballantyne seconded the motion.</i></b></p> <p><b><i>The motion passed 7 – 1. Superintendent Douglas opposed.</i></b></p>

<p><b>Item - 3. Presentation and discussion regarding proposed performance levels (cut scores) for the National Center and State Collaborative Alternate Assessment (NCSC).</b></p>	<p>Recorded comments are available. (Part 1/02:18)</p> <p>This item was presented by Dr. Leila Williams and Audra Ahumada, Director of Alternate Assessment.</p> <p>Ms. Ahumada provided a powerpoint presentation along with confidential cut score information.</p> <p><b><i>Presentation Only. No action required.</i></b></p>
<p><b>Item – 5. Presentation, discussion and possible action regarding filling Board staff vacancies in the positions of Deputy Director and Administrative Assistant for the Investigative Unit, including consideration of the Superintendent’s recommendation and those of other Board members.</b></p>	<p>Recorded comments are available.(Part 02:36:16)</p> <p>Item 5 is concerning filling vacancies on Board staff. Mary O’Grady, Board Counsel, presented this item and was available for questions.</p> <p><b>MOTION (Part 1/02:39:25)</b></p> <p><b><i>Member Ballantyne made the following motion:</i></b></p> <p><b><i>Having considered both the Superintendent’s recommendation not to fill the vacancies on Board staff, as outlined in her letter of 7/15/15 and also the current legal interpretation of the Board’s authority to hire and fire its employees, I move that Christine Thompson, the Board’s Executive Director, take all steps necessary to fill the positions of Administrative Assistant to the Board’s Investigation Unit and Deputy Executive Director.</i></b></p> <p><b><i>I do not believe this motion is necessary in light of the Executive Director’s job description, but I am making this motion so there is absolute clarity regarding the scope of Ms. Thompson’s authority as the Executive Director of the State Board of Education. Member Jacks seconded the motion.</i></b></p> <p><b><i>The motion passed 7-1. Superintendent Douglas opposed.</i></b></p>
<p><b>Item - 7. Presentation, discussion and possible consideration regarding Douglas v. State Board of Education (CV2015-006171).</b></p>	<p>Recorded comments are available. (Part 1/02:42:08)</p>

	<p>Mary O’Grady gave a public update to the Board regarding the status of this case.</p> <p><b>MOTION</b> (Part 1/02:44:25)</p> <p><b><i>Member Schmidt made a motion for the Board to move into executive session for legal advise or to consider its position and instruct its attorneys concerning pending litigation or contemplated litigation and/or settlement discussions. Member Carter seconded the motion.</i></b></p> <p><b><i>The Motioned Passed 7-1. Superintendent Douglas opposed the motion and stated she would not participate in the executive session.</i></b></p> <p><b><i>Board convened into Executive Session.</i></b></p> <hr/> <p>Recorded comments are available.(Part 2/00:10)</p> <p><b><i>Board reconvened into Regular Session.</i></b></p> <p><b>MOTION</b></p> <p><b><i>President Miller moved to advise the Board’s attorney to continue as directed in Executive Session. Vice President Ballantyne seconded the motion. The motion passed unanimously.</i></b></p>
<b>ADJOURN</b>	<b>Meeting adjourned</b> (Part 2/00:26)