



# FINAL REPORT

## Alignment Analysis of the 2017 Arizona Statewide Achievement Assessment for English Language Arts and Mathematics (AzMERIT) and 2016 Arizona Grade Level Standards

Grades 3-11

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**WebbAlign™**

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## Executive Summary

A 2-day alignment institute for mathematics assessments was held from September 20-21, 2017 and a 3-day alignment institute for ELA assessments was held from September 20-22, 2017 to analyze the agreement between the 2017 Arizona Statewide Achievement Assessment for English Language Arts and Mathematics (AzMERIT) and corresponding grade level Standards (2016) for grades 3-11. For ELA, both paper and online versions of forms were analyzed for each grade because the two forms were not identical. For mathematics, only the paper form was analyzed for each grade because the online form was identical to the paper form.

Two groups of reviewers participated in the analysis for each subject area. Each group consisted of three to six reviewers from Arizona and three external reviewers. For each subject area, one group analyzed grades 3-7 assessments and the other group analyzed grades 7-11 test forms. For mathematics, the grade 9-11 tests are the Algebra I End-of-Course (EOC), Geometry EOC, and Algebra II EOC tests, respectively. However, there is no requirement that these assessments be taken in these grades or in this order. For both ELA and mathematics, both grade-band groups completed the grade 7 paper test form to identify any differences in coding that were then used to inform calibration discussions to promote consistency between groups. Ten of the 12 external reviewers had participated in multiple prior alignment studies and were very familiar with the process. The other two external reviewers were knowledgeable of the process and received some additional training in advance of the study. Each group included panelists with expertise in special education and with English learners. All panelists were selected because of their notable K-12 education experience and content expertise.

A summary of alignment results by subject area, grade, and test form is provided in Table 1 (p. vii). Out of the 18 ELA test forms reviewed, all but three test forms were fully or acceptably aligned. Out of the nine mathematics test forms reviewed, all but one was acceptably aligned. For each ELA assessment, there was one writing prompt. Several adjustments were necessary to interpret the coding of the writing prompts. One reason that adjustments were necessary is that the typical acceptable level for Range of Knowledge (50% of standards within a reporting category have a corresponding assessment item) was not applicable. Considering grade 8 standards as an example, only four of the ten Writing standards, even with generous interpretation, could apply to a single prompt. This is because some standards are genre-dependent, depending on if students are writing an argument (WL.1.1) or an informative/explanatory text (WL.1.2), or narrative (WL.1.3) as well as because some standards are not assessable in the AzMERIT format (e.g. WL.1.5, which involves planning, revising, and editing; WL.1.6, which centers on use of technology, and WL.1.10, which emphasizes writing “routinely”). To evaluate alignment, the single AzMERIT writing prompt was considered as a three-part item instead of a single item, maintaining the same overall total weighting, but with consideration of

standards specific to each component of the corresponding rubric. This approach parallels the way Arizona treats the item, in three parts, for calibration and scaling.

Because the writing prompt needed to be considered as a three-part item, corresponding to the three components of the corresponding rubric, and because of the standard-related constraints described above, the Range of Knowledge for the Writing reporting category ELA assessments was evaluated separately from the single-item data entry and, therefore, not considered in Table 1 on the following page. Across grades and test forms, the writing prompts were found to target appropriate standards and engage students at the appropriate level of DOK, supported by the rubric criteria. With consideration of all reporting categories, 15 out of 18 ELA test forms analyzed were considered fully or acceptably aligned. Three test forms, for Grade 10 (paper) and Grade 11 (paper and online) needed slight improvement. No test forms required major improvement. Reviewers' feedback was more positive, overall, for grades 3-6 and grade 9 assessments than for grade 7, 8, 10, and 11 assessments.

For mathematics, eight out of the nine test forms analyzed were acceptably aligned. One test form, for Geometry EOC, needed slight improvement. Although the mathematics Algebra I EOC and Algebra II EOC forms acceptably met the alignment criteria, reviewers struggled to map the Algebra I items onto the standards and were not satisfied with the match, overall. Reviewers' qualitative feedback suggests that there are some concerns related to item specificity, assessment of topics that no longer are included in the grade level standards, and other aspects of assessment quality for the Algebra I EOC. In Table 1, the number of items that would need to be revised or replaced for each test form to attain full alignment is provided in parentheses.

For ELA test forms, reviewers mapped all or nearly all items on all test forms to a specific grade-level standard, indicating that the assessments were closely matched with the standards. On just six of the 18 ELA test forms, a majority of reviewers mapped only one assessment item to a generic standard, indicating that the item did not directly target the content within any of the standards. On the mathematics test forms, a majority of reviewers coded one item on the Grade 7 test form, three Algebra I items and five Algebra II items to a generic objective, indicating that the mathematics assessments are, overall, closely mapped to the standards but that Algebra I and Algebra II test forms may have some items that are no longer relevant to the current standards. Reviewers made notes on specific items on each assessment. The reviewers' comments provide additional feedback on the assessment items.

The results produced from the institute pertain only to the issue of alignment between the AzMERIT assessable standards and assessments for ELA Grades 3-11 and Mathematics Grades 3-8, Algebra I EOC, Geometry EOC, and Algebra II EOC. Note that an alignment analysis of this nature does not serve as external

verification of the general quality of the standards or assessments. Rather, only the degree of alignment is discussed in the results.

Table 1. Summary of AzMERIT alignment study results by subject area, grade, and test form (in parentheses: number of items that would need replacement for full alignment)

ELA	Fully Aligned	Acceptably Aligned	Needs Slight Improvement	Needs Major Improvement
Grade 3 Paper		(1)		
Grade 3 Online				
Grade 4 Paper		(2)		
Grade 4 Online				
Grade 5 Paper		(4)		
Grade 5 Online		(2)		
Grade 6 Paper		(3)		
Grade 6 Online		(4)		
Grade 7 Paper		(3)		
Grade 7 Online		(1)		
Grade 8 Paper		(4)		
Grade 8 Online		(4)		
Grade 9 Paper		(2)		
Grade 9 Online		(3)		
Grade 10 Paper		(5)		
Grade 10 Online			(10)	
Grade 11 Paper			(9)	
Grade 11 Online			(7)	
Mathematics	Fully Aligned	Acceptably Aligned	Needs Slight Improvement	Needs Major Improvement
Grade 3		(2)		
Grade 4		(1)		
Grade 5		(2)		
Grade 6		(4)		
Grade 7		(2)		
Grade 8		(1)		
Algebra I EOC		(2)		
Geometry EOC			(7)	
Algebra II EOC		(1)		



Alignment Analysis of the 2017  
Arizona Statewide Achievement Assessment for English Language Arts  
and Mathematics (AzMERIT) and 2016 Arizona Grade Level Standards,  
Grades 3-11

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Introduction and Methodology

The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective standards-based education system. Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide an education system toward students learning what they are expected to know and do. As such, alignment is a quality of the relationship between expectations and assessments and not an attribute of any one of these two system components. Alignment describes the match between expectations and an assessment that can be legitimately improved by changing either student expectations or the assessments. As a relationship between two or more system components, alignment is determined by using the multiple criteria described in detail in a National Institute for Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education* (Webb, 1997). The corresponding methodology used to evaluate alignment has been refined and improved over the last 20 years, yielding a flexible, effective, and efficient approach.

A 2-day alignment institute for mathematics groups and a 3-day alignment institute for ELA groups, contracted by the Arizona State Department of Education, was held over the period of September 20 through September 22, 2017, to analyze the 2017 Arizona Statewide Achievement Assessment for English Language Arts and Mathematics (AzMERIT) and 2016 Arizona Grade Level Standards, Grades 3-11 for English Language Arts and Grades 3-8, Algebra I, Geometry, and Algebra II for Mathematics. The institute was held in Phoenix, Arizona at the Arizona State Department of Education office building.

Two groups of reviewers participated in the analysis for each subject area. Each group consisted of three to six reviewers from Arizona and three external reviewers. For each subject area, one group analyzed grades 3-7 assessments and the other group analyzed grades 7-11 test forms. Both grade-band groups completed the grade 7 paper test form to identify any differences in coding that were then used to inform calibration discussions to promote consistency between groups. Ten of the 12 external reviewers had participated in multiple prior alignment studies and were very familiar with the process. The other two external reviewers were knowledgeable of the process and received some additional training in advance of the study. Each group included panelists with expertise in



special education and with English learners. All panelists were selected because of their notable K-12 education experience and content expertise. For ELA, both paper and online versions of forms were analyzed for each grade because the two forms were not identical. For mathematics, only the paper form was analyzed for each grade/course because the online form was identical to the paper form. Because of time constraints, the upper grades math group divided into two groups of four to complete forms for Geometry EOC and Algebra II EOC. This adjustment ensured that all test forms were analyzed.

The Arizona content standards were reorganized slightly for the AzMERIT test context. This rearranged structure, which combines strands/domains, was used by ADE based on recommendations from their test vendor's psychometric team, for the purpose of structuring reporting categories that could provide meaningful psychometric data. These reporting categories are detailed within the Findings section of this document.

Reviewers were instructed to consider the full statement of expectations in order to consider if an assessment item should be mapped to a standard. For a reviewer to code an item to a standard, all or nearly all of the expected outcome as expressed in the standard had to be necessary for a student to perform to answer the item correctly. If a reviewer could not find any standard that an assessment item matched, then they were asked to code the item to a "generic" level of the most appropriate cluster, domain, or reporting category. If the item did not match any of these, then the reviewer was instructed to indicate that the item was uncodeable. No items were considered uncodable in this review.

As part of the alignment institute, reviewers were trained to better understand and, therefore, consistently apply the depth-of-knowledge (DOK) language system, contextualize its origins and purpose, and recognize common misinterpretations and misconceptions. Through a highly interactive and participatory training, panelists reviewed the definitions of the four DOK levels and worked toward a common understanding of the difference between and among each of the levels of complexity. Definitions for each DOK level for ELA and for mathematics are included within the appendices. Panelists also practiced assigning DOK to sample assessment items that were selected to foster important discussions that promote improved conceptual understanding of DOK.

Reviewers then worked to calibrate their use of DOK to evaluate the complexity of a subset of the standards, first assigning DOK individually and then participating in a consensus discussion. After completing the subset, the panelists reviewed previously assigned DOKs (completed by other expert panels using a similar process) and flagged any standards that they wanted to discuss further, that they thought needed clarification, and/or that had a DOK assigned that they thought should be considered for adjustment. Group leaders facilitated discussions for any standards that one or more panelists flagged. If the discussion resulted in a decision to change the DOK that was assigned to a

standard, then that change was made in the online data collection system, the WATv2.

Panelists then conducted individual analyses of 3-5 corresponding assessment items. Following individual analyses of the items, reviewers participated in a debriefing discussion in which they analyzed the degree to which they had coded particular items or types of content to the standards. This overall process was repeated for each grade to maintain calibration within each group of reviewers. Reviewers then completed analysis of the remaining items individually for each test form.

To derive the results from the analysis, the reviewers' responses were averaged. Any variance among reviewers was considered legitimate, with the true DOK level for the item falling somewhere between the two or more assigned values. Such variation could signify differences in interpretation of an item or of the assessed content and/or a DOK that falls in between two of the four defined levels. Reviewers adjudicated their results after completing the coding of each test form. The adjudication process included the discussion of items without a majority of reviewers in agreement. Adjudication is intended to help panelists identify and correct any errors in coding (e.g. accidentally assigning an item to the "RI" domain instead of the "RL" domain). Adjudication also helps build familiarity with the standards (e.g. a reviewer might not have noticed that a particular expectation is explicit in a particular standard) as well as build common interpretation of the standards (e.g. panelists may calibrate their understanding of the meaning of certain standards that may be interpreted in different ways due to ambiguous wording or due to differences in the way people understand the content). Overall, adjudication is intended to ensure that panelists have coded their items as they intended; reviewers were not required to change their results after the discussion.

Any large variations among reviewers in the final results represented true differences in opinion among the reviewers and were not because of coding error. These differences could be due to different standards targeting the same content knowledge or may be because an item did not explicitly correspond to any standard, but could be inferred to relate to a standard. Reviewers were allowed to identify each assessment item as corresponding to up to three standards—one primary hit (standard) and up to two secondary hits. However, reviewers could only code one DOK level to each assessment item, even if the item corresponded to more than one standard.

Reviewers were instructed to focus primarily on the alignment between the standards and AzMERIT assessment items. However, reviewers were encouraged to offer their opinions on the standards or of the assessment activities/items by writing a note about the item. Reviewers also could indicate whether there was a Source-of-Challenge issue with an item—i.e., a technical problem with the item that might cause the student who knows the material to

give a wrong answer or enable someone who does not have the knowledge being tested to answer the item correctly.

The results produced from the institute pertain only to the issue of alignment between the AzMERIT assessable standards and AzMERIT assessments for ELA and mathematics. Note that an alignment analysis of this nature does not serve as external verification of the general quality of the standards or assessments. Rather, only the degree of alignment is discussed in the results. For these results, the means of the reviewers' coding were used to determine whether the alignment criteria were met. Standard deviations are reported in the tables provided in Appendix C, which give one indication of the variance among reviewers.

### Alignment Criteria Used for This Analysis

This report describes the results of a 2017 alignment study of the 2016 Arizona standards and 2017 AzMERIT assessments for ELA grades 3-11 and mathematics grades 3-8, Algebra I EOC, Geometry EOC, and Algebra II EOC. The study addressed specific criteria related to the content agreement between the standards and assessments. Four criteria received major attention: Categorical Concurrence, Depth-of-Knowledge Consistency, Range-of-Knowledge Correspondence, and Balance of Representation.

This analysis judged the alignment between the reporting categories and the assessments on the basis of four criteria. Information is also reported on the quality of items by identifying items with Source-of-Challenge and other issues. For each alignment criterion, an acceptable level was defined by what would be required to assure that a student had reasonably met the expectations within the reporting categories for each discipline.

In the descriptions below, the words “domain” and “reporting category” are used to describe reporting levels. In this analysis, the reporting categories for ELA for all grades were the domains of Reading Standards for Literature (for Grades 3-5 this also included Foundational Standards for Reading); Reading, Speaking, and Listening Standards for Informational Text; and Writing and Language Standards. For mathematics, the reporting categories for grades 3-5 were the domains Operations, Algebraic Thinking, and Numbers in Base Ten, Number and Operations – Fractions, and Measurement, Data, and Geometry. For mathematics grades 6-7, the reporting categories were Ratio and Proportion, The Number System, Expressions and Equations, and Geometry, Statistics and Probability. For mathematics grade 8, the reporting categories were Expressions and Equations, Functions, Geometry, and Statistics, Probability, and the Number System. For Algebra I EOC, the reporting categories were Algebra, Functions, and Statistics and Quantitative Reasoning. For Geometry EOC, the reporting categories were Congruence, Similarity, Right Triangles, and Trigonometry, Circles and Geometric Measurement, and Geometric Properties with Equations.

For Algebra II EOC, the reporting categories were Algebra, Functions, and Statistics and Quantitative Reasoning. In the descriptions below, the term “standards” may be used as an umbrella term, to refer to expectations in general.

### Categorical Concurrence

An important aspect of alignment between standards and assessments is whether both address the same content categories. The Categorical-Concurrence criterion provides a very general indication of alignment if both documents incorporate the same content. The criterion of Categorical Concurrence between standard and assessments is met if the same or consistent categories of content appear in both documents. This criterion was judged by determining whether the assessment included items measuring content from each reporting category.

The analysis assumed that the assessment had to have at least six items for measuring content from a reporting category in order for a minimum acceptable level of Categorical Concurrence to exist between the domain and the assessment. The number of items, six, is based on estimating the number of items that could produce a reasonably reliable subscale for estimating students' mastery of content on that subscale. Of course, many factors have to be considered in determining what a reasonable number is, including the reliability of the subscale, the mean score, and cutoff score for determining mastery. Using a procedure developed by Subkoviak (1988) and assuming that the cutoff score is the mean and that the reliability of one item is .1, it was estimated that six items would produce an agreement coefficient of at least .63. This indicates that about 63% of the group would be consistently classified as masters or non-masters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score is increased to one standard deviation from the mean to .77 and, with a cutoff score of 1.5 standard deviations from the mean, to .88.

Usually states do not report student results by domains or require students to achieve a specified cutoff score on expectations related to a domain. If a state did do this, then the state would seek a higher agreement coefficient than .63. Six items were assumed as a minimum for an assessment measuring content knowledge related to a reporting category, and as a basis for making some decisions about students' knowledge of that content under the reporting category. If the mean for six items is 3 and one standard deviation is one item, then a cutoff score set at 4 would produce an agreement coefficient of .77. Any fewer items with a mean of one-half of the items would require a cutoff that would only allow a student to miss one item. This would be a very stringent requirement, considering a reasonable standard error of measurement on the subscale.

### Depth-of-Knowledge Consistency

Standards and assessments can be aligned not only on the category of content covered by each, but also on the basis of the complexity of knowledge required by each. Depth-of-Knowledge Consistency between standards and assessment indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards.

For consistency to exist between the assessment and the reporting categories, as judged in this analysis, at least 50% of the items corresponding to a reporting category had to be at or above the depth-of-knowledge level of the corresponding content expectation. The 50% level, a conservative minimum cutoff point, is based on the assumption that a minimal passing score for any one reporting category of 50% or higher would require the student to successfully answer at least some items at or above the depth-of-knowledge level of the content expectations within the corresponding reporting categories. For example, assume an assessment included six items related to one domain and students were required to answer correctly four of those items to be judged proficient—i.e., 67% of the items. If three (50%) of the six items were at or above the depth-of-knowledge level of the corresponding expectations, then for a student to achieve a proficient score would require the student to answer correctly at least one item at or above the depth-of-knowledge level of one expectation. If a domain had between 40% and 50% of items at or above the depth-of-knowledge levels of the expectations, then it was reported that the criterion was “weakly” met.

### Range-of-Knowledge Correspondence

For reporting categories and assessments to be aligned, the breadth of knowledge required on both should be comparable. The Range-of-Knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a standard is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment items/activities. The criterion for correspondence between span of knowledge for a reporting category and an assessment considers the number of objectives within the reporting category with one related assessment item/activity. Fifty percent of the objectives for a reporting category must have at least one related assessment item in order for the alignment on this criterion to be judged acceptable. This level is based on the assumption that students’ knowledge should be tested on content from over half of the domain of knowledge for a reporting category. This assumes that each expectation for a reporting category should be given equal weight. Depending on the balance in the distribution of items and the need to have a low number of items related to any one expectation, the requirement that assessment items need to be related to more than 50% of the expectations for a reporting category increases the likelihood that students will have to demonstrate knowledge on more than one expectation

per reporting category to achieve a minimal passing score. As with the other criteria, a state may choose to make the acceptable level on this criterion more rigorous by requiring an assessment to include items related to a greater number of the expectations. However, any restriction on the number of items included on the test will place an upper limit on the number of expectations that can be assessed.

Range-of-Knowledge correspondence is more difficult to attain if the content expectations are partitioned among a greater number of reporting categories and a large number of expectations. If 50% or more of the objectives for a reporting category had a corresponding assessment item, then the range-of-knowledge correspondence criterion was met. If between 40% and 50% of the objectives for a reporting category had a corresponding assessment item, the criterion was “weakly” met. For the AzMERIT study, the reporting categories were domains that were defined for the purpose of assessment design and from a psychometric perspective.

### Balance of Representation

In addition to comparable depth and breadth of knowledge, aligned reporting categories and assessments require that knowledge be distributed equally in both. The Range-of-Knowledge criterion only considers the number of expectations hit within a reporting category; it does not take into consideration how the hits (or assessment items/activities) are distributed among these expectations. The Balance-of-Representation criterion is used to indicate the degree to which one standard is given more emphasis on the assessment than another. An index is used to judge the distribution of assessment items. This index only considers the expectations for a reporting category that has at least one hit—i.e., one related assessment item per expectation.

The index is computed by considering the difference in the proportion of expectations and the proportion of hits assigned to the expectation. An index value of 1 signifies perfect balance and is obtained if the hits (corresponding items) related to a reporting category are equally distributed among the expectations for the given reporting category. Index values that approach 0 signify that a large proportion of the hits are on only one or two of all of the expectations hit. Depending on the number of expectations and the number of hits, a unimodal distribution (most items related to one expectation and only one item related to each of the remaining expectations) has an index value of less than .5. A bimodal distribution has an index value of around .55 or .6. Index values of .7 or higher indicate that items/activities are distributed among all of the expectations at least to some degree (e.g., nearly every expectation has at least two items) and is used as the acceptable level on this criterion. Index values between .6 and .7 indicate the Balance-of-Representation criterion has only been “weakly” met.

## Source-of-Challenge Criterion

The Source-of-Challenge criterion is only used to identify items on which the major cognitive demand is inadvertently placed and is other than the targeted reporting category or standard (i.e. construct irrelevance). Bias and sensitivity issues as well as technical issues and error could all be reasons for an item to have a source-of-challenge problem. Such item characteristics may result in some students not answering an assessment item, or answering an assessment item incorrectly, or at a lower level, even though they possess the understanding and skills being assessed.

## Cutoffs for Alignment Criteria

For overall alignment, an assessment form is reported as “fully aligned” if no items need replacement to meet the conditions for all of the criteria described above. A test form is considered “acceptably aligned” if it needs between one and five items replaced or revised in order to meet the conditions for all alignment criteria. A test form is reported to “need slight improvement” if six to ten items need to be replaced or revised to meet the criteria and is reported to “need major improvement” if more than ten items need to be replaced or revised. These categories represent typically used cutoff levels.



## Findings

### Standards

The Arizona content standards were reorganized slightly for the AzMERIT test context. This rearranged structure, which combines strands/domains, was used by ADE based on recommendations from their test vendor's psychometric team, for the purpose of structuring reporting categories that could provide meaningful psychometric data. The three reporting categories included in the study for ELA grades 3-11 were:

- Reading Standards for Literature (for Grades 3-5, this also included Foundational Standards for Reading), coded as RL;
- Reading, Speaking, and Listening Standards for Informational Text, coded as RI; and
- Writing and Language Standards, coded as WL.

For mathematics, domains were similarly combined but varied by grade based on the 2017 AzMERIT reporting categories.

#### Mathematics Grade 3-5:

- Operations, Algebraic Thinking, and Numbers in Base Ten;
- Number and Operations – Fractions; and
- Measurement, Data, and Geometry

#### Mathematics Grade 6-7

- Ratio and Proportion;
- The Number System;
- Expressions and Equations; and
- Geometry, Statistics, and Probability

#### Mathematics Grade 8:

- Expressions and Equations;
- Functions;
- Geometry; and
- Statistics, Probability, and the Number System

#### Mathematics Algebra I EOC:

- Algebra;
- Functions; and
- Statistics and Quantitative Reasoning

#### Mathematics Geometry EOC:

- Congruence;
- Similarity, Right Triangles, and Trigonometry;
- Circles and Geometric Measurement; and
- Geometric Properties with Equations

#### Mathematics Algebra II EOC:

- Algebra;
- Functions; and
- Statistics and Quantitative Reasoning



The consensus DOK value for each Arizona ELA and mathematics standards can be found in Appendices A and B, respectively. Table 2 shows the numbers and percentages of standards at each DOK level by grade and by content area. The majority of ELA standards for all grades were considered to be DOK 2 and DOK 3. The percentage of ELA standards that were considered DOK 3 expectations increased with grade level, starting from 34% DOK 3 in grade 3 and reaching 73% DOK 3 in grade 11. Thus, the ELA standards demand more holistic inferencing and robust text analysis as students progress through grades. For each grade, there were two ELA standards that reviewers considered to be DOK 4, requiring complex work over an extended period of time. These DOK 4 expectations are not appropriate for on-demand assessment and, therefore, not expected to be fully assessed on an on-demand assessment.

For mathematics, most expectations, across grades, were DOK 2. In grades 3-5, expectations were split relatively evenly between DOK 1 and DOK 2. For grade 6-Algebra II, mathematics standards included between 3% and 13% DOK 3 expectations. The overall trend in mathematics standards across grades is an increase in DOK 2 expectations and the introduction of one or more DOK 3 expectations. Thus, mathematics standards expect a greater proportion of work related to conceptual understanding of mathematics content as students advance through the grades as well as expect some work with abstract mathematical thinking starting in grade 6.

Table 2. Expectations by Depth-of-Knowledge (DOK) Levels for Arizona Standards used in the AzMERIT Alignment Analysis, September, 2017

ELA	Total Number of Expectations	DOK Level	Number of Standards by Level	Percent within Grade by Level
Grade 3	44	1 2 3 4	5 23 15 1	11 52 34 2
Grade 4	44	1 2 3 4	3 23 17 1	7 52 39 2
Grade 5	44	1 2 3 4	3 21 19 1	7 48 43 2
Grade 6	41	1 2 3 4	2 12 26 1	5 29 63 2
Grade 7	41	1 2 3 4	1 12 27 1	2 29 66 2
Grade 8	41	1 2 3 4	1 12 27 1	2 29 66 2
Grade 9	41	1 2 3 4	1 11 28 1	2 27 68 2
Grade 10	41	1 2 3 4	1 11 28 1	2 27 68 2
Grade 11	41	1 2 3 4	1 9 30 1	2 22 73 2

Table 2 **cont'd.** Expectations by Depth-of-Knowledge (DOK) Levels for Arizona Standards used in the AzMERIT Alignment Analysis, September, 2017

Mathematics	Total Number of Expectations	DOK Level	Number of Standards by Level	Percent within Grade by Level
Grade 3	27	1 2	11 16	41 59
Grade 4	29	1 2	14 15	48 52
Grade 5	27	1 2	13 14	48 52
Grade 6	29	1 2 3	11 17 1	38 59 3
Grade 7	23	1 2 3	3 17 3	13 74 13
Grade 8	30	1 2 3	6 22 2	20 73 7
Algebra I	46	1 2 3	9 33 4	20 72 9
Geometry	39	1 2 3 4	2 26 10 1	5 67 26 3
Algebra II	48	1 2 3	7 39 2	15 81 4

If no particular grade-level standard is targeted by a given assessment item, reviewers were instructed to code the item at the cluster, strand, or domain level. This coding to a “generic standard” sometimes indicates that the item is inappropriate for a particular grade level (for example, the item might better match a standard from another grade level). If the item is grade-appropriate and an matching standard was not found, then this situation may instead indicate that there is a part of the content within the standards that is being interpreted differently by different parties. These items may highlight areas in the standards that state representatives and test developers need to discuss to ensure common interpretation. These items may also be revised to ensure that they target specific on-grade standards.

Table 3, on the next page, shows the items for each assessment that a majority of reviewers coded to a generic standard. This table shows the generic standard to which the item was coded, the number of reviewers who coded the item to the generic standard, and the reason for the coding. No generic standards were used for 11 of the 18 ELA test forms reviewed. On just six of the 18 ELA test forms, a majority of reviewers mapped only one assessment item to a generic standard, indicating that the item did not directly target the content within any of the standards. No generic standards were used for six of the nine mathematics test

forms reviewed. A majority of reviewers coded one item on the Grade 7 mathematics test form, three Algebra I EOC items, and five Algebra II EOC items to a generic objective, indicating that the mathematics assessments are, overall, closely mapped to the standards but that Algebra I and Algebra II test forms may have some items that are no longer relevant to the current standards. Reviewers were required to write an explanation in the case of assigning an item to a generic standard. These notes can be found in Appendix D. Items assigned to generic standards by more than one reviewer should be reviewed. It is possible that these items are inappropriately placed on a test form for a particular grade range.

Table 3 Items Assigned to Generic Content Expectations by Assessment by a Majority of Reviewers for the AzMERIT Alignment Analysis, September 2017

ELA Grade/Form	Generic Content Expectation	Item Number (# of Reviewers)	Reason
Grade 5 Online	5RI.2.0	14(6)	Question relies on the students' ability to listen, organize, and categorize the material accurately – which are important skills, but not directly aligned to a specific speaking and listening standard.
Grade 5 Online	5RI.2.0	38(6)	No specific reason provided beyond not matching standard.
Grade 7 Paper	7RL.0.0	16(3)	Not necessary to reference text; question relates to various skills associated with reading but does not target one specific standard.
Grade 9 Online	9RL.1.0	9(7)	Reviewers noted that this item was a better match for 6 <sup>th</sup> grade 6RL1.3. One reviewer noted that the question could be modified to target 9RL.1.5.
Grade 10 Paper	10RI.1.0	20(7)	The question involves consideration of rhetorical modes and recognition of the strategy being used but does not fully address any one strategy.
Grade 10 Online	10RI.1.0	31(6)	Item relates to rhetorical modes or paradigms but does not specifically match any of the standards.
Grade 11 Paper	11RI.1.0	13(6)	Reviewers noted that the item may have been intended to target standard 1.9 but that the question doesn't address the content of the standard. Rather, the item asks about a simple connection between the texts.
Grade 11 Online	11RI.1.0	20(5)	Item relies on historical knowledge, not a literary element; does not rely on a comparison of two texts. Two reviewers noted that the item was perhaps trying to target 11RI.1.9.

Table 3 cont'd Items Assigned to Generic Content Expectations by Assessment by Majority of Reviewers for the AZMERIT Alignment Analysis, September 2017

Mathematics Grade/Form	Generic Content Expectation	Item Number (# of Reviewers)	Reason
Grade 7	7NS.0.0	47(16)	Item addresses number sense as relates to knowledge of odd/even numbers but the specific topic is not directly addressed in the standards.
Algebra I EOC	A1F.1.0	23(8)	Reviewers noted that square root functions are not included in Algebra I standards.
Algebra I EOC	A1SQ.1.0	11(9)	Item asks students to develop a histogram. Reviewers noted that histograms are not part of the Algebra 1 standards unless they are being compared to another plot type and that the item seemed address a lower grade level standard.
Algebra I EOC	A1SQ.2.0	5(9)	Item asks students to determine a probability given a table of data, a skill that is not addressed in these standards.
Algebra II EOC	A2SQ.2.0	20(3)	Item relates to judging whether or not a sample is random. Better fit for 8 <sup>th</sup> grade or Algebra I.
Algebra II EOC	A2SQ.3.0	26(3)	Testing sample space is a better fit for Algebra I; not in Algebra II standards.
Algebra II EOC	A2F.4.0	28(3)	Item relates to domain heading but not to specifics within any standard.
Algebra II EOC	A2SQ.0.0	34(3)	Item addresses topic of margin of error. Some reviewers commented that this topic has been removed from the Algebra II standards.
Algebra II EOC	A2SQ.3.0	37(3)	Item addresses simple probability and law of large numbers, which reviewers noted are topics that have been removed from Algebra II.

## Test Forms

ELA test forms were comprised of 42 items for grades 3-8, and 44 items for grades 9-11. Each ELA test form included one writing prompt with a weight of eight points. Students could be administered one of two different writing prompts. Reviewers considered both of the writing prompts, making notes of any differences in standard coverage and/or DOK. Each writing prompt was worth eight points in total. Each ELA test form also included between one and five two-point items. The remaining ELA items were one-point each.

Mathematics test forms were comprised of 52 items for grades 3-5, and 54 items for grades 6-8, Algebra I EOC, Geometry EOC, and Algebra II EOC. For mathematics test forms, all items were one point with the exception of one two-point item on the grade 4 test, two two-point items on the grade 8 test, one two-point item on the Algebra I EOC test and one two-point item on the Algebra II EOC test.

The weighting of items was considered in this analysis. All of the operational items on each assessment were included in the analysis. There were no field test items reviewed on any of the assessments and no operational items were excluded from the analysis.

## Alignment of AzMERIT Assessment Forms with Standards

The results of the analysis for each of the four alignment criteria are summarized in Tables 4.1-4.9 for each ELA test form and in Tables 5.1-5.9 for each mathematics test form. More detailed data on each of the criteria are given in Appendix C, in the first three tables for each test form. With each table, a description of the satisfaction of the alignment criteria is provided. The reviewers' debriefing comments provide further detail about the individual reviewers' impressions of the alignment.

In Tables 4.1-4.9 and 5.1-5.9, "YES" indicates that an acceptable level was attained between the assessment and the reporting category on the criterion. "WEAK" indicates that the criterion was nearly met, within a margin that could simply be due to error or reasonable variation in reviewer coding. "NO" indicates that the criterion was not met by a noticeable margin—10% under an acceptable level for Depth-of-Knowledge Consistency, 10% under an acceptable level for Range-of-Knowledge Correspondence, and .1 under an index value of .7 for Balance of Representation.

## ELA Results

Out of the 18 ELA test forms reviewed, all but three test forms were fully or acceptably aligned. These three test forms (grade 10 online, grade 11 paper and online) were found to need slight improvement. The major alignment issue for the test forms that were found to need slight improvement was DOK Consistency. DOK Consistency was unmet for grades 10 and 11 for the RL and RI reporting categories. The DOK Consistency criterion was unmet for the grade 6 RL reporting category and for the grade 8 RL and RI reporting categories although the overall alignment was considered acceptable. All other test forms met the DOK Consistency criterion. All test forms met the criterion of Categorical Concurrence for all reporting categories. For grades 3-10, one or both test forms only weakly met or did not meet (grade 4 paper, grade 5 paper) the Range of Knowledge criterion for the RI reporting category, although this was not a major alignment issue. Balance of Representation was met (or weakly met in two cases) for all grades and all reporting categories.

For each ELA assessment, there was one writing prompt. Several adjustments were necessary to interpret the coding of the writing prompts. One reason that adjustments were necessary is that the typical Range of Knowledge acceptable level was not applicable because only four of the ten Writing standards, even with generous interpretation, could apply to a single prompt. This is because some standards are genre-dependent (e.g. depending on if students are writing an opinion/argument (WL.1.1), or an informative/explanatory text (WL.1.2), or narrative (WL.1.3) as well as because some standards are not assessable in the AzMERIT format (e.g. WL.1.5, which involves planning, revising, and editing—and peer and adult guidance in lower grades; WL.1.6, which centers on use of technology—and peer and adult guidance in lower grades, and WL.1.10, which emphasizes writing “routinely”). Instead of interpreting the writing item as a single item, interpretation of the writing prompts must take into account the three components of the rubric: Purpose, Focus, and Organization, Evidence and Elaboration, and Conventions. This approach parallels the way Arizona treats the item, in three parts, for calibration and scaling. Because Range of Knowledge for the Writing reporting category was evaluated outside of the WATv2 data collection, in the results tables 4.1-4.9 for ELA, the cell corresponding to Range of Knowledge for the Writing reporting category is greyed out and contains an asterisk.

All writing prompts were considered reasonably aligned with the assessable standards within the Writing and Language Standards (WL) reporting category. Based on the three-part rubric, student responses are evaluated in relation to both Writing standards and Language standards (as well as an assessable Foundational Standard in grade 3) within the WL reporting category. Reviewers found the writing prompts to target appropriate standards at an appropriate level of complexity.

## Grade 3 ELA

The AzMERIT grade 3 paper test form was found to be acceptably aligned and the grade 3 online test form was found to be fully aligned. To be considered fully aligned, the paper test form would need just one item revised or replaced in order to target an additional standard within the reporting category of Reading Standards for Informational Text (RI). In their debriefing notes, reviewers made generally positive comments about the grade 3 test forms, for example, noting that the test seemed “cohesive” and that the test items were appropriately rigorous. One reviewer noted that the test forms included a good selection of passages but that there were no poetry or drama passages included.

Table 4.1a and 4.1b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 3 ELA Test Forms

Table 4.1a Grade 3 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
3.RL	19	74%	68%	0.8	YES	YES	YES	YES
3.RI	16	67%	47%	0.75	YES	YES	WEAK	YES
3.WL	24	70%	22%	0.68	YES	YES	*	WEAK

Table 4.1b Grade 3 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
3.RL	15	74%	71%	0.85	YES	YES	YES	YES
3.RI	20	73%	54%	0.77	YES	YES	YES	YES
3.WL	23	67%	14%	0.83	YES	YES	*	YES

\*Number of items



## Grade 4 ELA

The AzMERIT grade 4 paper test form was found to be acceptably aligned and the grade 4 online test form was found to be fully aligned. To be considered fully aligned, the paper test form would need just two items revised or replaced in order to target two additional standards within the reporting category of Reading Standards for Informational Text (RI). In the debriefing notes, one reviewer noted that the test forms included a good selection of fiction and non-fiction passages that were relevant to grade 4 students and that included topics related to multiple cultures and time periods as well as both current and historical topics. The reviewer again noted that there were no poetry or drama passages included. At least one reviewer was concerned that some items seemed not to address the full intent of the corresponding standard. Overall, however, reviewers judged the items to be reasonable matches with the standards.

Table 4.2a and 4.2b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 4 ELA Test Forms

Table 4.2a Grade 4 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC *	DOK %	Range	Balance	CC	DOK	Range	Balance
4.RL	19	82%	65%	0.81	YES	YES	YES	YES
4.RI	17	92%	40%	0.78	YES	YES	NO	YES
4.WL	31	83%	25%	0.74	YES	YES	*	YES

Table 4.2b Grade 4 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
4.RL	15	73%	64%	0.74	YES	YES	YES	YES
4.RI	22	89%	52%	0.76	YES	YES	YES	YES
4.WL	29	81%	24%	0.76	YES	YES	*	YES

\*Number of items

## Grade 5 ELA

The AzMERIT grade 5 paper test form and online test form were both found to be acceptably aligned. To be considered fully aligned, the paper test form would need four items revised or replaced to target additional standards within the reporting category of Reading Standards for Informational Text (RI). The online test form would need two items revised or replaced: one item that targeted an additional standard within the reporting category of Reading And Foundational Standards for Literature (RL) and the other item that targeted an additional standard within the reporting category of Reading Standards for Informational Text (RI).

Table 4.3a and 4.3b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 5 ELA Test Forms

Table 4.3a Grade 5 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
5.RL	18	63%	61%	0.78	YES	YES	YES	YES
5.RI	20	78%	31%	0.80	YES	YES	NO	YES
5.WL	31	89%	24%	0.76	YES	YES	*	YES

Table 4.3b Grade 5 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
5.RL	16	53%	48%	0.82	YES	YES	WEAK	YES
5.RI	20	61%	49%	0.78	YES	YES	WEAK	YES
5.WL	28	86%	23%	0.77	YES	YES	*	YES

\*Number of items

## Grade 6 ELA

The AzMERIT grade 6 paper test form and online test form were both found to be acceptably aligned. To be considered fully aligned, the paper test form would need three items revised or replaced. Two items would need to be revised or replaced to match the DOK of the corresponding standard within the RL reporting category and the other item would need to target an additional standard within the RI reporting category. The online test form would need four items revised or replaced to match the DOK of the corresponding standard within the RL reporting category. Reviewer comments were positive, overall. In the debriefing notes, one reviewer commented, “Arizona is to be commended for a writing prompt and bringing reading and writing together to produce cohesive writing. The wide variety of interesting reading materials could keep children more involved in completing the assessment.”

Table 4.4a and 4.4b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 6 ELA Test Forms

Table 4.4a Grade 6 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
6.RL	17	37%	67%	0.78	YES	NO	YES	YES
6.RI	21	52%	45%	0.80	YES	YES	WEAK	YES
6.WL	32	100%	35%	0.81	YES	YES	*	YES

Table 4.4b Grade 6 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
6.RL	15	32%	54%	0.78	YES	NO	YES	YES
6.RI	22	52%	56%	0.80	YES	YES	YES	YES
6.WL	32	100%	25%	0.78	YES	YES	*	YES

\*Number of items

## Grade 7 ELA

The AzMERIT grade 7 paper test form and online test form were both found to be acceptably aligned. The grade 7 paper test form was reviewed by both grade-band panels, and results from the two groups were averaged to produce the data shown in Table 4.5a below. To be considered fully aligned, the paper test form would need three items revised or replaced to target additional standards within the reporting category of Reading Standards for Informational Text (RI). The online test form would need one item revised or replaced to match the DOK of the corresponding standard within the RI reporting category. Reviewers made extensive comments on the grade 7 paper test forms. The extensive commentary is, in part, due to the fact that this was the first test form reviewed, and it was reviewed by both ELA grade-band groups and discussed extensively in order to check for inter-group calibration and adjudicate any differences in approach. However, the extensive commentary may also reflect actual quality issues with the test form. Reviewers referred back to the grade 7 test forms in comments on other grades, noting a preference for the items on other test forms compared with the grade 7 test forms. Alignment for grade 7 test forms, however, was still found to be acceptable.

Table 4.5a and 4.5b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 7 ELA Test Forms

Table 4.5a Grade 7 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RL	14	50%	57%	0.74	YES	YES	YES	YES
7.RI	29	63%	42%	0.69	YES	YES	WEAK	WEAK
7.WL	24	92%	27%	0.75	YES	YES	*	YES

Table 4.5b Grade 7 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RL	13	54%	65%	0.78	YES	YES	YES	YES
7.RI	27	47%	53%	0.72	YES	WEAK	YES	YES
7.WL	24	87%	27%	0.74	YES	YES	*	YES

\*Number of items

## Grade 8 ELA

The AzMERIT grade 8 paper test form and online test form were both found to be acceptably aligned. To be considered fully aligned, each test form would need four items revised or replaced. For the paper test form, one item would need to be revised or replaced to match the DOK of the corresponding standard within the RL reporting category and three items would need to be revised or replaced that match the match the DOK of the corresponding standard within the RI reporting category. One of the revised or replaced RI items would also need to target an additional standard within the RI reporting category. The online test form would need two items revised or replaced to match the DOK of the corresponding standard within the RL reporting category and two items revised or replaced to match the DOK of the corresponding standard within the RI reporting category.

Table 4.6a and 4.6b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 8 ELA Test Forms

Table 4.6a Grade 8 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
8.RL	18	44%	65%	0.75	YES	WEAK	YES	YES
8.RI	23	39%	45%	0.78	YES	NO	WEAK	YES
8.WL	24	85%	27%	0.73	YES	YES	*	YES

Table 4.6b Grade 8 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
8.RL	16	37%	67%	0.79	YES	NO	YES	YES
8.RI	24	42%	54%	0.78	YES	WEAK	YES	YES
8.WL	24	79%	26%	0.76	YES	YES	*	YES

\*Number of items

## Grade 9 ELA

The AzMERIT grade 9 paper test form and online test form were both found to be acceptably aligned. To be considered fully aligned, the paper test form would need two items to be revised or replaced to match the DOK of the corresponding standard within the RI reporting category as well as target additional standards within the RI reporting category. The online test form would need three items revised or replaced: one item to match the DOK of the corresponding standard within the RL reporting category and two items revised or replaced to match the DOK of the corresponding standard within the RI reporting category as well as target additional standards within the RI reporting category. In their debriefing notes, two reviewers commented that they thought the grade 9 test forms were better quality in terms of items and alignment considerations than were the grade 7 or grade 8 test forms.

Table 4.7a and 4.7b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 9 ELA Test Forms

Table 4.7a Grade 9 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
9.RL	15	52%	56%	0.78	YES	YES	YES	YES
9.RI	23	44%	42%	0.75	YES	WEAK	WEAK	YES
9.WL	24	87%	27%	0.72	YES	YES	*	YES

Table 4.7b Grade 9 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
9.RL	16	45%	59%	0.75	YES	WEAK	YES	YES
9.RI	24	41%	44%	0.79	YES	WEAK	WEAK	YES
9.WL	24	86%	24%	0.74	YES	YES	*	YES

\*Number of items

## Grade 10 ELA

The AzMERIT grade 10 paper test form was found to be acceptably aligned and the online test form was found to need slight improvement. The main alignment issue for the grade 10 test forms was DOK consistency for the RL and RI reporting categories. To be considered fully aligned, the paper test form would need five items to be revised or replaced. Three of these items would need to match the DOK of the corresponding standard within the RL reporting category. Two of these items would need to match the DOK of the corresponding standard within the RI reporting category as well as target at least one additional standard within the RI reporting category. The online test form would need ten items revised or replaced. For the RL reporting category, four items would need to be revised or replaced to match the DOK of the corresponding standard within the RL reporting category and six items would need to be revised or replaced to match the DOK of the corresponding standard within the RI reporting category.

Table 4.8a and 4.8b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 10 ELA Test Forms

Table 4.8a Grade 10 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
10.RL	16	30%	65%	0.74	YES	NO	YES	YES
10.RI	22	42%	45%	0.74	YES	WEAK	WEAK	YES
10.WL	22	78%	25%	0.72	YES	YES	*	YES

Table 4.8b Grade 10 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
10.RL	15	28%	65%	0.72	YES	NO	YES	YES
10.RI	23	25%	61%	0.73	YES	NO	YES	YES
10.WL	22	89%	24%	0.73	YES	YES	*	YES

## Grade 11 ELA

The AzMERIT grade 11 paper and online test forms were both found to need slight improvement. As with grade 10, the main alignment issue for the grade 11 test forms was DOK consistency for the RL and RI reporting categories. To be considered fully aligned, the paper test form would need nine items to be revised or replaced and the online test form would need seven items revised or replaced. For the paper test form, three of these items would need to match the DOK of the corresponding standard within the RL reporting category and six of these items would need to match the DOK of the corresponding standard within the RI reporting category. For the online test form, four items would need to be revised or replaced to match the DOK of the corresponding standard within the RL reporting category and three items would need to be revised or replaced to match the DOK of the corresponding standard within the RI reporting category. In the debriefing notes, one reviewer commented that the passages used with the grade 11 test forms were not relevant to students and expressed concerns about bias and sensitivity issues related to the passages. The reviewer suggested that the passages be considered for replacement. One reviewer also commented that the grade 11 assessments did not include a diversity of passages or types of questions in comparison to the other test forms reviewed.

Table 4.9a and 4.9b

Summary of Alignment Statistics and Findings for the AzMERIT Grade 11 ELA Test Forms

Table 4.9a Grade 11 ELA Paper Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
11.RL	16	30%	60%	0.82	YES	NO	YES	YES
11.RI	21	27%	50%	0.74	YES	NO	YES	YES
11.WL	26	82%	28%	0.74	YES	YES	*	YES

Table 4.9b Grade 11 ELA Online Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
11.RL	15	27%	58%	0.84	YES	NO	YES	YES
11.RI	23	39%	64%	0.79	YES	NO	YES	YES
11.WL	23	80%	26%	0.79	YES	YES	*	YES

\*Number of items



## Mathematics Results

Out of the nine mathematics test forms reviewed, only one, the Geometry EOC test form, was found to need slight improvement. All other test forms were found to be acceptably aligned. The major alignment issue for the Geometry EOC test form was DOK Consistency. DOK Consistency was unmet for the reporting category of Similarity, Right Triangles, and Trigonometry (GSRT) and only weakly met for the reporting categories of Congruence (GCO) and Circles and Geometric Measurement (GCGM). The DOK Consistency criterion was unmet or only weakly met for one reporting category for grades 3-8, although the overall alignment for these test forms was considered acceptable. All test forms met the criterion of Categorical Concurrence for all reporting categories. For grades 3-8, test forms met the Range of Knowledge criterion for all reporting categories. Range of Knowledge was only weakly met for one reporting category for Algebra I EOC, Geometry EOC, and Algebra II EOC, although this was not a main alignment issue. Balance of Representation was met (or weakly met in one case) for all grades and all reporting categories.

The grade 7-Algebra II reviewers were delayed significantly by the coding of the Algebra I EOC test form. Reviewers struggled to interpret the match of the test form with the standards. After the full group completed the Algebra I EOC test form, the group split into two subgroups, to ensure that the Geometry EOC and Algebra II EOC test forms would be analyzed within the allotted time. Because of the large, 8-person, initial reviewer group size, it was possible to have four reviewers analyze both Geometry EOC and Algebra II EOC test forms.

## Grade 3 Mathematics

The AzMERIT grade 3 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just two items revised or replaced to meet the DOK of the corresponding standard within the reporting category of Measurement, Data, and Geometry (MGD).

Table 5.1 Summary of Alignment Statistics and Findings for the AzMERIT Grade 3 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
3.OBT	23	75%	68%	0.73	YES	YES	YES	YES
3.NF	9	75%	100%	0.89	YES	YES	YES	YES
3.MGD	13	45%	80%	0.75	YES	WEAK	YES	YES

\*Number of items

## Grade 4 Mathematics

The AzMERIT grade 4 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just one item revised or replaced to meet the DOK of the corresponding standard within the reporting category of Number and Operations – Fractions (NF).

Table 5.2 Summary of Alignment Statistics and Findings for the AzMERIT Grade 4 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
4.OBT	23	65%	86%	0.79	YES	YES	YES	YES
4.NF	16	46%	88%	0.72	YES	WEAK	YES	YES
4.MGD	8	78%	54%	0.79	YES	YES	YES	YES

\*Number of items

## Grade 5 Mathematics

The AzMERIT grade 5 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just two items revised or replaced to meet the DOK of the corresponding standard within the reporting category of Number and Operations – Fractions (NF). In their debriefing notes, reviewers noted that only part of the standard 5.OBT.2.7 was addressed in assessment items. This standard specifies using all four operations with multi-digit whole numbers and decimals but reviewers commented that the test items did not include multiplication or division. One reviewer noted that word problems could use a broader range of people's names that might better reflect the range of names of the students who take the assessment.

Table 5.3 Summary of Alignment Statistics and Findings for the AzMERIT Grade 5 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
5.OBT	19	87%	77%	0.76	YES	YES	YES	YES
5.NF	14	42%	95%	0.82	YES	WEAK	YES	YES
5.MGD	12	64%	79%	0.81	YES	YES	YES	YES

\*Number of items

## Grade 6 Mathematics

The AzMERIT grade 6 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need three items revised or replaced to meet the DOK of the corresponding standard within the reporting category of Ratio and Proportion (RP) and one item revised or replaced to address a standard within the reporting category of Geometry, Statistics and Probability (GS) that is not currently targeted. In their debriefing notes, reviewers made several comments about what they perceived as a lack of rigor on the grade 6 assessment, both in general and as compared to previous assessments and the work that is expected in the classroom.

Table 5.4 Summary of Alignment Statistics and Findings for the AzMERIT Grade 6 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
6.RP	11	35%	83%	0.68	YES	NO	YES	WEAK
6.NS	14	60%	95%	0.85	YES	YES	YES	YES
6.EE	14	73%	74%	0.77	YES	YES	YES	YES
6.GS	9	49%	61%	0.82	YES	WEAK	YES	YES

\*Number of items

## Grade 7 Mathematics

The AzMERIT grade 7 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need two items revised or replaced to meet the DOK of the corresponding standard within the reporting category of The Number System (NS). Reviewers made extensive comments on the grade 7 test form. The extensive commentary is, in part, due to the fact that this was the first test form reviewed, and it was reviewed by both mathematics grade-band groups and discussed extensively in order to check for inter-group calibration and adjudicate any differences in approach. One decision rule that came out of adjudication discussions was to help reviewers differentiate between the standards RP1.2 (c) and EE1.4. The reviewers agreed that EE1.4 was the best match for an item with a relationship that fit the form of the equation in the standard ( $px+q=r$ ), i.e., the relationship is not proportional. Reviewers agreed that when the relationship was proportional, RP1.2 should be coded.

Table 5.5 Summary of Alignment Statistics and Findings for the AzMERIT Grade 7 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RP	10	76%	96%	0.79	YES	YES	YES	YES
7.NS	12	38%	100%	0.80	YES	NO	YES	YES
7.EE	9	71%	97%	0.83	YES	YES	YES	YES
7.GS	16	57%	79%	0.80	YES	YES	YES	YES

\*Number of items

## Grade 8 Mathematics

The AzMERIT grade 8 test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just one item revised or replaced to meet the DOK of the corresponding standard within the reporting category of Statistics, Probability, and the Number System (SN). Although the test form passed the minimum alignment requirements for DOK Consistency, reviewers made a number of comments expressing dismay at the number of DOK 1 items on the assessment. Reviewers also commented on what they perceived as an inexact match between a number of items and the corresponding standards.

Table 5.6 Summary of Alignment Statistics and Findings for the AzMERIT Grade 8 Mathematics Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
8.EE	18	65%	90%	0.74	YES	YES	YES	YES
8.F	11	60%	98%	0.73	YES	YES	YES	YES
8.G	12	55%	67%	0.88	YES	YES	YES	YES
8.SN	9	42%	51%	0.85	YES	WEAK	YES	YES

\*Number of items

## Algebra I EOC

The AzMERIT Algebra I EOC test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just two items revised or replaced to address standards within the Statistics and Quantitative Reasoning (A1SQ) reporting category that is not currently targeted. Reviewers struggled to code many of the Algebra I items and multiple reviewers made comments on a number of items that they thought were a better fit for a higher or lower grade level standard. Although the test form met the minimum cutoffs for alignment criteria, reviewer comments are generally negative and all eight reviewers who analyzed the Algebra I EOC test form marked it as “needs major improvement.”

Table 5.7 Summary of Alignment Statistics and Findings for the AzMERIT Algebra I EOC Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
A1A	19	63%	66%	0.77	YES	YES	YES	YES
A1F	20	57%	72%	0.76	YES	YES	YES	YES
A1SQ	9	59%	47%	0.88	YES	YES	WEAK	YES

\*Number of items

## Geometry EOC

The AzMERIT Geometry EOC test form was found to need slight improvement. The main alignment issue is unmet or weakly met DOK Consistency. To be considered fully aligned, the test form would need seven items revised or replaced—one item to match the DOK of the corresponding standard in the Congruence (GCO) reporting category, five items to match the DOK of the corresponding standard in the Similarity, Right Triangles, and Trigonometry (GSRT) reporting category, and one item to match the DOK of the corresponding standard in the Circles and Geometric Measurement (GCGM) reporting category. This last item could address a standard within the GCGM reporting category that was not yet targeted in order to also resolve the weak Range of Knowledge.

Table 5.8 Summary of Alignment Statistics and Findings for the AzMERIT Geometry EOC Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
GCO	12	46%	54%	0.76	YES	WEAK	YES	YES
GSRT	14	17%	75%	0.79	YES	NO	YES	YES
GCGM	14	48%	50%	0.78	YES	WEAK	WEAK	YES
GGP	8	57%	85%	0.88	YES	YES	YES	YES

\*Number of items

## Algebra II EOC

The AzMERIT Algebra II EOC test form was found to be acceptably aligned. To be considered fully aligned, the test form would need just one item revised or replaced to address a standard within the Statistics and Quantitative Reasoning (A2SQ) reporting category that was not yet targeted. Multiple reviewers made comments on a number of items that they thought were a better fit for a lower grade level standard (e.g. an item about sample space) or that assessed content that is no longer included in the Algebra II standards (e.g. items about margin of error, simple probability, systems of linear equations). Reviewers' comments are generally negative, noting that many items were difficult to code because the items were not strongly correlated with the Algebra II standards. The reviewers who responded to the particular debriefing prompt all marked the test as needing slight or major improvement.

Table 5.9 Summary of Alignment Statistics and Findings for the AzMERIT Algebra II EOC Test Form

	Alignment Statistics				Alignment Findings			
	CC*	DOK %	Range	Balance	CC	DOK	Range	Balance
A2A	17	56%	64%	0.84	YES	YES	YES	YES
A2F	15	52%	67%	0.80	YES	YES	YES	YES
A2SQ	16	74%	48%	0.80	YES	YES	WEAK	YES

\*Number of items

## Source of Challenge Issues **and Reviewers' Comments**

Reviewers were instructed to document any Source-of-Challenge issue and to provide any other comments they may have about an item. A Source-of-Challenge is a technical issue with an item that can result in a student answering the item correctly or incorrectly for the wrong reason. These comments can be found in Appendix D. Reviewers sometimes accidentally included comments in the Source-of-Challenge text box instead of the Notes text box. For ELA test forms, only grade 8 paper form item #1 was flagged (for the same reason) with Source-of-Challenge by more than one reviewer. For mathematics test forms, on Algebra I EOC, item #41, a majority of reviewers commented that there are two correct answers for the item. All of the Source-of-Challenge comments should be reviewed in case one reviewer noticed an issue that others may have missed.

Reviewers wrote notes about a number of items on each form. These notes include general comments as well as indicate concerns with items. Some notes include suggestions for resolutions to issues identified. After coding each assessment form, reviewers were asked to respond to five debriefing questions. All of the comments made by the reviewers are given in Appendices D and E.

### Reliability among Reviewers

The intraclass correlation among the AzMERIT reviewers' assignment of DOK levels to items was very high for all ELA analyses and high to very high for all mathematics analyses with the exception of Algebra II. The intraclass correlation for assigning DOK levels to items for this analysis was 0.68. Reviewer agreement is shown in Table 6. An intraclass correlation value greater than 0.8 generally indicates a high level of agreement among the reviewers. This level was exceeded for all analyses except for the Algebra II EOC test form. The high intraclass correlation indicates that there was high agreement among the reviewers in assigning DOK levels to items for all but one of the 27 analyses. The agreement among reviewers in assigning items to standards and reporting categories was also high. For most alignment studies the standards pairwise agreement is higher than 0.6 and the reporting category pairwise agreement is higher than 0.8. All agreements were higher than these values for all of the analyses, both for standards and for reporting categories. The AzMERIT reviewers were able to do at least some adjudication of the codings for the assessments for most grade levels for each subject with the exception of mathematics grade 6, Algebra I, Geometry, and Algebra II. For grade 6, reviewers completed coding but did not have time for adjudication. For the high school test forms, the extended time spent on the Algebra I EOC test form resulted in a tightened schedule and the formation of two sub-groups, and there was no available time for adjudication. The reported findings reflect any adjudication that was completed for the other grades of mathematics and for ELA.

Table 6 Intraclass and Pairwise Comparisons, AzMERIT Alignment Analysis, ELA and Mathematics Test Forms

Test Form	Intraclass Correlation (DOK)	Pairwise Comparison (DOK)	Pairwise Comparison (Standards)	Pairwise Comparison (Reporting Category)
ELA Grade 3 Paper	0.95	0.77	0.74	0.90
ELA Grade 3 Online	0.98	0.89	0.81	0.92
ELA Grade 4 Paper	0.95	0.81	0.81	0.98
ELA Grade 4 Online	0.96	0.88	0.84	0.97
ELA Grade 5 Paper	0.95	0.83	0.77	0.99
ELA Grade 5 Online	0.96	0.86	0.80	0.98
ELA Grade 6 Paper	0.96	0.86	0.77	0.98
ELA Grade 6 Online	0.98	0.90	0.80	0.99
ELA Grade 7 Paper - LG	0.94	0.72	0.78	0.92
ELA Grade 7 Paper - UG	0.95	0.77	0.69	0.93
ELA Grade 7 Online	0.95	0.78	0.72	0.93
ELA Grade 8 Paper	0.99	0.95	0.75	0.97
ELA Grade 8 Online	1.0	0.98	0.87	0.99
ELA Grade 9 Paper	0.95	0.74	0.66	0.98
ELA Grade 9 Online	0.96	0.81	0.73	0.98
ELA Grade 10 Paper	0.95	0.85	0.76	0.99
ELA Grade 10 Online	0.96	0.90	0.75	0.99
ELA Grade 11 Paper	0.97	0.85	0.69	0.99
ELA Grade 11 Online	0.97	0.85	0.69	0.98

Table 6 **cont'd** Intraclass and Pairwise Comparisons, AzMERIT Alignment Analysis, ELA and Mathematics Test Forms

Test Form	Intraclass Correlation (DOK)	Pairwise Comparison (DOK)	Pairwise Comparison (Standards)	Pairwise Comparison (Reporting Category)
Mathematics Grade 3	0.94	0.79	0.78	0.98
Mathematics Grade 4	0.90	0.75	0.80	0.98
Mathematics Grade 5	0.91	0.75	0.81	0.95
Mathematics Grade 6	0.86	0.74	0.64	0.88
Mathematics Grade 7 – LG	0.96	0.80	0.81	0.89
Mathematics Grade 7 – UG	0.95	0.75	0.86	0.92
Mathematics Grade 8	0.94	0.73	0.79	0.91
Algebra I EOC	0.87	0.62	0.66	0.92
Geometry EOC	0.90	0.74	0.68	0.88
Algebra II EOC	0.68	0.55	0.72	0.84



Both groups of reviewers for each content area (the grade 3-6 group and the grade 7-11 group) analyzed the grade 7 test form (paper test form for ELA) to help assure that each group was applying the process in a similar way. The complete data for both groups are reported in the appendices and summarized in the tables below. The findings from both groups were nearly identical, identifying similar strengths and weaknesses in the test forms. The results for coding items from grade 7 test forms for both ELA and mathematics were sufficiently comparable to indicate that both groups were using the process and the DOK definitions in the same way. Where a few differences in coding of items between the two groups were found, these were discussed and resolved in large-group discussion and then further supported by group leaders.

### Grade 7 ELA

Table 7.7a Grade 7 ELA Paper Test Form – Lower Grades Group

	Alignment Statistics				Alignment Findings			
	CC	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RL	13	54%	57%	0.74	YES	YES	YES	YES
7.RI	26	63%	41%	0.69	YES	YES	WEAK	WEAK
7.WL	24	92%	27%	0.75	YES	YES	*	YES

Table 7.7b Grade 7 ELA Paper Test Form – Upper Grades Group

	Alignment Statistics				Alignment Findings			
	CC	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RL	16	47%	62%	0.83	YES	WEAK	YES	YES
7.RI	31	50%	44%	0.77	YES	YES	WEAK	YES
7.WL	24	93%	29%	0.74	YES	YES	*	YES

### Grade 7 Mathematics

Table 8.7a Grade 7 Mathematics – Lower Grades Group

	Alignment Statistics				Alignment Findings			
	CC	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RP	10	76%	96%	0.79	YES	YES	YES	YES
7.NS	12	31%	100%	0.80	YES	NO	YES	YES
7.EE	9	71%	97%	0.83	YES	YES	YES	YES
7.GS	16	57%	79%	0.80	YES	YES	YES	YES

Table 8.7b Grade 7 Mathematics – Upper Grades Group

	Alignment Statistics				Alignment Findings			
	CC	DOK %	Range	Balance	CC	DOK	Range	Balance
7.RP	11	91%	96%	0.81	YES	YES	YES	YES
7.NS	12	44%	100%	0.83	YES	WEAK	YES	YES
7.EE	8	79%	100%	0.85	YES	YES	YES	YES
7.GS	16	61%	74%	0.79	YES	YES	YES	YES

## Summary

An alignment institute was held in September, 2017, at the Arizona Department of Education office building to analyze the agreement between the 2017 Arizona Statewide Achievement Assessment for English Language Arts and Mathematics (AzMERIT) and corresponding grade level Standards (2016) for grades 3-11 for English Language Arts and grades 3-8, Algebra I, Geometry, and Algebra II for mathematics. For ELA, both paper and online versions of forms were analyzed for each grade because the two forms were not identical. For mathematics, only the paper form was analyzed for each grade because the online form was identical to the paper form.

Two groups of reviewers participated in the analysis for each subject area. Each group consisted of three to six reviewers from Arizona and three external reviewers. For ELA, one group analyzed grades 3-7 assessments and the other group analyzed grades 7-11. For mathematics, one group analyzed grades 3-7 assessments and the other group analyzed grades 7, 8, Algebra I, Geometry, and Algebra II test forms. For both ELA and mathematics, both grade-band groups completed the grade 7 paper test form to check for consistency between groups. Ten of the 12 external reviewers had participated in multiple prior alignment studies and were very familiar with the process. The other two external reviewers were knowledgeable of the process and received some additional training in advance of the study. Each group included panelists with expertise in special education and with English learners. All panelists were selected because of their notable K-12 education experience and content expertise.

Several adjustments were necessary to interpret the coding of the writing prompts. One reason that adjustments were necessary is that the typical acceptable level for Range of Knowledge (50% of standards within a reporting category have a corresponding assessment item) was not applicable. Considering grade 8 standards as an example, only four of the ten Writing standards, even with generous interpretation, could apply to a single prompt. This is because some standards are genre-dependent, depending on if students are writing an argument (WL.1.1) or an informative/explanatory text (WL.1.2), or narrative (WL.1.3) as well as because some standards are not assessable in the AzMERIT format (e.g. WL.1.5, which involves planning, revising, and editing; WL.1.6, which centers on use of technology, and WL.1.10, which emphasizes writing “routinely”).

To evaluate alignment, the single AzMERIT writing prompt was considered as a three-part item instead of a single item, maintaining the same overall total weighting, but with consideration of standards specific to each component of the corresponding rubric. This approach parallels the way Arizona treats the item, in three parts, for calibration and scaling.

Reviewers' codings and comments on the writing prompts suggest that the writing prompts are appropriately complex and successfully target key standards within the Writing reporting category. With consideration of all reporting categories and all alignment criteria, 15 out of 18 ELA test forms analyzed were fully or acceptably aligned. Three test forms, for Grade 10 (paper) and Grade 11 (paper and online) needed slight improvement. No test forms required major improvement. Reviewers' feedback was more positive, overall, for grades 3-6 and grade 9 assessments than for grade 7, 8, 10, and 11 assessments.

For mathematics, eight out of the nine test forms analyzed were acceptably aligned. One test form, for Geometry EOC, needed slight improvement. Although the mathematics Algebra I EOC and Algebra II test forms acceptably met the alignment criteria, reviewers' qualitative feedback suggests that there are some concerns related to item specificity, assessment of topics that no longer are included in the grade level standards, and other aspects of assessment quality. For both ELA and mathematics test forms, reviewers mapped all or nearly all items on all test forms to a grade level standard. Of all assessments, the Algebra I and Algebra II test forms are the ones that reviewers struggled most with and had more than one item coded to a generic objective by a majority of reviewers. Reviewers' struggle to map the items on these test forms indicates that the Algebra I and Algebra II test forms may have some items that are no longer relevant to the current standards. Reviewers made notes on specific items on each assessment. The reviewers' comments provide additional feedback on the assessment items.

The results produced from the institute pertain only to the issue of alignment between the AzMERIT assessable standards and assessments for ELA Grades 3-11 and Mathematics Grades 3-8, Algebra I EOC, Geometry EOC, and Algebra II EOC. Note that an alignment analysis of this nature does not serve as external verification of the general quality of the standards or assessments. Rather, only the degree of alignment is discussed in the results.

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# Appendix A

## Arizona 2016 ELA Standards Grades 3-11

### Group Consensus DOK Values for ELA Standards Grades 3-11

December 8, 2017

Table A.1  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 3

Level	Description	DOK
3RL.0.0	Reading and Foundational Standards for Literature	
3RL.1.0	Reading Standards for Literature	
3RL.1.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2
3RL.1.2	Recount and paraphrase stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in text.	2
3RL.1.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	3
3RL.1.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.	2
3RL.1.5	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.	2
3RL.1.6	Distinguish one's own point of view from that of the narrator or those of the characters.	2
3RL.1.7	Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).	3
3RL.1.8	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	3
3RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 3.	2
3RL.2.0	Foundational Standards for Reading	
3RL.2.1	Know and apply phonics and word analysis skills in decoding one-syllable or multisyllabic words. a. Identify and know the meaning of the most common prefixes and derivational suffixes. b. Decode words with common Latin suffixes. c. Apply knowledge of the six syllable types to read grade-level words accurately. d. Read grade-level appropriate irregularly spelled words.	1
3RL.2.2	Read with sufficient accuracy and fluency to support comprehension. a. Read grade-level text with purpose and understanding. b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	2

3RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
3RI.1.0	Reading Standards for Informational Text	
3RI.1.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2
3RI.1.2	Determine the main idea of a text; recount and paraphrase the key details and explain how they support the main idea.	2
3RI.1.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	3
3RI.1.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.	2
3RI.1.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.	2
3RI.1.6	Distinguish one's own point of view from that of the author of a text.	3
3RI.1.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).	3
3RI.1.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	2
3RI.1.9	Compare and contrast the most important points and key details presented in two texts on the same topic.	3
3RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts, including history/social studies, science, and technical texts, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 3.	2
3RI.2.0	Listening and Speaking Standards	
3RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. d. Explain their own ideas and understanding based on the discussion.	3



3RI.2.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	2
3RI.2.3	Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.	3
3RI.2.4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.	2
3RI.2.5	Create audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.	2
3RI.2.6	Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 3 Language standards 1 and 3 for specific expectations.)	1
3WL.0.0	Writing and Language Standards	
3WL.1.0	Writing Standards	
3WL.1.1	Write opinion pieces on topics or texts, using reasons to support one's point of view. a. Introduce the topic or text, state an opinion, and create an organizational structure that lists reasons. b. Provide reasons that support the opinion. c. Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons. d. Provide a concluding statement or section.	3
3WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension. b. Develop the topic with facts, definitions, and details. c. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information. d. Provide a concluding statement or section.	3
3WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. c. Use temporal words and phrases to signal event order. d. Provide a sense of closure.	3
3WL.1.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
3WL.1.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 3.)	3

3WL.1.6	With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.	2
3WL.1.7	Conduct short research projects that build knowledge about a topic.	2
3WL.1.8	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.	2
3WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4
3WL.2.0	Writing Foundational Standards	
3WL.2.1	Demonstrate and apply handwriting skills. a. Read and write cursive letters, upper and lower case. b. Transcribe ideas legibly in cursive and manuscript, with appropriate spacing and indentation. (NOTE: It is against state law to assess penmanship 15-741 (E).)	1
3WL.2.2	Know and apply spelling conventions and patterns. a. Spell single-syllable words with less common and complex graphemes (e.g., ough, augh, old, -ind, -ost, -ild families). b. Identify language of origin for words, as noted in dictionaries. c. Spell singular and plural possessives (e.g., teacher's, teachers'). d. Spell regular two- and three-syllable words that: 1. Combine all basic syllable types: closed, VCe (Vowel-Consonant-silent e), open, vowel team, vowel-r, and consonant le and 2. Include common, transparent prefixes and suffixes (e.g., re-, pre-, sub-, un-, dis-, mis-; -able, -ness, -ful, -tion). e. Spell grade-level appropriate words in English, as found in a research-based list (*See guidelines under Word Lists in the ELA Glossary), including: 1. Irregular words 2. Pattern-based words.	1
3WL.3.0	Language Standards	
3WL.3.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences. b. Form and use regular and irregular plural nouns. c. Use abstract nouns (e.g., childhood). d. Form and use regular and irregular verbs. e. Form and use the simple verb tenses (e.g., I walked; I walk; I will walk). f. Ensure subject-verb and pronoun-antecedent agreement. g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified. h. Use coordinating and subordinating conjunctions. i. Produce simple, compound, and complex sentences. j. Write one or more paragraphs that explain a main idea within a topic and support it with details and conclusions/closure.	2
3WL.3.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Capitalize appropriate words in titles. b. Use commas in addresses. c. Use commas and quotation marks in dialogue. d. Form and use possessives.	1
3WL.3.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Choose words and phrases for effect. b.	2

	Recognize and observe differences between the conventions of spoken and written Standard English.	
3WL.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. a. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat). b. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion). c. Use sentence-level context as a clue to the meaning of a word or phrases. d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.	2
3WL.3.5	Demonstrate understanding of word relationships and nuances in word meanings. a. Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps). b. Identify real-life connections between words and their uses (e.g., describe people who are friendly or helpful). c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, and wondered).	3
3WL.3.6	Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night, we went looking for them).	2

Table A.2  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 4

Level	Description	DOK
4RL.0.0	Reading and Foundational Standards for Literature	
4RL.1.0	Reading Standards for Literature	
4RL.1.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	2
4RL.1.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.	2
4RL.1.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	2
4RL.1.4	Determine the meaning of words, phrases, and figurative language found in stories, poetry, myths, and traditional literature from different cultures, including those that allude to significant characters.	2
4RL.1.5	Explain the overall structure and major differences between poetry, drama, and prose.	2
4RL.1.6	Compare and contrast the point of view from which different stories are narrated, including the difference between first-and third-person narrations.	3
4RL.1.7	Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.	3
4RL.1.8	Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	3
4RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 4.	2
4RL.2.0	Foundational Standards for Reading	
4RL.2.1	Know and apply phonics and word analysis skills in decoding multisyllabic words in context and out of context. a. Use combined knowledge of all letter-sound correspondences to read unfamiliar multisyllabic words accurately. b. Apply knowledge of the six syllable patterns to read grade level words accurately. c. Use combined knowledge of morphology (e.g., roots and affixes) to read grade level words accurately.	1
4RL.2.2	Read with sufficient accuracy and fluency to support comprehension. a. Read grade-level text with purpose and understanding. b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	2

4RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
4RI.1.0	Reading Standards for Informational Text	
4RI.1.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	2
4RI.1.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	2
4RI.1.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	2
4RI.1.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.	2
4RI.1.5	Describe the overall structure (e.g., chronology, comparison, cause/effect, and problem/solution) of events, ideas, concepts, or information in a text or part of a text.	2
4RI.1.6	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus, and the information provided.	3
4RI.1.7	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.	3
4RI.1.8	Explain how an author uses reasons and evidence to support particular points in a text.	3
4RI.1.9	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.	3
4RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts, including history/social studies, science, and technical texts, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 4.	2
4RI.2.0	Listening and Speaking Standards	
4RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. a. Come to discussions prepared having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions and carry out assigned roles. c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. d. Review the key ideas expressed and explain their own ideas and understanding based on the discussion.	3
4RI.2.2	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	3
4RI.2.3	Identify the reasons and evidence a speaker provides to support particular points.	2
4RI.2.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an	3

	understandable pace.	
4RI.2.5	Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.	2
4RI.2.6	Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See grade 4 Language standards 1 and 3 for specific expectations).	2
4WL.0.0	Writing and Language Standards	
4WL.1.0	Writing Standards	
4WL.1.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information. a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. b. Provide reasons that are supported by facts and details. c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition). d. Provide a concluding statement or section related to the opinion presented.	3
4WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because). d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.	3
4WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use dialogue and description to develop experiences and events or show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events.	3
4WL.1.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above).	3

4WL.1.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 4).	3
4WL.1.6	With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to complete a writing task.	2
4WL.1.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.	2
4WL.1.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, categorize information, and provide a list of sources.	2
4WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 4 Reading standards to literature. b. Apply grade 4 Reading standards to informational texts.	3
4WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4
4WL.2.0	Writing Foundational Standards	
4WL.2.1	Demonstrate and apply handwriting skills. a. Read and write cursive letters, upper and lower case. b. Transcribe ideas legibly and fluently with appropriate spacing and indentation. (It is against state law to assess penmanship 15-741 (E).)	1
4WL.3.0	Language Standards	
4WL.3.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why). b. Form and use the progressive verb tenses (e.g., I was walking; I am walking; I will be walking). c. Use modal auxiliaries (e.g., can, may, must) to convey various conditions. d. Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag). e. Form and use prepositional phrases. f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. g. Correctly use frequently confused words (e.g., to, too, two; there, their). h. Write and organize one or more paragraphs that contain: a topic sentence, supporting details, and a conclusion that is appropriate to the writing task. (Construction of paragraph(s) should demonstrate command of Writing standards 1-3.)	2
4WL.3.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use correct capitalization. b. Use commas and quotation marks to mark direct speech and quotations from a text. c. Use a comma before a coordinating conjunction in a compound sentence. d. Spell grade-appropriate words correctly, consulting references as needed.	1



4WL.3.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Choose words and phrases to convey ideas precisely. b. Choose punctuation for effect. c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).	2
4WL.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies. a. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph). b. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. c. Consult reference materials (e.g., dictionaries, glossaries, thesauri), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.	2
4WL.3.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context. b. Recognize and explain the meaning of common idioms, adages, and proverbs. c. Demonstrate understanding of words by relating them to their synonyms and antonyms.	3
4WL.3.6	Acquire and accurately use grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).	2



Table A.3  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 5

Level	Description	DOK
5RL.0.0	Reading and Foundational Standards for Literature	
5RL.1.0	Reading Standards for Literature	
5RL.1.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	2
5RL.1.2	Determine a theme of a story, drama, or poem from details of the text; include how characters in story or drama respond to challenges, how the speaker in a poem reflects upon a topic, and a summary of the text.	3
5RL.1.3	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).	3
5RL.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.	2
5RL.1.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.	2
5RL.1.6	Describe how a narrator's or speaker's point of view influences how events are described.	2
5RL.1.7	Analyze how visual and multimedia elements contribute to the purpose, meaning, or tone of the text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, and poem).	3
5RL.1.8	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.	3
5RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 5.	2
5RL.2.0	Foundational Standards for Reading	
5RL.2.1	Know and apply phonics and word analysis skills in decoding multisyllabic words in context and out of context. a. Use combined knowledge of all letter-sound correspondences to accurately read unfamiliar multisyllabic words. b. Apply knowledge of the six syllable patterns to read grade level words accurately. c. Use combined knowledge of morphology to read grade level words accurately. d. Know and apply common, grade-appropriate Greek and Latin affixes and roots to accurately read unfamiliar words.	1
5RL.2.2	Read with sufficient accuracy and fluency to support comprehension. a. Read grade-level text with purpose and understanding. b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.	2

5RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
5RI.1.0	Reading Standards for Informational Text	
5RI.1.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	2
5RI.1.2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.	2
5RI.1.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text, based on specific information in the text.	2
5RI.1.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.	2
5RI.1.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, and problem/solution) of events, ideas, concepts, or information in two or more texts.	2
5RI.1.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.	3
5RI.1.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.	3
5RI.1.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).	3
5RI.1.9	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.	3
5RI.1.10	By the end of the year, proficiently and independently read and comprehend informational text, including history/social studies, science and technological texts, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 5.	2
5RI.2.0	Listening and Speaking Standards	
5RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly. a. Come to discussions prepared having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions and carry out assigned roles. c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. d. Review the key ideas expressed and draw conclusions based on information and knowledge gained from the discussions.	3
5RI.2.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	3
5RI.2.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.	3
5RI.2.4	Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to	3

	support main ideas or themes; speak clearly at an understandable pace.	
5RI.2.5	Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.	2
5RI.2.6	Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See grade 5 Language standards 1 and 3 for specific expectations.)	2
5WL.0.0	Writing and Language Standards	
5WL.1.0	Writing Standards	
5WL.1.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information. a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose. b. Provide logically ordered reasons that are supported by facts and details. c. Link opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically). d. Provide a concluding statement or section related to the opinion presented.	3
5WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially). d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.	3
5WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use narrative techniques, such as dialogue and description, to develop experiences and events or show the responses of characters to situations. c. Use a variety of transitional words and phrases to manage the sequence of events. d. Use concrete words and phrases and sensory details to convey experiences and events precisely. e. Provide a conclusion that follows from the narrated experiences or events.	3
5WL.1.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3

5WL.1.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 5.)	3
5WL.1.6	With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills in order to complete a writing task.	2
5WL.1.7	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic and to answer a specific question.	2
5WL.1.8	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.	2
5WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 5 Reading standards to literature. b. Apply grade 5 Reading standards to informational texts.	3
5WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4
5WL.2.0	Writing Foundational Standards	
5WL.2.1	Demonstrate and apply handwriting skills. a. Read and write cursive letters, upper and lower case. b. Transcribe ideas legibly and fluently with appropriate spacing and indentation. (NOTE: It is against state law to assess penmanship 15-741 penmanship 15-741 (E).)	1
5WL.3.0	Language Standards	
5WL.3.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences. b. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses. c. Use verb tense to convey various times, sequences, states, and conditions. d. Recognize and correct inappropriate shifts in verb tense. e. Use correlative conjunctions (e.g., either/or, neither/nor). f. Write and organize one or more paragraphs that contain: a topic sentence, supporting details, and a conclusion that is appropriate to the writing task (Reference Writing standards 1-3).	2
5WL.3.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use punctuation to separate items in a series. b. Use a comma to separate an introductory element from the rest of the sentence. c. Use a comma to set off the words yes and no (e.g., Yes, thank you), to set off a tag question from the rest of the sentence (e.g., It's true, isn't it?), and to indicate direct address (e.g., Is that you, Steve?). d. Use underlining, quotation marks, or italics to indicate titles of works. e. Spell grade-appropriate words correctly, consulting references as needed.	1
5WL.3.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Expand, combine, and reduce sentences for	2

	meaning, reader/listener interest, and style. b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.	
5WL.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies. a. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis). b. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase. c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.	2
5WL.3.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figurative language, including similes and metaphors, in context. b. Recognize and explain the meaning of common idioms, adages, and proverbs. c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.	3
5WL.3.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).	2

Table A.4  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 6

Level	Description	DOK
6RL.0.0	Reading Standards for Literature	
6RL.1.0	Reading Standards for Literature	
6RL.1.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	3
6RL.1.2	Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.	3
6RL.1.3	Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.	2
6RL.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.	2
6RL.1.5	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.	3
6RL.1.6	Explain how an author develops the point of view of the narrator or speaker in a text.	3
6RL.1.7	Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they see and hear when reading the text to what they perceive when they listen or watch.	3
6RL.1.8	Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.	3
6RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 6.	2
6RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
6RI.1.0	Reading Standards for Informational Text	
6RI.1.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	3
6RI.1.2	Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.	2
6RI.1.3	Analyze in detail how a key individual, event, or idea is introduced, illustrated, and developed in a text (e.g., through examples or anecdotes).	3
6RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.	2
6RI.1.5	Analyze how a particular sentence, paragraph, chapter, or section fits	3

	into the overall structure of a text and contributes to the development of the ideas.	
6RI.1.6	Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.	3
6RI.1.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.	3
6RI.1.8	Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.	3
6RI.1.9	Compare and contrast one author's presentation of events with that of another author.	3
6RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 6.	2
6RI.2.0	Listening and Speaking Standards	
6RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed, draw conclusions, and demonstrate understanding of multiple perspectives through reflection and paraphrasing.	3
6RI.2.2	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how it contributes to a topic, text, or issue under study.	3
6RI.2.3	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.	3
6RI.2.4	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.	3
6RI.2.5	Include multimedia components (e.g., graphics, images, music, and sound) and visual displays in presentations to clarify information.	2
6RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)	2
6WL.0.0	Writing and Language Standards	
6WL.1.0	Writing Standards	



6WL.1.1	Write arguments to support claims with clear reasons and relevant evidence. a. Introduce claim(s) and organize the reasons and evidence clearly. b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from the argument presented.	3
6WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. c. Use appropriate transitions to clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from the information or explanation presented.	3
6WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows from the narrated experiences or events.	3
6WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
6WL.1.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 6.)	3



6WL.1.6	Use technology, including the internet, to type and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to complete a writing task in a single sitting.	2
6WL.1.7	Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.	3
6WL.1.8	Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.	3
6WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 6 Reading standards to literature. b. Apply grade 6 Reading standards to informational text and nonfiction.	3
6WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4
6WL.2.0	Language Standards	
6WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Ensure that pronouns are in the proper case (subjective, objective, and possessive). b. Use intensive pronouns (e.g., myself, ourselves). c. Recognize and correct inappropriate shifts in pronoun number and person. d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). e. Recognize variations from Standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.	1
6WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements. b. Use correct spelling.	1
6WL.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Vary sentence patterns for meaning, reader/listener interest, and style. b. Maintain consistent style and tone.	2
6WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies. a. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible). b. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. d. Verify the preliminary determination of the meaning of a word or phrase.	2

6WL.2.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., personification) in context. b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words. c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty).	3
6WL.2.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2

Table A.5  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 7

Level	Description	DOK
7RL.0.0	Reading Standards for Literature	
7RL.1.0	Reading Standards for Literature	
7RL.1.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
7RL.1.2	Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.	3
7RL.1.3	Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	3
7RL.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including 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.	3
7RL.1.5	Analyze the structure of a text, including how a drama or poem's form or structure contributes to its meaning.	3
7RL.1.6	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.	3
7RL.1.7	Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).	3
7RL.1.8	Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.	3
7RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 7.	2
7RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
7RI.1.0	Reading Standards for Informational Text	
7RI.1.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
7RI.1.2	Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.	3
7RI.1.3	Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).	3

7RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone.	3
7RI.1.5	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.	3
7RI.1.6	Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.	3
7RI.1.7	Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).	3
7RI.1.8	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.	3
7RI.1.9	Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.	3
7RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 7.	2
7RI.2.0	Listening and Speaking Standards	
7RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views.	3
7RI.2.2	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how the ideas clarify a topic, text, or issue under study.	3
7RI.2.3	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.	3
7RI.2.4	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, appropriate vocabulary, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.	2
7RI.2.5	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.	3

7RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 for specific expectations.)	2
7WL.0.0	Writing and Language Standards	
7WL.1.0	Writing Standards	
7WL.1.1	Write arguments to support claims with clear reasons and relevant evidence. a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.	3
7WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from and supports the information or explanation presented.	3
7WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. e. Provide a conclusion that follows from and reflects on the narrated experiences or events.	3
7WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above).	3
7WL.1.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience	3

	have been addressed. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 7.)	
7WL.1.6	Use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others.	2
7WL.1.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	3
7WL.1.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	3
7WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 7 Reading standards to literature. b. Apply grade 7 Reading standards to informational text and nonfiction.	3
7WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4
7WL.2.0	Language Standards	
7WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Explain the function of phrases and clauses in general and their function in specific sentences. b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas. c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.	2
7WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use a comma to separate coordinate adjectives. b. Use correct spelling.	1
7WL.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.	2

7WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies. a. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel). b. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. d. Verify the preliminary determination of the meaning of a word or phrase.	2
7WL.2.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., literary, religious, and mythological allusions) in context. b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words. c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).	2
7WL.2.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2

Table A.6  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 8

Level	Description	DOK
8RL.0.0	Reading Standards for Literature	
8RL.1.0	Reading Standards for Literature	
8RL.1.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	2
8RL.1.2	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.	3
8RL.1.3	Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.	3
8RL.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	3
8RL.1.5	Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.	3
8RL.1.6	Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.	3
8RL.1.7	Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.	3
8RL.1.8	Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories or religious works, including describing how the material is rendered new.	3
8RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 8.	2
8RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
8RI.1.0	Reading Standards for Informational Text	
8RI.1.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	2
8RI.1.2	Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.	3
8RI.1.3	Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).	3



8RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	3
8RI.1.5	Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.	3
8RI.1.6	Determine an author's point of view, perspective and purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.	3
8RI.1.7	Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.	3
8RI.1.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.	3
8RI.1.9	Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.	2
8RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 8.	2
8RI.2.0	Listening and Speaking Standards	
8RI.2.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views based on the evidence presented.	3
8RI.2.2	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.	3
8RI.2.3	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.	3

8RI.2.4	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.	2
8RI.2.5	Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.	3
8RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 for specific expectations.)	2
8WL.0.0	Writing and Language Standards	
8WL.1.0	Writing Standards	
8WL.1.1	Write arguments to support claims with clear reasons and relevant evidence. a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.	3
8WL.1.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant facts, definitions, concrete details, quotations, or other information and examples. c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from and supports the information or explanation presented.	3

8WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters. c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events. d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. e. Provide a conclusion that follows from and reflects on the narrated experiences or events.	3
8WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
8WL.1.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 8.)	3
8WL.1.6	Use technology, including the internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.	3
8WL.1.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	3
8WL.1.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	3
8WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 8 Reading standards to literature. b. Apply grade 8 Reading standards to informational text and nonfiction.	3
8WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	4

8WL.2.0	Language Standards	
8WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences. b. Form and use verbs in the active and passive voice. c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood. d. Recognize and correct inappropriate shifts in verbals, voice, and mood.	2
8WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break. b. Use an ellipsis to indicate an omission. c. Use correct spelling.	1
8WL.2.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).	2
8WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies. a. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, and secede). b. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. d. Verify the preliminary determination of the meaning of a word or phrase.	2
8WL.2.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g. verbal irony, puns) in context. b. Use the relationship between particular words to better understand each of the words. c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).	2
8WL.2.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2

Table A.7  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 9

Level	Description	DOK
9RL.0.0	Reading Standards for Literature	
9RL.1.0	Reading Standards for Literature	
9RL.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
9RL.1.2	Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	3
9RL.1.3	Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	3
9RL.1.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.	3
9RL.1.5	Analyze how an author's choices concerning how to structure a text, order events within it, and manipulate time create such effects as mystery, tension, or surprise.	3
9RL.1.6	Analyze how points of view and/or cultural experiences are reflected in works of literature, drawing from a variety of literary texts.	3
9RL.1.7	Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment.	3
9RL.1.8	Analyze how an author draws on and transforms source material in a specific work.	3
9RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, drama, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 9.	2
9RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
9RI.1.0	Reading Standards for Informational Text	
9RI.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
9RI.1.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	3
9RI.1.3	Analyze how the author constructs 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.	3

9RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone.	3
9RI.1.5	Analyze 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).	3
9RI.1.6	Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.	3
9RI.1.7	Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.	3
9RI.1.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.	3
9RI.1.9	Analyze seminal/primary documents of historical and literary significance, including how they address related themes and concepts.	3
9RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 9.	2
9RI.2.0	Listening and Speaking Standards	
9RI.2.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 9 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, and presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections based on the evidence and reasoning presented.	3
9RI.2.2	Integrate multiple sources of information presented in diverse media and formats, evaluating the credibility and accuracy of each source.	3
9RI.2.3	Evaluate a speaker's point of view, reasoning, use of evidence, and use of rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.	3

9RI.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task; use appropriate eye contact, adequate volume, and clear pronunciation.	3
9RI.2.5	Make strategic use of digital media in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	3
9RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 9 Language standards 1 and 3 for specific expectations.)	2
9WL.0.0	Writing and Language Standards	
9WL.1.0	Writing Standards	
9WL.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. b. Develop 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. Use 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. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented.	3
9WL.1.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop 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. c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and an appropriate tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide 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).	3



9WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	3
9WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
9WL.1.5	Develop and strengthen 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. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 9.)	3
9WL.1.6	Use 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.	2
9WL.1.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	3
9WL.1.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	3
9WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 9 Reading standards to literature. b. Apply grades 9 Reading standards to informational text and nonfiction.	3
9WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	4



9WL.2.0	Language Standards	
9WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Use parallel structure. b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, and absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.	2
9WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. b. Use a colon to introduce a list or quotation. c. Use correct spelling.	1
9WL.2.3	Apply 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. a. Write and edit work so that it conforms to the guidelines in a style manual.	2
9WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 9 reading and content, choosing flexibly from a range of strategies. a. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy). b. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. d. Verify the preliminary determination of the meaning of a word or phrase.	2
9WL.2.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.	2
9WL.2.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2

Table A.8  
Group Consensus  
AZ 2016 Standards for Language Arts, Grade 10

Level	Description	DOK
10RL.0.0	Reading Standards for Literature	
10RL.1.0	Reading Standards for Literature	
10RL.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
10RL.1.2	Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	3
10RL.1.3	Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	3
10RL.1.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.	3
10RL.1.5	Analyze how an author's choices concerning how to structure a text, order events within it, and manipulate time create such effects as mystery, tension, or surprise.	3
10RL.1.6	Analyze how points of view and/or cultural experiences are reflected in works of literature, drawing from a variety of literary texts.	3
10RL.1.7	Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment.	3
10RL.1.8	Analyze how an author draws on and transforms source material in a specific work.	3
10RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, drama, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 10.	2
10RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
10RI.1.0	Reading Standards for Informational Text	
10RI.1.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	2
10RI.1.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	3
10RI.1.3	Analyze how the author constructs 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.	3

10RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone.	3
10RI.1.5	Analyze 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).	3
10RI.1.6	Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.	3
10RI.1.7	Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.	3
10RI.1.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.	3
10RI.1.9	Analyze seminal/primary documents of historical and literary significance, including how they address related themes and concepts.	3
10RI.1.10	By the end of the year, proficiently and independently read and comprehend informational texts and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 10.	2
10RI.2.0	Listening and Speaking Standards	
10RI.2.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, and presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections based on the evidence and reasoning presented.	3
10RI.2.2	Integrate multiple sources of information presented in diverse media and formats, evaluating the credibility and accuracy of each source.	3
10RI.2.3	Evaluate a speaker's point of view, reasoning, use of evidence, and use of rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.	3

10RI.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task; use appropriate eye contact, adequate volume, and clear pronunciation.	3
10RI.2.5	Make strategic use of digital media in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	3
10RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 10 Language standards 1 and 3 for specific expectations.)	2
10WL.0.0	Writing and Language Standards	
10WL.1.0	Writing Standards	
10WL.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. b. Develop 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. Use 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. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented.	3

10WL.1.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop 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. c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and an appropriate tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide 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).	3
10WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	3
10WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
10WL.1.5	Develop and strengthen 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. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 10.)	3
10WL.1.6	Use 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.	2

10WL.1.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	3
10WL.1.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.	3
10WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 10 Reading standards to literature. b. Apply grades 10 Reading standards to informational text and nonfiction.	3
10WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	4
10WL.2.0	Language Standards	
10WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Use parallel structure. b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, and absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.	2
10WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. b. Use a colon to introduce a list or quotation. c. Use correct spelling.	1
10WL.2.3	Apply 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. a. Write and edit work so that it conforms to the guidelines in a style manual.	2
10WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 10 reading and content, choosing flexibly from a range of strategies. a. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy). b. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. d. Verify the preliminary determination of the meaning of a word or phrase.	2
10WL.2.5	Demonstrate understanding of figurative language, word relationships,	2

	and nuances in word meanings. a. Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.	
10WL.2.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2

Table A.9  
Group Consensus  
AZ 2017 Language Arts, Grade 11

Level	Description	DOK
11RL.0.0	Reading Standards for Literature	
11RL.1.0	Reading Standards for Literature	
11RL.1.1	Cite 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.	3
11RL.1.2	Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.	3
11RL.1.3	Analyze the impact of the author's choices regarding how to develop and connect elements of a story or drama.	3
11RL.1.4	Determine the meaning(s) of words and phrases as they are used in a text, including figurative and connotative meanings, while analyzing the impact of specific choices on meaning and tone.	3
11RL.1.5	Analyze how an author's choices concerning how to structure specific parts of a text contribute to its overall structure and meaning, as well as its aesthetic impact.	3
11RL.1.6	Using a variety of genres, analyze how the narrative point of view impacts the implicit and explicit meanings in a text.	3
11RL.1.7	Analyze 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.	3
11RL.1.8	Drawing on a wide range of time periods, analyze how two or more texts treat similar themes or topics.	3
11RL.1.9	By the end of the year, proficiently and independently read and comprehend literature, including stories, dramas, and poetry, in a text complexity range determined by qualitative and quantitative measures appropriate to grade 11.	2
11RI.0.0	Reading, Speaking, and Listening Standards for Informational Text	
11RI.1.0	Reading Standards for Informational Text	
11RI.1.1	Cite 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.	3
11RI.1.2	Determine and analyze the development and interaction of two or more central ideas over the course of a text to provide a complex analysis or objective summary.	3
11RI.1.3	Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.	2



11RI.1.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text.	3
11RI.1.5	Analyze and evaluate the effectiveness of the author's choice of structural elements and text features.	3
11RI.1.6	Determine 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 effectiveness of the text.	3
11RI.1.7	Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in print in order to address a question or solve a problem.	3
11RI.1.8	Delineate and evaluate the rhetorical effectiveness of the authors' reasoning, premises, purpose, and argument in seminal U.S. and world texts.	3
11RI.1.9	Analyze foundational U.S. and world documents of historical and literary significance for their themes, purposes, and rhetorical features.	3
11RI.1.10	By the end of the year, proficiently and independently read and comprehend informational text and nonfiction in a text complexity range determined by qualitative and quantitative measures appropriate to grade 11.	2
11RI.2.0	Listening and Speaking Standards	
11RI.2.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 11 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.	3
11RI.2.2	Integrate multiple sources of information presented in diverse media and formats in order to make informed decisions and propose solutions, while evaluating the credibility and accuracy of each source and noting any discrepancies.	3
11RI.2.3	Evaluate a speaker's point of view, reasoning, use of evidence, and use of rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.	3
11RI.2.4	Present information, findings, and supporting evidence in an	3

	organized, developed style appropriate to purpose, audience, and task, allowing listeners to follow the speaker's line of reasoning, message, and any alternative perspectives.	
11RI.2.5	Make strategic use of digital media in presentations to enhance understanding of findings, reasoning, and evidence to keep the audience engaged.	3
11RI.2.6	Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grade 11 Language standards 1 and 3 for specific expectations.)	2
11WL.0.0	Writing and Language Standards	
11WL.1.0	Writing Standards	
11WL.1.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting, graphics, and multimedia when useful for comprehension. b. Develop 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. c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language, domain-specific vocabulary, and rhetorical techniques to manage the complexity of the topic. e. Establish and maintain a style and tone appropriate to the norms and conventions of the discipline in which they are writing. f. Provide 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).	3
11WL.1.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. a. Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b. Use narrative techniques to develop experiences, events, and/or characters. c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and particular tone and outcome. d. Use precise words and phrases, relevant descriptive details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	3

11WL.1.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)	3
11WL.1.5	Develop and strengthen 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. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 11.)	3
11WL.1.6	Use technology, including the internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	3
11WL.1.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	3
11WL.1.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate 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.	3
11WL.1.9	Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 11 Reading standards to literature. b. Apply grades 11 Reading standards to informational text and nonfiction.	3
11WL.1.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	4
11WL.2.0	Language Standards	
11WL.2.1	Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. a. Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested. b. Resolve issues of complex or contested usage, consulting references as needed.	2
11WL.2.2	Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing. a. Use hyphenation conventions. b. Use correct spelling.	1
11WL.2.3	Apply 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. a. Vary syntax for effect, consulting references for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.	2

11WL.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 11 reading and content, choosing flexibly from a range of strategies. a. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g. conceive, conception, conceivable). b. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage. d. Verify the preliminary determination of the meaning of a word or phrase.	2
11WL.2.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., hyperbole, paradox) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.	2
11WL.2.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	2



# Appendix B

## Arizona 2016 Mathematics Standards Grades 3-Algebra II

### Group Consensus DOK Values for Mathematics Standards Grades 3-Algebra II

December 8, 2017

Table B.1  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 3

Level	Description	DOK
3OBT.0.0	Operations, Algebraic Thinking, and Numbers in Base Ten	
3OBT.1.0	Operations and Algebraic Thinking (OA) Note: Grade 3 expectations in this domain are limited to whole number multiplication through $10 \times 10$ and whole number division with both quotients and divisors less than or equal to 10.	
3OBT.1.1	Represent and solve problems involving whole number multiplication and division. Interpret products of whole numbers as the total number of objects in equal groups (e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each).	1
3OBT.1.2	Represent and solve problems involving whole number multiplication and division. Interpret whole number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each group when 56 objects are partitioned equally into 8 groups, or as a number of groups when 56 objects are partitioned into equal groups of 8 objects each). See Table 2.	1
3OBT.1.3	Represent and solve problems involving whole number multiplication and division. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. See Table 2.	2
3OBT.1.4	Represent and solve problems involving whole number multiplication and division. Determine the unknown whole number in a multiplication or division equation relating three whole numbers For example, determine the unknown number that makes the equation true in each of the equations $8 \times \square = 48$ , $5 = \square \div 3$ , $6 \times 6 = \square$ . See Table 2.	1
3OBT.1.5	Understand properties of multiplication and the relationship between multiplication and division. Apply properties of operations as strategies to multiply and divide. Properties include commutative and associative properties of multiplication and the distributive property. (Students do not need to use the formal terms for these properties.)	2
3OBT.1.6	Understand properties of multiplication and the relationship between multiplication and division. Understand division as an unknown-factor problem (e.g., find $32 \div 8$ by finding the number that makes 32 when multiplied by 8).	1
3OBT.1.7	Multiply and divide within 100. Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through $10 \times 10$ and division quotients when both the quotient and divisor are less than or equal to 10.	1
3OBT.1.8	Solve problems involving the four operations, and identify and explain	2

	<p>patterns in arithmetic.</p> <p>Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.</p>	
3OBT.1.9	<p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p> <p>Identify patterns in the addition table and the multiplication table and explain them using properties of operations (e.g. observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends).</p>	2
3OBT.1.10	<p>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p> <p>When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	2
3OBT.2.0	Number and Operations in Base Ten (NBT)	
3OBT.2.1	Use place value understanding and properties of operations to perform multi-digit arithmetic. Use place value understanding to round whole numbers to the nearest 10 or 100. (Note: A range of algorithms may be used.)	1
3OBT.2.2	Use place value understanding and properties of operations to perform multi-digit arithmetic. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (Note: A range of algorithms may be used.)	1
3OBT.2.3	Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply one-digit whole numbers by multiples of 10 in the range 10 to 90 using strategies based on place value and the properties of operations (e.g., $9 \times 80$ , $5 \times 60$ ). (Note: A range of algorithms may be used.)	1
3NF.0.0	Number and Operations - Fractions	
3NF.1.0	Number and Operations - Fractions (NF) Note: Grade 3 expectations are limited to fractions with denominators: 2,3,4,6,8.	
3NF.1.1	Understand fractions as numbers. Understand a fraction ( $\frac{1}{b}$ ) as the quantity formed by one part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$ .	1



3NF.1.2	Understand fractions as numbers. Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into $b$ equal parts. Understand that each part has size $1/b$ and that the end point of the part based at 0 locates the number $1/b$ on the number line. b. Represent a fraction $a/b$ on a number line diagram by marking off a lengths $1/b$ from 0. Understand that the resulting interval has size $a/b$ and that its endpoint locates the number $a/b$ on the number line including values greater than 1. c. Understand a fraction $1/b$ as a special type of fraction that can be referred to as a unit fraction (e.g. $1/2$ , $1/4$ ).	2
3NF.1.3	Understand fractions as numbers. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent if they have the same relative size compared to 1 whole. b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Understand that comparisons are valid only when the two fractions refer to the same whole. Record results of comparisons with the symbols $>$ , $=$ , or $<$ , and justify conclusions.	2
3MDG.0.0	Measurement, Data, and Geometry	
3MDG.1.0	Measurement and Data (MD)	
3MDG.1.1	Solve problems involving measurement. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes (e.g., representing the problem on a number line diagram).	2
3MDG.1.2	Solve problems involving measurement. Solve word problems involving money through \$20.00, using symbols \$, ".", ¢.	2
3MDG.1.3	Solve problems involving measurement. Measure and estimate liquid volumes and masses of objects using metric units. (Excludes compound units such as $\text{cm}^3$ and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. Excludes multiplicative comparison problems (problems involving notions of "times as much"). See Table 2.	2
3MDG.1.4	Represent and interpret data. Create a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step how many more and how many less problems using information presented in scaled bar graphs. See Table 1.	2
3MDG.1.5	Represent and interpret data. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch to the nearest quarter-inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	2
3MDG.1.6	Geometric measurement: Understand concepts of area and perimeter.	1

	Understand area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by $n$ unit squares is said to have an area of $n$ square units.	
3MDG.1.7	Geometric measurement: Understand concepts of area and perimeter. Measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units).	1
3MDG.1.8	Geometric measurement: Understand concepts of area and perimeter. Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. c. Use tiling to show that the area of a rectangle with whole-number side lengths $a$ and $b + c$ is the sum of $a \times b$ and $a \times c$ . Use area models to represent the distributive property in mathematical reasoning. d. Understand that rectilinear figures can be decomposed into non-overlapping rectangles and that the sum of the areas of these rectangles is identical to the area of the original rectilinear figure. Apply this technique to solve problems in real-world contexts.	2
3MDG.1.9	Geometric measurement: Understand concepts of area and perimeter. Solve real-world and mathematical problems involving perimeters of plane figures and areas of rectangles, including finding the perimeter given the side lengths, finding an unknown side length. Represent rectangles with the same perimeter and different areas or with the same area and different perimeters.	2
3MDG.2.0	Geometry (G)	
3.G.A.1	Reason with shapes and their attributes. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples quadrilaterals that do not belong to any of these subcategories.	2
3.G.A.2	Reason with shapes and their attributes. Partition shapes into $b$ parts with equal areas. Express the area of each part as a unit fraction $1/b$ of the whole. (Grade 3 expectations are limited to fractions with denominators $b = 2, 3, 4, 6, 8$ .)	2

Table B.2  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 4

Level	Description	DOK
4OBT.0.0	Operations, Algebraic Thinking, and Numbers in Base Ten	
4OBT.1.0	Operations and Algebraic Thinking (OA)	
4OBT.1.1	Use the four operations with whole numbers to solve problems. Represent verbal statements of multiplicative comparisons as multiplication equations. Interpret a multiplication equation as a comparison (e.g., 35 is the number of objects in 5 groups, each containing 7 objects, and is also the number of objects in 7 groups, each containing 5 objects).	2
4OBT.1.2	Use the four operations with whole numbers to solve problems. Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison). See Table 2.	2
4OBT.1.3	Use the four operations with whole numbers to solve problems. Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity.	2
4OBT.1.4	Gain familiarity with factors and multiples. Find all factor pairs for a whole number in the range 1 to 100 and understand that a whole number is a multiple of each of its factors.	1
4OBT.1.5	Generate and analyze patterns. Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., given the rule “add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers).	2
4OBT.1.6	Generate and analyze patterns. When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.	2
4OBT.2.0	Number and Operations in Base Ten (NBT) (Note: Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)	
4OBT.2.1	Generalize place value understanding for multi-digit whole numbers. Apply concepts of place value, multiplication, and division to understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	1

4OBT.2.2	Generalize place value understanding for multi-digit whole numbers. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	1
4OBT.2.3	Generalize place value understanding for multi-digit whole numbers. Use place value understanding to round multi-digit whole numbers to any place.	1
4OBT.2.4	Use place value understanding and properties of operations to perform multi-digit arithmetic. Fluently add and subtract multi-digit whole numbers using a standard algorithm.	1
4OBT.2.5	Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	2
4OBT.2.6	Use place value understanding and properties of operations to perform multi-digit arithmetic. Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.	1
4NF.0.0	Number and Operations - Fractions	
4NF.1.0	Number and Operations - Fractions (NF) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)	
4NF.1.1	Extend understanding of fraction equivalence and ordering. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to understand and generate equivalent fractions.	2
4.NF.1.2	Extend understanding of fraction equivalence and ordering. Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction). a. Understand that comparisons are valid only when the two fractions refer to the same size whole. b. Record the results of comparisons with symbols $>$ , $=$ , or $<$ , and justify the conclusions.	2

4NF.1.3	Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers. Understand a fraction $a/b$ with $a > 1$ as a sum of unit fractions ( $1/b$ ). a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., $3/8 = 1/8 + 1/8 + 1/8$ ; $3/8 = 2/8 + 1/8$ ; $2 \frac{1}{8} = 1 + 1 + 1/8$ or $2 \frac{1}{8} = 8/8 + 8/8 + 1/8$ ). c. Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each mixed number with an equivalent fraction). d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	2
4NF.1.4	Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers. Build fractions from unit fractions. a. Understand a fraction $a/b$ as a multiple of a unit fraction $1/b$ . In general, $a/b = a \times 1/b$ . b. Understand a multiple of $1/b$ as a multiple of a unit fraction $1/b$ , and use this understanding to multiply a whole number by a fraction. In general, $n \times a/b = (n \times a)/b$ . c. Solve word problems involving multiplication of a whole number by a fraction. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?	2
4NF.1.5	Understand decimal notation for fractions, and compare decimal fractions. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 (tenths) and 100 (hundredths). For example, express $3/10$ as $30/100$ , and $3/10 + 4/100 = 34/100$ . (Note: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators, in general, is not a requirement at this grade.)	1
4NF.1.6	Understand decimal notation for fractions, and compare decimal fractions. Use decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths), and locate these decimals on a number line.	1
4NF.1.7	Understand decimal notation for fractions, and compare decimal fractions. Compare two decimals to hundredths by reasoning about their size. Understand that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , or $<$ .	2

4MDG.0.0	Measurement, Data, and Geometry	
4MDG.1.0	Measurement and Data (MD)	
4MDG.1.1	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. Know relative sizes of measurement units within one system of units which could include km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit and in a smaller unit in terms of a larger unit. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1,12), (2,24), (3,36).	1
4MDG.1.2	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale.	2
4MDG.1.3	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. Apply the area and perimeter formulas for rectangles in mathematical problems and problems in real-world contexts including problems with unknown side lengths. See Table 2.	2
4MDG.1.4	Represent and interpret data. Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	2
4MDG.1.5	Geometric measurement: Understand concepts of angle and measure angles. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles. b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	1
4MDG.1.6	Geometric measurement: Understand concepts of angle and measure angles. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	1

4MDG.1.7	Geometric measurement: Understand concepts of angle and measure angles. Understand angle measures as additive. (When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.) Solve addition and subtraction problems to find unknown angles on a diagram within mathematical problems as well as problems in real-world contexts.	2
4MDG.2.0	Geometry (G)	
4MDG.2.1	Draw and identify lines and angles, and classify shapes by properties of their lines and angles. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	1
4MDG.2.2	Draw and identify lines and angles, and classify shapes by properties of their lines and angles. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size (e.g., understand right triangles as a category, and identify right triangles).	1
4MDG.2.3	Draw and identify lines and angles, and classify shapes by properties of their lines and angles. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	1



Table B.3  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 5

Level	Description	DOK
5OBT.0.0	Operations, Algebraic Thinking, and Numbers in Base Ten	
5OBT.1.0	Operations and Algebraic Thinking (OA)	
5OBT.1.1	Write and interpret numerical expressions. Use parentheses and brackets in numerical expressions, and evaluate expressions with these symbols (Order of Operations).	1
5OBT.1.2	Write and interpret numerical expressions. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them (e.g., express the calculation add 8 and 7, then multiply by 2 as $2 \times (8 + 7)$ ). Recognize that $3 \times (18,932 + 921)$ is three times as large as $18,932 + 921$ , without having to calculate the indicated sum or product).	1
5OBT.1.3	Analyze patterns and relationships. Generate two numerical patterns using two given rules (e.g., generate terms in the resulting sequences). Identify and explain the apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane (e.g., given the rule add 3 and the starting number 0, and given the rule add 6 and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence).	2
5OBT.1.4	Analyze patterns and relationships. Understand primes have only two factors and decompose numbers into prime factors.	1
5OBT.2.0	Number and Operations in Base Ten (NBT)	
5OBT.2.1	Understand the place value system. Apply concepts of place value, multiplication, and division to understand that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.	1
5OBT.2.2	Understand the place value system. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.	1
5OBT.2.3	Understand the place value system. Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	1
5OBT.2.4	Understand the place value system. Use place value understanding to round decimals to any place.	1



5OBT.2.5	Perform operations with multi-digit whole numbers and with decimals to hundredths. Fluently multiply multi-digit whole numbers using a standard algorithm.	1
5OBT.2.6	Perform operations with multi-digit whole numbers and with decimals to hundredths. Apply and extend understanding of division to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	1
5OBT.2.7	Perform operations with multi-digit whole numbers and with decimals to hundredths. Add, subtract, multiply, and divide decimals to hundredths, connecting objects or drawings to strategies based on place value, properties of operations, and/or the relationship between operations. Relate the strategy to a written form.	2
5NF.0.0	Number and Operations - Fractions	
5NF.1.0	Number and Operations - Fractions (NF)	
5NF.1.1	Use equivalent fractions to add and subtract fractions. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators (e.g., $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$ ).	1
5NF.1.2	Use equivalent fractions to add and subtract fractions. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using a variety of representations, equations, and visual models to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers (e.g. recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$ , by observing that $\frac{3}{7} < \frac{1}{2}$ ).	2
5NF.1.3	Use previous understandings of multiplication and division to multiply and divide fractions. Interpret a fraction as the number that results from dividing the whole number numerator by the whole number denominator ( $\frac{a}{b} = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people, each person has a share of size $\frac{3}{4}$ . If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	2

5NF.1.4	Use previous understandings of multiplication and division to multiply and divide fractions. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number and a fraction by a fraction. a. Interpret the product $(a/b) \times q$ as a parts of a partition of $q$ into $b$ equal parts. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$ , and create a story context for this equation. b. Interpret the product of a fraction multiplied by a fraction $(a/b) \times (c/d)$ . Use a visual fraction model and create a story context for this equation. For example, use a visual fraction model to show $(2/3) \times (4/5) = 8/15$ , and create a story context for this equation. In general, $(a/b) \times (c/d) = ac/bd$ . c. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	2
5NF.1.5	Use previous understandings of multiplication and division to multiply and divide fractions. Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number; explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying $a/b$ by 1.	2
5NF.1.6	Use previous understandings of multiplication and division to multiply and divide fractions. Solve problems in real-world contexts involving multiplication of fractions, including mixed numbers, by using a variety of representations including equations and models.	2
5NF.1.7	Use previous understandings of multiplication and division to multiply and divide fractions. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. Use the relationship between multiplication and division to justify conclusions. b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$ , and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to justify conclusions (e.g., $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$ ). c. Solve problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, using a variety of representations.	2

5MDG.0.0	Measurement, Data, and Geometry	
5MDG.1.0	Measurement and Data (MD)	
5MDG.1.1	Convert like measurement units within a given measurement system. Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step, real-world problems.	2
5MDG.1.2	Represent and interpret data. Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	2
5MDG.1.3	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using $n$ unit cubes is said to have a volume of $n$ cubic units.	1
5MDG.1.4	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	2
5MDG.1.5	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition. Relate volume to the operations of multiplication and addition and solve mathematical problems and problems in real-world contexts involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes (e.g., to represent the associative property of multiplication). b. Understand and use the formulas $V = l \times w \times h$ and $V = B \times h$ , where in this case $B$ is the area of the base ( $B = l \times w$ ), for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve mathematical problems and problems in real-world contexts. c. Understand volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms, applying this technique to solve mathematical problems and problems in real-world contexts.	2

5MDG.2.0	Geometry (G)	
5MDG.2.1	Graph points on the coordinate plane to solve mathematical problems as well as problems in real-world context. Understand and describe a coordinate system as perpendicular number lines, called axes, that intersect at the origin (0 , 0). Identify a given point in the first quadrant of the coordinate plane using an ordered pair of numbers, called coordinates. Understand that the first number (x) indicates the distance traveled on the horizontal axis, and the second number (y) indicates the distance traveled on the vertical axis.	1
5MDG.2.2	Graph points on the coordinate plane to solve mathematical problems as well as problems in real-world context. Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	2
5MDG.2.3	Classify two-dimensional figures into categories based on their properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	2
5MDG.2.4	Classify two-dimensional figures into categories based on their properties. Classify two-dimensional figures in a hierarchy based on properties.	1

Table B.4  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 6

Level	Description	DOK
6RP.0.0	Ratio and Proportion	
6RP.1.0	Ratio and Proportion (RP)	
6RP.1.1	Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a ratio as comparing two quantities multiplicatively or joining/composing the two quantities in a way that preserves a multiplicative relationship. Use ratio language to describe a ratio relationship between two quantities. For example, "There were $\frac{2}{3}$ as many men as women at the concert."	2
6RP.1.2	Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a unit rate $\frac{a}{b}$ associated with a ratio $a : b$ with $b \neq 0$ , and use rate language (e.g., for every, for each, for each 1, per) in the context of a ratio relationship. (Complex fraction notation is not an expectation for unit rates in this grade level.)	2
6RP.1.3	Understand ratio concepts and use ratio reasoning to solve problems. Use ratio and rate reasoning to solve mathematical problems and problems in real-world context (e.g., by reasoning about data collected from measurements, tables of equivalent ratios, tape diagrams, double number line diagrams, or equations). a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity). Solve percent problems with the unknown in all positions of the equation. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	2
6NS.0.0	The Number System	
6NS.1.0	The Number System (NS) (Note: Limit negative rational numbers to integers and fractions with denominators of 2, 3, 4, 5, 10.)	
6NS.1.1	Apply and extend previous understanding of multiplication and division to divide fractions by fractions. Interpret and compute quotients of fractions to solve mathematical problems and problems in real-world context involving division of fractions by fractions using visual fraction models and equations to represent the problem. For example, create a story context for $\frac{2}{3} \div \frac{3}{4}$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $\frac{2}{3} \div \frac{3}{4} = \frac{8}{9}$ because $\frac{3}{4}$ of $\frac{8}{9}$ is $\frac{2}{3}$ . In general, $\frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$ .	2
6NS.1.2	Compute fluently with multi-digit numbers and find common factors and multiples. Fluently divide multi-digit numbers using a standard algorithm.	1
6NS.1.3	Compute fluently with multi-digit numbers and find common factors and multiples. Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.	1
6NS.1.4	Compute fluently with multi-digit numbers and find common factors and	2

	<p>multiples. Use previous understanding of factors to find the greatest common factor and the least common multiple. a. Find the greatest common factor of two whole numbers less than or equal to 100. b. Find the least common multiple of two whole numbers less than or equal to 12. c. Use the distributive property to express a sum of two whole numbers 1 to 100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express <math>36 + 8</math> as <math>4(9+2)</math>.</p>	
6NS.1.5	<p>Apply and extend previous understanding of numbers to the system of rational numbers. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real-world context, explaining the meaning of 0 in each situation.</p>	2
6NS.1.6	<p>Apply and extend previous understanding of numbers to the system of rational numbers. Understand a rational number can be represented as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>	1
6NS.1.7	<p>Apply and extend previous understanding of numbers to the system of rational numbers. Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line. b. Write, interpret, and explain statements of order for rational numbers in real-world context. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in real-world context. d. Distinguish comparisons of absolute value from statements about order in mathematical problems and problems in real-world context.</p>	2
6NS.1.8	<p>Apply and extend previous understanding of numbers to the system of rational numbers. Solve mathematical problems and problems in real-world context by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	2

6EE.0.0	Expressions and Equations	
6EE.1.0	Expressions and Equations (EE)	
6EE.1.1	Apply and extend previous understanding of arithmetic to algebraic expressions. Write and evaluate numerical expressions involving whole-number exponents.	1
6EE.1.2	Apply and extend previous understanding of arithmetic to algebraic expressions. Write, read, and evaluate algebraic expressions. a. Write expressions that record operations with numbers and variables. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, and coefficient); view one or more parts of an expression as a single entity. c. Evaluate expressions given specific values of their variables. Include expressions that arise from formulas used to solve mathematical problems and problems in real-world context. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	1
6EE.1.3	Apply and extend previous understanding of arithmetic to algebraic expressions. Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$ .	1
6EE.1.4	Apply and extend previous understanding of arithmetic to algebraic expressions. Identify when two expressions are equivalent. For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number $y$ stands for.	1
6EE.1.5	Reason about and solve one-variable equations and inequalities. Understand solving an equation or inequality as a process of reasoning to find the value(s) of the variables that make that equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	1
6EE.1.6	Reason about and solve one-variable equations and inequalities. Use variables to represent numbers and write expressions when solving mathematical problems and problems in real-world context; understand that a variable can represent an unknown number or any number in a specified set.	2
6EE.1.7	Reason about and solve one-variable equations and inequalities. Solve mathematical problems and problems in real-world context by writing and solving equations of the form $x + p = q$ , $x - p = q$ , $px = q$ , and $x/p = q$ for cases in which $p$ , $q$ and $x$ are all non-negative rational numbers.	2
6EE.1.8	Reason about and solve one-variable equations and inequalities. Write an inequality of the form $x > c$ , $x < c$ , $x \geq c$ , or $x \leq c$ to represent a constraint or condition to solve mathematical problems and problems in real-world context. Recognize that inequalities have infinitely many solutions; represent solutions of such inequalities on number lines.	2



6EE.1.9	Represent and analyze quantitative relationships between dependent and independent variables. Use variables to represent two quantities that change in relationship to one another to solve mathematical problems and problems in real-world context. Write an equation to express one quantity (the dependent variable) in terms of the other quantity (the independent variable). Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	3
6GS.0.0	Geometry, Statistics and Probability	
6GS.1.0	Geometry (G)	
6GS.1.1	Solve mathematical problems and problems in real-world context involving area, surface area, and volume. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques to solve mathematical problems and problems in real-world context.	2
6GS.1.2	Solve mathematical problems and problems in real-world context involving area, surface area, and volume. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Understand and use the formula $V = B \cdot h$ , where in this case, $B$ is the area of the base ( $B = l \times w$ ) to find volumes of right rectangular prisms with fractional edge lengths in mathematical problems and problems in real-world context.	2
6GS.1.3	Solve mathematical problems and problems in real-world context involving area, surface area, and volume. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques to solve mathematical problems and problems in a real-world context.	2
6GS.1.4	Solve mathematical problems and problems in real-world context involving area, surface area, and volume. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques to solve mathematical problems and problems in real-world context.	2
6GS.2.0	Statistics and Probability (SP)	
6GS.2.1	Develop understanding of statistical variability. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for variability in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	1



6GS.2.2	Develop understanding of statistical variability. Understand that a set of data collected to answer a statistical question has a distribution whose general characteristics can be described by its center, spread, and overall shape.	1
6GS.2.3	Develop understanding of statistical variability. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation uses a single number to describe the spread of the data set.	1
6GS.2.4	Summarize and describe distributions. Display and interpret numerical data by creating plots on a number line including histograms, dot plots, and box plots.	2
6GS.2.5	Summarize and describe distributions. Summarize numerical data sets in relation to their context by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	2

Table B.5  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 7

Level	Description	DOK
7RP.0.0	Ratio and Proportion	
7RP.1.0	Ratio and Proportion (RP)	
7RP.1.1	Analyze proportional relationships and use them to solve mathematical problems and problems in real-world context. Compute unit rates associated with ratios involving both simple and complex fractions, including ratios of quantities measured in like or different units.	1
7RP.1.2	Analyze proportional relationships and use them to solve mathematical problems and problems in real-world context. Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. For example, if total cost $t$ is proportional to the number $n$ of items purchased at a constant price $p$ , the relationship between the total cost and the number of items can be expressed as $t = pn$ . d. Explain what a point $(x, y)$ on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where $r$ is the unit rate.	2
7RP.1.3	Analyze proportional relationships and use them to solve mathematical problems and problems in real-world context. Use proportional relationships to solve multi-step ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error).	2
7NS.0.0	The Number System	
7NS.1.0	The Number System (NS)	
7NS.1.1	Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers except division by zero. Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. b. Understand $p + q$ as the number located a distance $ q $ from $p$ , in the positive or negative direction depending on whether $q$ is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world context. c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world context. d. Apply properties of operations as strategies to add and subtract rational numbers.	2
7NS.1.2	Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers except division by	2

	<p>zero. Multiply and divide integers and other rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world context. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing real-world context. c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to decimal form using long division; know that the decimal form of a rational number terminates in 0's or eventually repeats.</p>	
7NS.1.3	<p>Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers except division by zero. Solve mathematical problems and problems in real-world context involving the four operations with rational numbers. Computations with rational numbers extend the rules for manipulating fractions to complex fractions where <math>a/b \div c/d</math> when <math>a, b, c,</math> and <math>d</math> are all integers and <math>b, c,</math> and <math>d \neq 0</math>.</p>	2
7EE.0.0	Expressions and Equations	
7EE.1.0	Expressions and Equations (EE)	
7EE.1.1	<p>Use properties of operations to generate equivalent expressions. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p>	1
7EE.1.2	<p>Use properties of operations to generate equivalent expressions. Rewrite an expression in different forms, and understand the relationship between the different forms and their meanings in a problem context. For example, <math>a + 0.05a = 1.05a</math> means that increase by 5% is the same as multiply by 1.05.</p>	2
7EE.1.3	<p>Solve mathematical problems and problems in real-world context using numerical and algebraic expressions and equations. Solve multi-step mathematical problems and problems in real-world context posed with positive and negative rational numbers in any form. Convert between forms as appropriate and assess the reasonableness of answers. For example, If a woman making \$25 an hour gets a 10% raise, she will make an additional <math>1/10</math> of her salary an hour, or \$2.50, for a new salary of \$27.50 per hour.</p>	2

7EE.1.4	Solve mathematical problems and problems in real-world context using numerical and algebraic expressions and equations. Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. a. Solve word problems leading to equations of the form $px+q=r$ and $p(x+q)=r$ , where $p$ , $q$ , and $r$ are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. b. Solve word problems leading to inequalities of the form $px+q>r$ or $px+q<r$ , where $p$ , $q$ , and $r$ are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	2
7GS.0.0	Geometry, Statistics and Probability	
7GS.1.0	Geometry (G)	
7GS.1.1	Draw, construct, and describe geometrical figures, and describe the relationships between them. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	2
7GS.1.2	Draw, construct, and describe geometrical figures, and describe the relationships between them. Draw geometric shapes with given conditions using a variety of methods. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	2
7GS.1.3	Draw, construct, and describe geometrical figures, and describe the relationships between them. Describe the two-dimensional figures that result from slicing three-dimensional figures.	2
7GS.1.4	Solve mathematical problems and problems in real-world context involving angle measure, area, surface area, and volume. Understand and use the formulas for the area and circumference of a circle to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	2
7GS.1.5	Solve mathematical problems and problems in real-world context involving angle measure, area, surface area, and volume. Use facts about supplementary, complementary, vertical, and adjacent angles in multi-step problems to write and solve simple equations for an unknown angle in a figure.	2
7GS.1.6	Solve mathematical problems and problems in real-world context involving angle measure, area, surface area, and volume. Solve mathematical problems and problems in a real-world context involving area of two-dimensional objects composed of triangles, quadrilaterals, and other polygons. Solve mathematical problems and problems in real-world context involving volume and surface area of three-dimensional objects composed of cubes and right prisms.	2

7GS.2.0	Statistics and Probability (SP)	
7GS.2.1	Use random sampling to draw inferences about a population. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	2
7GS.2.2	Use random sampling to draw inferences about a population. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.	3
7GS.2.3	Draw informal comparative inferences about two populations. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.	2
7GS.2.4	Draw informal comparative inferences about two populations. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	2
7GS.2.5	Investigate chance processes and develop, use and evaluate probability models. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	1
7GS.2.6	Investigate chance processes and develop, use and evaluate probability models. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.	3

7GS.2.7	Investigate chance processes and develop, use and evaluate probability models. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies. If the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?	3
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Table B.6  
Group Consensus  
AZ 2016 Standards for Mathematics, Grade 8

Level	Description	DOK
8EE.0.0	Expressions and Equations	
8EE.1.0	Expressions and Equations (EE)	
8EE.1.1	Work with radicals and integer exponents. Understand and apply the properties of integer exponents to generate equivalent numerical expressions.	1
8EE.1.2	Work with radicals and integer exponents. Use 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. Know that $\sqrt{2}$ is irrational. a. Evaluate square roots of perfect squares less than or equal to 225. b. Evaluate cube roots of perfect cubes less than or equal to 1000.	1
8EE.1.3	Work with radicals and integer exponents. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and express how many times larger or smaller one is than the other.	2
8EE.1.4	Work with radicals and integer exponents. Perform operations with numbers expressed in scientific notation including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.	1
8EE.1.5	Understand the connections between proportional relationships, lines, and linear equations. Graph proportional relationships interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	2
8EE.1.6	Understand the connections between proportional relationships, lines, and linear equations. Use similar triangles to explain why the slope $m$ is the same between any two distinct points on a non-vertical line in the coordinate plane. Derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at $(0, b)$ .	2
8EE.1.7	Analyze and solve linear equations, inequalities, and pairs of simultaneous linear equations. Fluently solve linear equations and inequalities in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solution. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$ , $a = a$ , or $a = b$ results (where $a$ and $b$ are different numbers). b. Solve linear equations and inequalities with rational number coefficients, including solutions that require expanding expressions using the distributive property and collecting like terms.	2

8EE.1.8	Analyze and solve linear equations, inequalities, and pairs of simultaneous linear equations. Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations including cases of no solution and infinite number of solutions. Solve simple cases by inspection. c. Solve mathematical problems and problems in real-world context leading to two linear equations in two variables.	2
8F.0.0	Functions	
8F.1.0	Functions (F)	
8F.1.1	Define, evaluate, and compare functions. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.)	1
8F.1.2	Define, evaluate, and compare functions. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	2
8F.1.3	Define, evaluate, and compare functions. Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line; give examples of functions that are not linear. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4), and (3,9) which are not on a straight line.	2
8F.1.4	Use functions to model relationships between quantities. Given a description of a situation, generate a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or a graph. Track how the values of the two quantities change together. Interpret the rate of change and initial value of a linear function in terms of the situation it models, its graph, or its table of values.	3
8F.1.5	Use functions to model relationships between quantities. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	2



8G.0.0	Geometry	
8G.1.0	Geometry (G)	
8G.1.1	Understand congruence and similarity. Verify experimentally the properties of rotations, reflections, and translations. Properties include: lines are taken to lines, line segments are taken to line segments of the same length, angles are taken to angles of the same measure, parallel lines are taken to parallel lines.	2
8G.1.2	Understand congruence and similarity. Understand that a two-dimensional figure is congruent to another if one can be obtained from the other by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that demonstrates congruence.	2
8G.1.3	Understand congruence and similarity. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	2
8G.1.4	Understand congruence and similarity. Understand that a two-dimensional figure is similar to another if, and only if, one can be obtained from the other by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that demonstrates similarity.	2
8G.1.5	Understand congruence and similarity. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.	2
8G.1.6	Understand and apply the Pythagorean Theorem. Understand the Pythagorean Theorem and its converse.	2
8G.1.7	Understand and apply the Pythagorean Theorem. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world context and mathematical problems in two and three dimensions.	2
8G.1.8	Understand and apply the Pythagorean Theorem. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	1
8G.1.9	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. Understand and use formulas for volumes of cones, cylinders and spheres and use them to solve real-world context and mathematical problems.	2
8SN.0.0	Statistics, Probability, and the Number System	
8SN.1.0	Statistics and Probability (SP)	
8SN.1.1	Investigate patterns of association in bivariate data. Construct and interpret scatter plots for bivariate measurement data to investigate and describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	3

8SN.1.2	Investigate patterns of association in bivariate data. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	2
8SN.1.3	Investigate patterns of association in bivariate data. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	2
8SN.1.4	Investigate patterns of association in bivariate data. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	2
8SN.1.5	Investigate chance processes and develop, use, and evaluate probability models. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using organized lists, tables, tree diagrams and other methods. Identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events.	2
8SN.2.0	The Number System (NS)	
8SN.2.1	Understand that there are irrational numbers, and approximate them using rational numbers. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion. Know that numbers whose decimal expansions do not terminate in zeros or in a repeating sequence of fixed digits are called irrational.	1
8SN.2.2	Understand that there are irrational numbers, and approximate them using rational numbers. Use rational approximations of irrational numbers to compare the size of irrational numbers. Locate them approximately on a number line diagram, and estimate their values.	2
8SN.2.3	Understand that there are irrational numbers, and approximate them using rational numbers. Understand that given any two distinct rational numbers, $a < b$ , there exist a rational number $c$ and an irrational number $d$ such that $a < c < b$ and $a < d < b$ . Given any two distinct irrational numbers, $a < b$ , there exist a rational number $c$ and an irrational number $d$ such that $a < c < b$ and $a < d < b$ .	2

Table B.7  
Group Consensus  
AZ 2016 Standards for Algebra I

Level	Description	DOK
A1A.0.0	Algebra	
A1A.1.0	Seeing Structure in Expressions (A-SSE)	
A1A.1.1	Interpret the structure of expressions. Interpret expressions that represent a quantity in terms of its context. a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret expressions by viewing one or more of their parts as a single entity.	2
A1A.1.2	Interpret the structure of expressions. Use structure to identify ways to rewrite numerical and polynomial expressions. Focus on polynomial multiplication and factoring patterns.	2
A1A.1.3	Write expressions in equivalent forms to solve problems. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. a. Factor a quadratic expression to reveal the zeros of the function it defines. b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	2
A1A.2.0	Arithmetic with Polynomials and Rational Expressions (A-APR)	
A1A.2.1	Perform arithmetic operations on polynomials. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	1
A1A.2.2	Understand the relationship between zeros and factors of polynomials. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. Focus on quadratic and cubic polynomials in which linear and quadratic factors are available.	2
A1A.3.0	Creating Equations (A-CED)	
A1A.3.1	Create equations that describe numbers or relationships. Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1A.3.2	Create equations that describe numbers or relationships. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	2
A1A.3.3	Create equations that describe numbers or relationships. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.	3
A1A.3.4	Create equations that describe numbers or relationships. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance $R$ .	1
A1A.4.0	Reasoning with Equations and Inequalities (A-REI)	

A1 A.4.1	Understand solving equations as a process of reasoning and explain the reasoning. Explain each step in solving linear and quadratic equations as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	2
A1 A.4.2	Solve equations and inequalities in one variable. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	1
A1 A.4.3	Solve equations and inequalities in one variable. Solve quadratic equations in one variable. a. Use the method of completing the square to transform any quadratic equation in $x$ into an equation of the form $(x - k)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. b. Solve quadratic equations by inspection (e.g., $x^2 = 49$ ), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Focus on solutions for quadratic equations that have real roots. Include cases that recognize when a quadratic equation has no real solutions.	2
A1 A.4.4	Solve systems of equations. Prove 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.	2
A1 A.4.5	Solve systems of equations. Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables. Include problem solving opportunities utilizing real-world context.	2
A1 A.4.6	Represent and solve equations and inequalities graphically. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve, which could be a line.	1
A1 A.4.7	Represent and solve equations and inequalities graphically. Explain why the $x$ -coordinates of the points where the graphs of the equations $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$ ; find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations). Focus on cases where $f(x)$ and/or $g(x)$ are linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1 A.4.8	Represent and solve equations and inequalities graphically. Graph the solutions to a linear inequality in two variables as a half-plane, excluding the boundary in the case of a strict inequality, and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	1

A1F.0.0	Functions	
A1F.1.0	Interpreting Functions (F-IF)	
A1F.1.1	Understand the concept of a function and use function notation. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$ . The graph of $f$ is the graph of the equation $y = f(x)$ .	1
A1F.1.2	Understand the concept of a function and use function notation. Evaluate a function for inputs in the domain, and interpret statements that use function notation in terms of a context.	2
A1F.1.3	Understand the concept of a function and use function notation. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	1
A1F.1.4	Interpret functions that arise in applications in terms of the context. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Include problem-solving opportunities utilizing real-world context. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.1.5	Interpret functions that arise in applications in terms of the context. Interpret functions that arise in applications in terms of the context. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	2
A1F.1.6	Interpret functions that arise in applications in terms of the context. Calculate and interpret the average rate of change of a continuous function (presented symbolically or as a table) on a closed interval. Estimate the rate of change from a graph. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.1.7	Analyze functions using different representations. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.1.8	Analyze functions using different representations. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the process of factoring and completing the square of a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	2

A1F.1.9	Analyze functions using different representations. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.2.0	Building Functions (F-BF)	
A1F.2.1	Build a function that models a relationship between two quantities. Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.2.2	Build new functions from existing functions. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , $k f(x)$ , and $f(x+k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).	2
A1F.3.0	Linear, Quadratic, and Exponential Models (F-LE)	
A1F.3.1	Construct and compare linear, quadratic, and exponential models and solve problems. Distinguish between situations that can be modeled with linear functions and with exponential functions. a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	3
A1F.3.2	Construct and compare linear, quadratic, and exponential models and solve problems. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or input/output pairs.	2
A1F.3.3	Construct and compare linear, quadratic, and exponential models and solve problems. Observe, using graphs and tables, that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.	1
A1F.3.4	Interpret expressions for functions in terms of the situation they model. Interpret the parameters in a linear or exponential function with integer exponents utilizing real world context.	2
A1SQ.0.0	Statistics and Quantitative Reasoning	
A1SQ.1.0	Summarize, represent, and interpret data on a single count or measurement variable. (S-ID)	
A1SQ.1.1	Summarize, represent, and interpret data on a single count or measurement variable. Represent real-value data with plots for the purpose of comparing two or more data sets.	2
A1SQ.1.2	Summarize, represent, and interpret data on a single count or measurement variable. Use statistics appropriate to the shape of the	2

	data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	
A1SQ.1.3	Summarize, represent, and interpret data on a single count or measurement variable. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of outliers if present.	3
A1SQ.1.4	Summarize, represent, and interpret data on two categorical and quantitative variables. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data, including joint, marginal, and conditional relative frequencies. Recognize possible associations and trends in the data.	3
A1SQ.1.5	Summarize, represent, and interpret data on two categorical and quantitative variables. Represent data on two quantitative variables on a scatter plot, and describe how the quantities are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Focus on linear models. b. Informally assess the fit of a function by plotting and analyzing residuals.	2
A1SQ.1.6	Interpret linear models. Interpret the slope as a rate of change and the constant term of a linear model in the context of the data.	2
A1SQ.1.7	Interpret linear models. Compute and interpret the correlation coefficient of a linear relationship.	2
A1SQ.1.8	Interpret linear models. Distinguish between correlation and causation.	1
A1SQ.2.0	Conditional Probability and the rules of Probability (S-CP)	
A1SQ.2.1	Understand independence and conditional probability and use them to interpret data. Describe events as subsets of a sample space using characteristics of the outcomes, or as unions, intersections, or complements of other events.	2
A1SQ.2.2	Understand independence and conditional probability and use them to interpret data. Use the Multiplication Rule for independent events to understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.	2
A1SQ.3.0	The Real Number System (N-RN)	
A1SQ.3.1	Use properties of rational and irrational numbers. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	2
A1SQ.3.2	Reason quantitatively and use units to solve problems. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays, include utilizing real-world context.	2



A1SQ.3.3	Reason quantitatively and use units to solve problems. Define appropriate quantities for the purpose of descriptive modeling. Include problem-solving opportunities utilizing real-world context.	2
A1SQ.3.4	Reason quantitatively and use units to solve problems. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities utilizing real-world context.	2



Table A.8  
Group Consensus  
AZ 2016 Standards for Geometry

Level	Description	DOK
GCO.0.0	Congruence	
GCO.1.0	Congruence (G-CO)	
GCO.1.1	Experiment with transformations in the plane. Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	1
GCO.1.2	Experiment with transformations in the plane. Represent and describe transformations in the plane as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not.	2
GCO.1.3	Experiment with transformations in the plane. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	2
GCO.1.4	Experiment with transformations in the plane. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	3
GCO.1.5	Experiment with transformations in the plane. Given a geometric figure and a rotation, reflection, or translation draw the transformed figure. Specify a sequence of transformations that will carry a given figure onto another.	2
GCO.1.6	Understand congruence in terms of rigid motions. Use geometric definitions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	2
GCO.1.7	Understand congruence in terms of rigid motions. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	2
GCO.1.8	Understand congruence in terms of rigid motions. Explain how the criteria for triangle congruence (ASA, AAS, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	2
GCO.1.9	Prove geometric theorems. Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	3

GCO.1.10	Prove geometric theorems. Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to $180^\circ$ ; base angles of isosceles triangle 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.	3
GCO.1.11	Prove geometric theorems. Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and rectangles are parallelograms with congruent diagonals.	3
GCO.1.12	Make geometric constructions. Make formal geometric constructions with a variety of tools and methods. Constructions include: copying segments; copying angles; bisecting segments; bisecting angles; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	2
GCO.1.13	Make geometric constructions. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle; with a variety of tools and methods.	3
GSRT.0.0	Similarity, Right Triangles, and Trigonometry	
GSRT.1.0	Similarity, Right Triangles, and Trigonometry (G-SRT)	
GSRT.1.1	Understand similarity in terms of similarity transformations. Verify experimentally the properties of dilations given by a center and a scale factor: a. Dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	3
GSRT.1.2	Understand similarity in terms of similarity transformations. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	2
GSRT.1.3	Understand similarity in terms of similarity transformations. Use the properties of similarity transformations to establish the AA, SAS, and SSS criterion for two triangles to be similar.	2
GSRT.1.4	Prove theorems involving similarity. Prove theorems about triangles. Theorems include: an interior line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	3
GSRT.1.5	Prove theorems involving similarity. Use congruence and similarity criteria to prove relationships in geometric figures and solve problems utilizing real-world context.	3
GSRT.1.6	Define trigonometric ratios and solve problems involving right triangles. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	2
GSRT.1.7	Define trigonometric ratios and solve problems involving right triangles.	2

	Explain and use the relationship between the sine and cosine of complementary angles.	
GSRT.1.8	Define trigonometric ratios and solve problems involving right triangles. Use trigonometric ratios (including inverse trigonometric ratios) and the Pythagorean Theorem to find unknown measurements in right triangles utilizing real-world context.	2
GCGM.0.0	Circles and Geometric Measurement	
GCGM.1.0	Circles (G-C)	
GCGM.1.1	Understand and apply theorems about circles. Prove that all circles are similar.	2
GCGM.1.2	Understand and apply theorems about circles. Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	2
GCGM.1.3	Understand and apply theorems about circles. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	3
GCGM.1.4	Find arc lengths and areas of sectors of circles. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. Convert between degrees and radians.	2
GCGM.2.0	Geometric Measurement and Dimension (G-GMD)	
GCGM.2.1	Explain volume formulas and use them to solve problems. Analyze and verify the formulas for the volume of a cylinder, pyramid, and cone.	2
GCGM.2.2	Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems utilizing real-world context.	2
GCGM.2.3	Visualize relationships between two-dimensional and three-dimensional objects. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	2
GCGM.3.0	Quantities (N-Q)	
GCGM.3.1	Reason quantitatively and use units to solve problems. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays, include utilizing real-world context.	2
GCGM.3.2	Reason quantitatively and use units to solve problems. Define appropriate quantities for the purpose of descriptive modeling. Include problem-solving opportunities utilizing real-world context.	2

GCGM.3.3	Reason quantitatively and use units to solve problems. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities utilizing real-world context.	2
GCGM.4.0	Modeling with Geometry (G-MG)	
GCGM.4.1	Apply geometric concepts in modeling situations. Use geometric shapes, their measures, and their properties to describe objects utilizing real-world context.	2
GCGM.4.2	Apply geometric concepts in modeling situations. Apply concepts of density based on area and volume in modeling situations utilizing real-world context.	2
GCGM.4.3	Apply geometric concepts in modeling situations. Apply geometric methods to solve design problems utilizing real-world context.	4
GGP.0.0	Geometric Properties with Equations	
GGP.1.0	Expressing Geometric Properties with Equations (G-GPE)	
GGGP.1.1	Translate between the geometric description and the equation for a conic section. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	2
GGGP.1.2	Use coordinates to prove geometric theorems algebraically. Use coordinates to algebraically prove or disprove geometric relationships. Relationships include: proving or disproving geometric figures given specific points in the coordinate plane; and proving or disproving if a specific point lies on a given circle.	3
GGGP.1.3	Use coordinates to prove geometric theorems algebraically. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems, including finding the equation of a line parallel or perpendicular to a given line that passes through a given point.	2
GGGP.1.4	Use coordinates to prove geometric theorems algebraically. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	2
GGGP.1.5	Use coordinates to prove geometric theorems algebraically. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles.	1

Table B.9  
Group Consensus  
AZ 2016 Standards for Algebra II

Level	Description	DOK
A2A.0.0	Algebra	
A2A.1.0	Seeing Structure in Expressions (A-SSE)	
A2A.1.1	Interpret the structure of expressions. Use structure to identify ways to rewrite polynomial and rational expressions. Focus on polynomial operations and factoring patterns.	2
A2A.1.2	Write expressions in equivalent forms to solve problems. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Include problem-solving opportunities utilizing real-world context and focus on expressions with rational exponents. a. Use the properties of exponents to transform expressions for exponential functions.	2
A2A.1.3	Write expressions in equivalent forms to solve problems. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.	3
A2A.2.0	Arithmetic with Polynomials and Rational Expressions (A-APR)	
A2A.2.1	Understand the relationship between zeros and factors of polynomials. Know and apply the Remainder and Factor Theorem: For a polynomial $p(x)$ and a number $a$ , the remainder on division by $(x - a)$ is $p(a)$ , so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$ .	2
A2A.2.2	Understand the relationship between zeros and factors of polynomials. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. Focus on quadratic, cubic, and quartic polynomial including polynomials for which factors are not provided	2
A2A.2.3	Use polynomial identities to solve problems. Prove polynomial identities and use them to describe numerical relationships.	3
A2A.2.4	Rewrite rational expressions. Rewrite rational expressions in different forms; write $a(x)/b(x)$ 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 $b(x)$ , using inspection, long division, or for the more complicated examples, a computer algebra system.	1
A2A.3.0	Creating Equations (A-CED)	
A2A.3.1	Create equations that describe numbers or relationships. Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on equations and inequalities arising from linear, quadratic, rational, and exponential functions.	2

A2A.4.0	Reasoning with Equations and Inequalities (A-REI)	
A2A.4.1	Understand solving equations as a process of reasoning and explain the reasoning. Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. Extend from quadratic equations to rational and radical equations.	2
A2A.4.2	Understand solving equations as a process of reasoning and explain the reasoning. Solve rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	2
A2A.4.3	Solve equations and inequalities in one variable. Fluently solve quadratic equations in one variable. Solve 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. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers $a$ and $b$ .	1
A2A.4.4	Solve systems of equations. Solve a system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$ .	2
A2A.4.5	Represent and solve equations and inequalities graphically. Explain why the $x$ -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$ ; find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations). Include problems in real-world context. Extend from linear, quadratic, and exponential functions to cases where $f(x)$ and/or $g(x)$ are polynomial, rational, exponential, and logarithmic functions.	2
A2F.0.0	Functions	
A2F.1.0	Interpreting Functions (F-IF)	
A2F.1.1	Interpret functions that arise in applications in terms of the context. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Include problem-solving opportunities utilizing a real-world context. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.	2

A2F.1.2	Interpret functions that arise in applications in terms of the context. Calculate and interpret the average rate of change of a continuous function (presented symbolically or as a table) on a closed interval. Estimate the rate of change from a graph. Include problem-solving opportunities utilizing real-world context. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.	2
A2F.1.3	Analyze functions using different representations. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.	2
A2F.1.4	Analyze functions using different representations. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the properties of exponents to interpret expressions for exponential functions and classify those functions as exponential growth or decay.	2
A2F.1.5	Analyze functions using different representations. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.	2
A2F.2.0	Building Functions (F-BF)	
A2F.2.1	Build a function that models a relationship between two quantities. Write a function that describes a relationship between two quantities. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions. Include problem-solving opportunities utilizing real-world context. a. Determine an explicit expression, a recursive process, or steps for calculation from a context. b. Combine function types using arithmetic operations and function composition.	2
A2F.2.2	Build a function that models a relationship between two quantities. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	2
A2F.2.3	Build new functions from existing functions. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x+k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.	2



A2F.2.4	Build new functions from existing functions. Find inverse functions. a. Understand that an inverse function can be obtained by expressing the dependent variable of one function as the independent variable of another, recognizing that functions $f$ and $g$ are inverse functions if and only if $f(x) = y$ and $g(y) = x$ for all values of $x$ in the domain of $f$ and all values of $y$ in the domain of $g$ . b. Understand that if a function contains a point $(a,b)$ , then the graph of the inverse relation of the function contains the point $(b,a)$ . c. Interpret the meaning of and relationship between a function and its inverse utilizing real-world context.	2
A2F.3.0	Linear, Quadratic, and Exponential Models (F-LE)	
A2F.3.1	Construct and compare linear, quadratic, and exponential models and solve problems. For exponential models, express as a logarithm the solution to $abct = d$ where $a$ , $c$ , and $d$ are numbers and the base $b$ is 2, 10, or $e$ ; evaluate the logarithms that are not readily found by hand or observation using technology.	2
A2F.3.2	Interpret expressions for functions in terms of the situation they model. Interpret the parameters in an exponential function with rational exponents utilizing real-world context.	2
A2F.4.0	Trigonometric Functions (F-TF)	
A2F.4.1	Extend the domain of trigonometric functions using the unit circle. Understand radian measure of an angle as the length of the arc on any circle subtended by the angle, measured in units of the circle's radius.	1
A2F.4.2	Extend the domain of trigonometric functions using the unit circle. Explain how the unit circle in the coordinate plane enables the extension of sine and cosine functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	2
A2F.4.3	Model periodic phenomena with trigonometric functions. Create and interpret sine, cosine and tangent functions that model periodic phenomena with specified amplitude, frequency, and midline.	2
A2F.4.4	Apply trigonometric identities. Use the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and the quadrant of the angle $\theta$ to find $\sin(\theta)$ , $\cos(\theta)$ , or $\tan(\theta)$ given $\sin(\theta)$ or $\cos(\theta)$ .	2
A2SQ.0.0	Statistics and Quantitative Reasoning	
A2SQ.1.0	Interpreting Categorical and Quantitative Data (S-ID)	
A2SQ.1.1	Summarize, represent, and interpret data on a single count or measurement variable. Use the mean and standard deviation of a data set to fit it to a normal curve, and use properties of the normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, or tables to estimate areas under the normal curve.	2



A2SQ.1.2	Summarize, represent, and interpret data on two categorical and quantitative variables. Represent data of two quantitative variables on a scatter plot, and describe how the quantities are related. Extend to polynomial and exponential models. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or chooses a function suggested by the context.	2
A2SQ.1.3	Interpret models. Interpret parameters of exponential models.	2
A2SQ.2.0	Making Inferences and Justifying Conclusions (S-IC)	
A2SQ.2.1	Understand and evaluate random processes underlying statistical experiments. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	1
A2SQ.2.2	Understand and evaluate random processes underlying statistical experiments. Explain whether a specified model is consistent with results from a given data-generating process.	2
A2SQ.2.3	Make inferences and justify conclusions from experiments, and observational studies. Recognize the purposes of and differences between designed experiments, sample surveys and observational studies.	2
A2SQ.2.4	Make inferences and justify conclusions from experiments, and observational studies. Use data from a sample survey to estimate a population mean or proportion; recognize that estimates are unlikely to be correct and the estimates will be more precise with larger sample sizes.	2
A2SQ.3.0	Conditional Probability and the Rules of Probability (S-CP)	
A2SQ.3.1	Understand independence and conditional probability and use them to interpret data. Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$ , and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	2
A2SQ.3.2	Understand independence and conditional probability and use them to interpret data. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.	2
A2SQ.3.3	Understand independence and conditional probability and use them to interpret data. Recognize and explain the concepts of conditional probability and independence utilizing real-world context.	2
A2SQ.3.4	Use the rules of probability to compute probabilities of compound events in a uniform probability model. Use Bayes Rule to find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	2

A2SQ.3.5	Use the rules of probability to compute probabilities of compound events in a uniform probability model. Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ , and interpret the answer in terms of the model.	2
A2SQ.3.6	Use the rules of probability to compute probabilities of compound events in a uniform probability model. Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$ , and interpret the answer in terms of the model.	2
A2SQ.4.0	The Real Number System (N-RN)	
A2SQ.4.1	Extend the properties of exponents to rational exponents. Explain how the definition of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.	2
A2SQ.4.2	Extend the properties of exponents to rational exponents. Rewrite expressions involving radicals and rational exponents using the properties of exponents.	1
A2SQ.5.0	Quantities (N-Q)	
A2SQ.5.1	Reason quantitatively and use units to solve problems. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays, include utilizing real-world context.	2
A2SQ.5.2	Reason quantitatively and use units to solve problems. Define appropriate quantities for the purpose of descriptive modeling. Include problem-solving opportunities utilizing real-world context.	2
A2SQ.5.3	Reason quantitatively and use units to solve problems. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities utilizing real-world context.	2
A2SQ.6.0	The Complex Number System (N - CN)	
A2SQ.6.1	Perform arithmetic operations with complex numbers. Apply the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. Write complex numbers in the form $(a+bi)$ with $a$ and $b$ real.	1
A2SQ.6.2	Use complex numbers in polynomial identities and equations. Solve quadratic equations with real coefficients that have complex solutions.	1



# Appendix C

## Data Analysis Tables

### Alignment Analysis of the 2017 Statewide Achievement Assessment for English Language Arts and Mathematics (AzMERIT) and 2016 ELA State Standards, Grades 3-11 and 2016 Mathematics Standards, Grades 3-Algebra II

December 8, 2017

## Brief Explanation of Data in the Alignment Tables by Column

The tables numbers within this appendix are formatted as *Grade of test.Table-type*. Also note that for the purposes of numbering of tables, the End-of-Course mathematics tests are numbered as Algebra I EOC = grade 9, Geometry EOC = grade 10, and Algebra II EOC = grade 11.

### Tables *grade.1*

#### Reporting Category

Cluster #	Number of clusters for each Reporting Category
Standards #	Average number of standards for reviewers. If the number is greater than the actual number in the standard, then at least one reviewer coded an item for the cluster or Reporting Category but did not find any standard in the cluster that corresponded to the item.

#### Level by Standards

Level	The Depth-of-Knowledge level coded by the reviewers for the standards for Reporting Category.
# of standards by Level	The number of standards coded at each DOK level
% w/in RC by Level	The percent of standards coded at each DOK level

#### Objective Hits

Mean & SD	Mean and standard deviation number of items reviewers coded as corresponding to standard. The total is the total number of coded hits.
-----------	--

#### Categorical Concurrence

“Yes” indicates that the standard met the acceptable level for criterion.  
 “Yes” if mean is six or more.  
 “Weak” if mean is five to six.  
 “No” if mean is less than five.

### Tables *grade.2*

First five columns repeat columns from Table type 1.

#### DOK Level of Item

% Under & SD	Mean percent and standard deviation of items coded as “under” the Depth-of-Knowledge level of the corresponding standard.
% At & SD	Mean percent and standard deviation of items coded as “at” (the same) the Depth-of-Knowledge level of the corresponding standard.
% Above & SD	Mean percent and standard deviation of items coded as “above” the Depth-of-Knowledge level of the corresponding standard.

#### DOK Consistency

“Yes” indicates that 50% or more of the items were rated as “at” or “above” the Depth-of-Knowledge level of the corresponding standards.

“Weak” indicates that 40% to 50% of the items were rated as “at” or “above” the Depth-of-Knowledge level of the corresponding standards.

“No” indicates that less than 40% items were rated as “at” or “above” the Depth-of-Knowledge level of the corresponding standards.

### Tables *grade.3*

First five columns repeat columns from Tables type 1 and 2.

#### Range of Reporting Category

# Stds Hit

Average number and standard deviation of the standards hit coded by reviewers.

% of Total

Average percent and standard deviation of the total standards that had at least one item coded.

#### Range of Know

“Yes” indicates that 50% or more of the standards had at least one coded standard.

“Weak” indicates that 40% to 50% of the standards had at least one coded standard.

“No” indicates that 40% or less of the standards had at least one coded standard.

#### Balance of Representation

% of Hits of Total Hits

Average and standard deviation of the percent of the items hit for a standard of total number of hits (see total under the Hits column).

#### Balance Index

Average and standard deviation of the Balance Index.

Note: BALANCE INDEX  $1 - (\sum_{k=1} | 1/(O) - I_{(k)} / (H) | ) / 2$

Where O = Total number of standards hit for the standard

$I_{(k)}$  = Number of items hit corresponding to standard (k)

H = Total number of items hit for the standard

#### Bal of Rep

“Yes” indicates that the Balance Index was .7 or above (items evenly distributed among standards).

“Weak” indicates that the Balance Index was .6 to .7 (a high percentage of items coded as corresponding to two or three standards).

“No” indicates that the Balance Index was .6 or less (a high percentage of items coded as corresponding to one standard.)

### Tables *grade.4*

Summary of whether each reporting category met the acceptable level for the four criteria by each standard.

Tables *grade.5*

The DOK value for each assessment item given by each reviewer. The intraclass correlation for the group of reviewers is given on the last row.

Tables *grade.6*

The DOK level and standard code assigned by each reviewer for each item.

Tables *grade.7*

This list for each item all of the standards coded by the group of reviewers as corresponding to the item. Repeat of a standard indicates the number of reviewers who coded that standard as corresponding to the item.

Tables *grade.8*

This lists for each standard all of the items coded by the group of reviewers as corresponding to the standard. Repeat of an item indicates the number of reviewers who coded the item as corresponding to the standard.

Tables *grade .9*

This table can be used to compare approximately the DOK level of a standard to the average DOK level of the items reviewers assigned to the standard. This table is helpful to identify items with a lower DOK level that should be replaced by an item with a higher DOK level to improve the Depth-of-Knowledge Consistency. The DOK listed in the table for each item is generally the mode DOK for that item.

# AzMERIT ELA Assessment

## ELA Grade 3

Table 3.1a

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Paper*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
3RL.0.0 Reading and Foundation...	2	11	1 2 3	1 7 3	9.09 63.64 27.27	18.5	1.87	YES
3RI.0.0 Reading, Speaking, and...	2	16	1 2 3	1 9 6	6.25 56.25 37.5	15.67	0.82	YES
3WL.0.0 Writing and Language ...	3	17	1 2 3 4	3 7 6 1	17.65 41.18 35.29 5.88	23.67	7.74	YES
Total	7	44	1 2 3 4	5 23 15 1	11 52 34 2	57.84	7.19	

Table 3.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
3RL.0.0 Reading and Foundation...	2	11	18.5	1.87	25.71	10	62.61	9	11.68	4	YES
3RI.0.0 Reading, Speaking, and...	2	16	15.67	0.82	33.18	11	66.82	11	0	0	YES
3WL.0.0 Writing and Language ...	3	17	23.67	7.74	30.18	12	53.37	16	16.44	18	YES
Total	7	44	57.84	7.19	28.53	8.1	60.81	9.9	10.66	8.3	
NT = Not Tested											



*Table 3.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit	% of Total								
Title	Cluster#	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
3RL.0.0 Reading and Foundation...	2	11	18.5	1.87	7.5	0.84	68.18	7.61	YES	42	5	0.8	0.02	YES
3RI.0.0 Reading, Speaking, and...	2	16	15.67	0.82	7.5	0.84	46.88	5.23	WEAK	36	3	0.75	0.06	YES
3WL.0.0 Writing and Language ...	3	17	23.67	7.74	3.67	1.21	21.57	7.12	NO	22	5	0.68	0.18	WEAK
Total	7	44	57.84	7.19	6.2	2.21	45.54	23		33	10	0.74	0.04	

*Table 3.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Paper*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
3RL.0.0 Reading and Foundation...	YES	YES	YES	YES
3RI.0.0 Reading, Speaking, and...	YES	YES	WEAK	YES
3WL.0.0 Writing and Language ...	YES	YES	NO	WEAK

a

Table 3.5a

*Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 3 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	2	2	2	2	2	2
2	2	2	2	2	2	2
3	2	2	2	2	1	2
4	2	2	2	2	2	2
5	2	2	2	2	2	2
6	1	1	1	2	1	2
7	1	2	2	2	2	2
8	1	1	1	1	2	2
9	1	1	1	1	1	2
10	1	1	2	2	2	2
11	2	2	2	2	2	2
12	2	3	2	2	2	3
13	2	2	2	2	2	2
14	3	2	2	3	3	3
15	2	2	3	2	2	3
16	3	2	3	2	3	3
17	3	2	3	2	3	3
18	2	2	2	3	2	2
19	2	2	2	2	2	2
20	1	1	1	1	1	1
21	1	1	1	1	1	1
22	1	1	1	1	1	1
23	3	3	3	3	3	3
24	2	2	2	2	2	2
25	2	3	2	2	2	3
26	2	3	3	2	2	3
27	1	2	2	2	1	2
28	2	2	2	2	2	2
29	2	3	3	2	3	3
30	3	2	3	3	2	3
31	2	2	2	2	2	2
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	1	2	2	2	2	2
36	2	2	1	2	2	2
37	2	2	2	2	2	2
38	2	2	2	2	2	2
39	1	1	1	1	1	1
40	1	1	1	1	1	2
41	1	1	1	1	1	2
42	3	3	3	3	3	3

*Intraclass correlation - .9505*

*Pairwise Comparison - 0.77*

Table 3.6a  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 3 Paper*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7		
2	2	3RL.1.3			2	3RL.1.3			2	3RL.1.3			2	3RL.1.4			2	3RL.1.3			2	3RL.1.3		
3	2	3RL.1.6			2	3RL.1.6			2	3RL.1.6			2	3RL.1.1			1	3RL.1.6			2	3RL.1.6		
4	2	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
5	2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5		
6	1	3RL.1.1			1	3RL.1.1			1	3RL.1.1			2	3RL.1.1			1	3RL.1.1			2	3RL.1.3		
7	1	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2		
8	1	3RL.1.1			1	3RL.1.1			1	3RL.1.1			1	3RL.1.1			2	3RL.1.1			2	3RL.1.2		
9	1	3RL.1.1			1	3RL.1.3			1	3RL.1.1			1	3RL.1.7			1	3RL.1.1			2	3RL.1.1		
10	1	3RL.1.1			1	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1		
11	2	3RL.1.4			2	3RL.1.4	3WL.3.4		2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
12	2	3RL.1.7			3	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			3	3RL.1.7		
13	2	3RL.1.5			2	3RL.1.2			2	3RL.1.2			2	3RL.1.1			2	3RL.1.2			2	3RL.1.2		
14	3	3RL.1.9			2	3RL.1.1			2	3RL.1.9			3	3RL.1.9			3	3RL.1.9			3	3RL.1.9		
15	2	3RL.1.7			2	3RL.1.7			3	3RL.1.7			2	3RL.1.7			2	3RL.1.7			3	3RL.1.7		
16	3	3RL.1.3			2	3RL.1.3			3	3RL.1.3			2	3RL.1.1			3	3RL.1.3			3	3RL.1.3		
17	3	3RL.1.2			2	3RL.1.2			3	3RL.1.2			2	3RL.1.2			3	3RL.1.2			3	3RL.1.2		
18	2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			3	3WL.3.5			2	3RL.1.4			2	3RL.1.4		
19	2	3RL.1.4			2	3RL.1.1			2	3WL.3.4			2	3WL.3.4			2	3RL.1.1			2	3RL.1.4	3WL.3.4	
20	1	3WL.3.1	3WL.3.2		1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
21	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
22	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1	3WL.2.2	
23	3	3RL.1.1			3	3RL.1.1			3	3RL.1.1			3	3RL.1.4			3	3RL.1.1			3	3RL.1.5		
24	2	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
25	2	3RL.1.5			3	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			3	3RL.1.5		
26	2	3RL.1.8			3	3RL.1.8			3	3RL.1.8			2	3RL.1.8			2	3RL.1.8			3	3RL.1.8		
27	1	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			1	3RL.1.4			2	3RL.1.4		
28	2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.3		
29	2	3RL.1.7			3	3RL.1.7			3	3RL.1.7			2	3RL.1.7			3	3RL.1.7			3	3RL.1.7		
30	3	3RL.1.8			2	3RL.1.1			3	3RL.1.2			3	3RL.1.8			2	3RL.1.8			3	3RL.1.8		
31	2	3RL.1.4			2	3RL.1.4	3WL.3.4		2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
32	2	3RL.1.8			2	3RL.1.8			2	3RL.1.8			2	3RL.1.8			2	3RL.1.8			2	3RL.1.8		
33	2	3RL.1.2			2	3RL.1.1			2	3RL.1.6			2	3RL.1.6			2	3RL.1.6			2	3RL.1.1	3RL.1.6	

34	2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7		
35	1	3RI.1.5			2	3RI.1.1			2	3RI.1.5			2	3RI.1.5			2	3RI.1.5			2	3RI.1.5		
36	2	3RI.1.2			2	3RI.1.1			1	3RI.1.1			2	3RI.1.1			2	3RI.1.1			2	3RI.1.1		
37	2	3RI.1.4			2	3RI.1.4	3WL.3.4		2	3RI.1.4			2	3RI.1.4			2	3RI.1.4			2	3RI.1.4		
38	2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2		
39	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.2		
40	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			2	3WL.3.1		
41	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			2	3WL.3.1		
42	3	3WL.1.1	3WL.3.1		3	3WL.1.1	3WL.1.3	3WL.1.5	3	3WL.1.1	3WL.3.1		3	3WL.1.1			3	3WL.1.1			3	3WL.1.1	3WL.3.1	
Objective Pairwise Comparison: 0.74																								
Standard Pairwise Comparison: 0.9																								

Table 3.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 3 Paper*

	Low			Medium			High		
	0			28.8				48	
3RL.0.0									
3RL.1.0									
3RL.1.1	3(1)	6(5)	8(1)	13(1)	19(2)	23(4)	28(5)	30(1)	
3RL.1.2	30(1)	17(6)	7(6)						
3RL.1.3	6(1)	2(5)	16(5)	28(1)					
3RL.1.4	31(1)	24(5)	27(5)	18(5)	23(1)	19(2)	11(1)	2(1)	4(5)
3RL.1.5	5(6)	23(1)	25(6)						
3RL.1.6	3(5)								
3RL.1.7	1(6)	29(6)							
3RL.1.8	26(6)	30(4)							
3RL.1.9									
3RL.2.0									
3RL.2.1									
3RL.2.2									
3RI.0.0									
3RI.1.0									
3RI.1.1	35(1)	33(2)	36(5)	8(4)	9(4)	10(6)	16(1)	14(1)	
3RI.1.2	13(4)	8(1)	36(1)	38(6)	33(1)				
3RI.1.3	9(1)								
3RI.1.4	11(5)	31(5)	37(6)						
3RI.1.5	35(5)	13(1)							
3RI.1.6	33(4)								
3RI.1.7	34(6)	15(6)	12(6)	9(1)					
3RI.1.8	32(6)								
3RI.1.9	14(5)								
3RI.1.10									

3RI.2.0									
3RI.2.1									
3RI.2.2									
3RI.2.3									
3RI.2.4									
3RI.2.5									
3RI.2.6									
3WL.0.0									
3WL.1.0									
3WL.1.1	42(48)								
3WL.1.2									
3WL.1.3	42(8)								
3WL.1.4									
3WL.1.5	42(8)								
3WL.1.6									
3WL.1.7									
3WL.1.8									
3WL.1.10									
3WL.2.0									
3WL.2.1									
3WL.2.2	22(1)								
3WL.3.0									
3WL.3.1	40(6)	41(6)	39(5)	20(6)	21(12)	22(6)	42(24)		
3WL.3.2	39(1)	20(1)							
3WL.3.3									
3WL.3.4	27(1)	24(1)	4(1)	19(3)	11(1)	31(1)	37(1)		
3WL.3.5	18(1)								
3WL.3.6									

Table 3.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 3 Paper*

Low		Medium		High
9.6		28.8		48
1 12998	3RL.1.7:6			
2 12987	3RL.1.3:5	3RL.1.4:1		
3 12985	3RL.1.1:1	3RL.1.6:5		
4 12984	3RL.1.4:5	3WL.3.4:1		
5 12986	3RL.1.5:6			
6 12988	3RL.1.1:5	3RL.1.3:1		
7 12983	3RL.1.2:6			
8 10628	3RL.1.1:1	3RI.1.1:4	3RI.1.2:1	
9 10630	3RI.1.1:4	3RI.1.3:1	3RI.1.7:1	
10 9410	3RI.1.1:6			
11 9422	3RL.1.4:1	3RI.1.4:5	3WL.3.4:1	
12 9418	3RI.1.7:6			
13 10632	3RL.1.1:1	3RI.1.2:4	3RI.1.5:1	
14 10634	3RI.1.1:1	3RI.1.9:5		
15 9419	3RI.1.7:6			
16 12990	3RL.1.3:5	3RI.1.1:1		
17 12992	3RL.1.2:6			
18 12996	3RL.1.4:5	3WL.3.5:1		
19 12994	3RL.1.1:2	3RL.1.4:2	3WL.3.4:3	
20 12979	3WL.3.1:6	3WL.3.2:1		
21 12980	3WL.3.1:12			
22 12981	3WL.2.2:1	3WL.3.1:6		
23 9687	3RL.1.1:4	3RL.1.4:1	3RL.1.5:1	
24 9690	3RL.1.4:5	3WL.3.4:1		
25 9691	3RL.1.5:6			
26 9692	3RL.1.8:6			
27 9697	3RL.1.4:5	3WL.3.4:1		
28 9698	3RL.1.1:5	3RL.1.3:1		
29 9700	3RL.1.7:6			
30 9699	3RL.1.1:1	3RL.1.2:1	3RL.1.8:4	
31 12133	3RL.1.4:1	3RI.1.4:5	3WL.3.4:1	
32 12180	3RI.1.8:6			
33 12383	3RI.1.1:2	3RI.1.2:1	3RI.1.6:4	

34 12387	3RI.1.7:6			
35 12758	3RI.1.1:1	3RI.1.5:5		
36 12760	3RI.1.1:5	3RI.1.2:1		
37 12757	3RI.1.4:6	3WL.3.4:1		
38 12776	3RI.1.2:6			
39 9377	3WL.3.1:5	3WL.3.2:1		
40 9379	3WL.3.1:6			
41 9380	3WL.3.1:6			
42 13023 (1a)	3WL.1.1:48	3WL.1.3:8	3WL.1.5:8	3WL.3.1:24



Table 3.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 3 Paper*

Low DOK		Matched DOK		High DOK

3RL.0.0									
3RL.1.0									
3RL.1.1: [2]	3:(1)[2]	6:(5)[1]	8:(1)[1]	13:(1)[2]	19:(2)[2]	23:(4)[3]	28:(5)[2]	30:(1)[2]	
3RL.1.2: [2]	7:(6)[2]	17:(6)[3]	30:(1)[3]						
3RL.1.3: [3]	2:(5)[2]	6:(1)[2]	16:(5)[3]	28:(1)[2]					
3RL.1.4: [2]	2:(1)[2]	4:(5)[2]	11:(1)[2]	18:(5)[2]	19:(2)[2]	23:(1)[3]	24:(5)[2]	27:(5)[2]	31:(1)[2]
3RL.1.5: [2]	5:(6)[2]	23:(1)[3]	25:(6)[2]						
3RL.1.6: [2]	3:(5)[2]								
3RL.1.7: [3]	1:(6)[2]	29:(6)[3]							
3RL.1.8: [3]	26:(6)[2]	30:(4)[3]							
3RL.1.9									
3RL.2.0									
3RL.2.1									
3RL.2.2									
3RI.0.0									
3RI.1.0									
3RI.1.1: [2]	8:(4)[1]	9:(4)[1]	10:(6)[2]	14:(1)[2]	16:(1)[2]	33:(2)[2]	35:(1)[2]	36:(5)[2]	
3RI.1.2: [2]	8:(1)[2]	13:(4)[2]	33:(1)[2]	36:(1)[2]	38:(6)[2]				
3RI.1.3: [3]	9:(1)[1]								
3RI.1.4: [2]	11:(5)[2]	31:(5)[2]	37:(6)[2]						
3RI.1.5: [2]	13:(1)[2]	35:(5)[2]							
3RI.1.6: [3]	33:(4)[2]								
3RI.1.7: [3]	9:(1)[1]	12:(6)[2]	15:(6)[2]	34:(6)[2]					
3RI.1.8: [2]	32:(6)[2]								
3RI.1.9: [3]	14:(5)[3]								
3RI.1.10									
3RI.2.0									
3RI.2.1									
3RI.2.2									
3RI.2.3									

3RI.2.4									
3RI.2.5									
3RI.2.6									
3WL.0.0									
3WL.1.0									
3WL.1.1: [3]	42:(48)[3]								
3WL.1.2									
3WL.1.3: [3]	42:(8)[3]								
3WL.1.4									
3WL.1.5: [3]	42:(8)[3]								
3WL.1.6									
3WL.1.7									
3WL.1.8									
3WL.1.10									
3WL.2.0									
3WL.2.1									
3WL.2.2: [1]	22:(1)[1]								
3WL.3.0									
3WL.3.1: [2]	20:(6)[1]	21:(12)[1]	22:(6)[1]	39:(5)[1]	40:(6)[1]	41:(6)[1]	42:(24)[3]		
3WL.3.2: [1]	20:(1)[1]	39:(1)[1]							
3WL.3.3									
3WL.3.4: [2]	4:(1)[2]	11:(1)[2]	19:(3)[2]	24:(1)[2]	27:(1)[2]	31:(1)[2]	37:(1)[2]		
3WL.3.5: [3]	18:(1)[3]								
3WL.3.6									

Table 3.1b

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Online*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
3RL.0.0 Reading and Foundation...	2	11	1 2 3	1 7 3	9.09 63.64 27.27	15	0.63	YES
3RI.0.0 Reading, Speaking, and...	2	16	1 2 3	1 9 6	6.25 56.25 37.5	19.5	0.84	YES
3WL.0.0 Writing and Language ...	3	17	1 2 3 4	3 7 6 1	17.65 41.18 35.29 5.88	22.83	4.49	YES
Total	7	44	1 2 3 4	5 23 15 1	11 52 34 2	57.33	3.78	

Table 3.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
3RL.0.0 Reading and Foundation...	2	11	15	0.63	25.53	10	63.19	11	11.28	6	YES
3RI.0.0 Reading, Speaking, and...	2	16	19.5	0.84	26.51	5	53.87	6	19.62	2	YES
3WL.0.0 Writing and Language ...	3	17	22.83	4.49	32.57	8	39.88	9	27.54	14	YES
Total	7	44	57.33	3.78	28.2	3.6	50.58	6.2	21.22	5.4	
NT = Not Tested											

*Table 3.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
3RL.0.0 Reading and Foundation...	2	11	15	0.63	7.83	0.41	71.21	3.71	YES	35	2	0.85	0.07	YES
3RI.0.0 Reading, Speaking, and...	2	16	19.5	0.84	8.67	0.82	54.17	5.1	YES	45	3	0.77	0.04	YES
3WL.0.0 Writing and Language ...	3	17	22.83	4.49	2.33	0.52	13.73	3.04	NO	21	5	0.83	0.08	YES
Total	7	44	57.33	3.78	6.3	3.44	46.37	30		34	12	0.82	0.04	

*Table 3.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 3 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
3RL.0.0 Reading and Foundation...	YES	YES	YES	YES
3RI.0.0 Reading, Speaking, and...	YES	YES	YES	YES
3WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 3.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 3 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	3	3	3	3	3	3
2	1	1	2	2	2	2
3	1	1	1	1	1	1
4	2	2	2	2	2	2
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	1	2	2	2	2	2
8	3	2	3	3	3	3
9	3	3	3	3	3	3
10	2	2	2	2	2	2
11	2	3	2	2	2	3
12	2	3	2	3	2	3
13	2	2	3	3	3	3
14	2	2	2	2	1	2
15	2	2	2	2	2	2
16	3	2	3	3	2	3
17	2	3	3	2	3	3
18	3	3	3	3	3	3
19	3	3	3	3	3	3
20	3	3	3	3	3	3
21	3	3	3	3	3	3
22	3	3	3	3	3	3
23	1	1	1	1	1	1
24	1	1	1	1	1	1
25	1	1	1	1	1	1
26	2	2	2	2	2	2
27	2	2	2	2	2	2
28	2	2	2	2	1	2
29	2	2	2	2	2	2
30	2	2	2	2	2	2
31	2	2	2	2	2	2
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	2
36	2	2	2	2	2	2
37	2	2	2	2	2	2
38	2	2	2	2	2	2
39	2	2	2	2	2	2
40	1	1	1	1	1	1
41	1	1	1	1	1	1
42	1	1	1	1	1	1

*Intraclass correlation - .9815*

*Pairwise Comparison - 0.89*

Table 3.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 3 Online*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	3WL.1.2	3WL.3.1		3	3WL.3.1	3WL.1.2		3	3WL.1.2	3WL.3.1		3	3WL.1.2			3	3WL.1.2	3WL.3.1		3	3WL.1.2	3WL.3.1	
2	1	3RI.1.1			1	3RI.1.1			2	3RI.1.1			2	3RI.1.1			2	3RI.1.1			2	3RI.1.2		
3	1	3RI.1.1			1	3RL.1.1			1	3RI.1.1			1	3RI.1.7			1	3RI.1.1			1	3RI.1.1		
4	2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7		
5	2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7		
6	2	3RI.1.4			2	3RI.1.4	3WL.3.4		2	3RI.1.4			2	3RI.1.4			2	3RI.1.4			2	3RI.1.4		
7	1	3RI.1.5			2	3RI.1.2			2	3RI.1.2			2	3RI.1.1			2	3RI.1.2			2	3RI.1.2		
8	3	3RI.1.9			2	3RL.1.9			3	3RI.1.9			3	3RI.1.9			3	3RI.1.9			3	3RI.1.9		
9	3	3RL.1.1			3	3RL.1.1			3	3RL.1.1			3	3RL.1.1			3	3RL.1.1			3	3RL.1.1		
10	2	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
11	2	3RL.1.5			3	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			3	3RL.1.5		
12	2	3RL.1.8			3	3RL.1.8			2	3RL.1.8			3	3RL.1.8			2	3RL.1.8			3	3RL.1.8		
13	2	3RL.1.3			2	3RL.1.3			3	3RL.1.3			3	3RL.1.3			3	3RL.1.3			3	3RL.1.3		
14	2	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			1	3RL.1.4			2	3RL.1.4		
15	2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.1			2	3RL.1.3		
16	3	3RL.1.8			2	3RL.1.1			3	3RL.1.2			3	3RL.1.8			2	3RL.1.8			3	3RL.1.8		
17	2	3RL.1.7			3	3RI.1.7			3	3RL.1.7			2	3RL.1.7			3	3RL.1.7			3	3RL.1.7		
18	3	3RI.2.2			3	3RL.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2		
19	3	3RI.2.1			3	3RI.2.1			3	3RI.2.1			3	3RI.2.1			3	3RI.2.1			3	3RI.2.1		
20	3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2		
21	3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2		
22	3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2			3	3RI.2.2		
23	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
24	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
25	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
26	2	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2			2	3RL.1.2		
27	2	3RL.1.4			2	3WL.3.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4			2	3RL.1.4		
28	2	3RL.1.6			2	3RL.1.1			2	3RL.1.6			2	3RL.1.1			1	3RL.1.6			2	3RL.1.6		
29	2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5			2	3RL.1.5		
30	2	3RL.1.3			2	3RL.1.3			2	3RL.1.3			2	3RL.1.4			2	3RL.1.3			2	3RL.1.3		
31	2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7			2	3RL.1.7		
32	2	3RI.1.4			2	3RI.1.4	3WL.3.4		2	3RI.1.4			2	3RI.1.4			2	3RI.1.4			2	3RI.1.4		

33	2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2		
34	2	3RI.1.6			2	3RI.1.1			2	3RI.1.6			2	3RI.1.6			2	3RI.1.6			2	3RI.1.6		
35	2	3RI.1.2			2	3RI.1.1			2	3RI.1.1			2	3RI.1.1			2	3RI.1.1			2	3RI.1.1		
36	2	3RI.1.5			2	3RI.1.5			2	3RI.1.5			2	3RI.1.5			2	3RI.1.5			2	3RI.1.5		
37	2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7			2	3RI.1.7		
38	2	3RI.1.4			2	3RI.1.4	3WL.3.4		2	3RI.1.4			2	3RI.1.4			2	3RI.1.4			2	3RI.1.4		
39	2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2			2	3RI.1.2		
40	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
41	1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
42	1	3WL.1.1	3WL.3.1		1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1			1	3WL.3.1		
Objective Pairwise Comparison: 0.81																								
Standard Pairwise Comparison: 0.92																								

Table 3.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 3 Online*

Low		Medium		High	
0		28.8		48	
3RL.0.0					
3RL.1.0					
3RL.1.1	3(1)	9(6)	15(5)	16(1)	28(2)
3RL.1.2	39(1)	16(1)	26(6)		
3RL.1.3	30(5)	15(1)	13(6)		
3RL.1.4	14(5)	10(5)	30(1)	27(5)	
3RL.1.5	11(6)	29(6)			
3RL.1.6	28(4)				
3RL.1.7	17(5)	31(6)			
3RL.1.8	16(4)	12(6)			
3RL.1.9	8(1)				
3RL.2.0					
3RL.2.1					
3RL.2.2	18(1)				
3RI.0.0					
3RI.1.0					
3RI.1.1	35(5)	34(1)	3(4)	2(5)	7(1)
3RI.1.2	7(4)	2(1)	39(5)	35(1)	33(6)
3RI.1.3					
3RI.1.4	38(6)	6(6)	32(6)		
3RI.1.5	7(1)	36(6)			
3RI.1.6	34(5)				
3RI.1.7	37(6)	3(1)	4(6)	5(6)	17(1)
3RI.1.8					
3RI.1.9	8(5)				
3RI.1.10					



3RI.2.0							
3RI.2.1	19(6)						
3RI.2.2	20(6)	21(6)	22(6)	18(5)			
3RI.2.3							
3RI.2.4							
3RI.2.5							
3RI.2.6							
3WL.0.0							
3WL.1.0							
3WL.1.1	42(1)						
3WL.1.2	1(48)						
3WL.1.3							
3WL.1.4							
3WL.1.5							
3WL.1.6							
3WL.1.7							
3WL.1.8							
3WL.1.10							
3WL.2.0							
3WL.2.1							
3WL.2.2							
3WL.3.0							
3WL.3.1	23(6)	24(12)	25(6)	40(6)	41(6)	42(6)	1(40)
3WL.3.2							
3WL.3.3							
3WL.3.4	27(1)	14(1)	10(1)	38(1)	6(1)	32(1)	
3WL.3.5							
3WL.3.6							

Table 3.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 3 Online*

Low		Medium		High	
9.6		28.8		48	
1 13026	3WL.1.2:48	3WL.3.1:40			
2 10628	3RI.1.1:5	3RI.1.2:1			
3 10630	3RL.1.1:1	3RI.1.1:4	3RI.1.7:1		
4 9418	3RI.1.7:6				
5 9419	3RI.1.7:6				
6 9422	3RI.1.4:6	3WL.3.4:1			
7 10632	3RI.1.1:1	3RI.1.2:4	3RI.1.5:1		
8 10634	3RL.1.9:1	3RI.1.9:5			
9 9687	3RL.1.1:6				
10 9690	3RL.1.4:5	3WL.3.4:1			
11 9691	3RL.1.5:6				
12 9692	3RL.1.8:6				
13 9694	3RL.1.3:6				
14 9697	3RL.1.4:5	3WL.3.4:1			
15 9698	3RL.1.1:5	3RL.1.3:1			
16 9699	3RL.1.1:1	3RL.1.2:1	3RL.1.8:4		
17 9700	3RL.1.7:5	3RI.1.7:1			
18 11854	3RL.2.2:1	3RI.2.2:5			
19 11867	3RI.2.1:6				
20 12417	3RI.2.2:6				
21 12521	3RI.2.2:6				
22 12524	3RI.2.2:6				
23 12979	3WL.3.1:6				
24 12980	3WL.3.1:12				
25 12981	3WL.3.1:6				
26 12983	3RL.1.2:6				
27 12984	3RL.1.4:5	3WL.3.4:1			
28 12985	3RL.1.1:2	3RL.1.6:4			
29 12986	3RL.1.5:6				
30 12987	3RL.1.3:5	3RL.1.4:1			
31 12998	3RL.1.7:6				
32 12133	3RI.1.4:6	3WL.3.4:1			

33 12379	3RI.1.2:6	
34 12383	3RI.1.1:1	3RI.1.6:5
35 12760	3RI.1.1:5	3RI.1.2:1
36 12758	3RI.1.5:6	
37 12387	3RI.1.7:6	
38 12757	3RI.1.4:6	3WL.3.4:1
39 12776	3RI.1.2:1	3RI.1.2:5
40 9377	3WL.3.1:6	
41 9379	3WL.3.1:6	
42 9380	3WL.1.1:1	3WL.3.1:6

Table 3.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 3 Online*

Low DOK		Matched DOK		High DOK

3RL.0.0							
3RL.1.0							
3RL.1.1: [2]	3:(1)[1]	9:(6)[3]	15:(5)[2]	16:(1)[2]	28:(2)[2]		
3RL.1.2: [2]	16:(1)[3]	26:(6)[2]	39:(1)[2]				
3RL.1.3: [3]	13:(6)[3]	15:(1)[2]	30:(5)[2]				
3RL.1.4: [2]	10:(5)[2]	14:(5)[2]	27:(5)[2]	30:(1)[2]			
3RL.1.5: [2]	11:(6)[2]	29:(6)[2]					
3RL.1.6: [2]	28:(4)[2]						
3RL.1.7: [3]	17:(5)[3]	31:(6)[2]					
3RL.1.8: [3]	12:(6)[2]	16:(4)[3]					
3RL.1.9: [2]	8:(1)[2]						
3RL.2.0							
3RL.2.1							
3RL.2.2: [2]	18:(1)[3]						
3RI.0.0							
3RI.1.0							
3RI.1.1: [2]	2:(5)[2]	3:(4)[1]	7:(1)[2]	34:(1)[2]	35:(5)[2]		
3RI.1.2: [2]	2:(1)[2]	7:(4)[2]	33:(6)[2]	35:(1)[2]	39:(5)[2]		
3RI.1.3							
3RI.1.4: [2]	6:(6)[2]	32:(6)[2]	38:(6)[2]				
3RI.1.5: [2]	7:(1)[1]	36:(6)[2]					
3RI.1.6: [3]	34:(5)[2]						
3RI.1.7: [3]	3:(1)[1]	4:(6)[2]	5:(6)[2]	17:(1)[3]	37:(6)[2]		
3RI.1.8							
3RI.1.9: [3]	8:(5)[3]						
3RI.1.10							
3RI.2.0							
3RI.2.1: [3]	19:(6)[3]						
3RI.2.2: [2]	18:(5)[3]	20:(6)[3]	21:(6)[3]	22:(6)[3]			

3RI.2.3							
3RI.2.4							
3RI.2.5							
3RI.2.6							
3WL.0.0							
3WL.1.0							
3WL.1.1: [3]	42:(1)[1]						
3WL.1.2: [3]	1:(48)[3]						
3WL.1.3							
3WL.1.4							
3WL.1.5							
3WL.1.6							
3WL.1.7							
3WL.1.8							
3WL.1.10							
3WL.2.0							
3WL.2.1							
3WL.2.2							
3WL.3.0							
3WL.3.1: [2]	1:(40)[3]	23:(6)[1]	24:(12)[1]	25:(6)[1]	40:(6)[1]	41:(6)[1]	42:(6)[1]
3WL.3.2							
3WL.3.3							
3WL.3.4: [2]	6:(1)[2]	10:(1)[2]	14:(1)[2]	27:(1)[2]	32:(1)[2]	38:(1)[2]	
3WL.3.5							
3WL.3.6							

## ELA Grade 4

Table 4.1a

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Paper*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
4RL.0.0 Reading and Foundation...	2	11	1 2 3	1 7 3	9.09 63.64 27.27	19.33	1.03	YES
4RI.0.0 Reading, Speaking, and...	2	16	2 3	9 7	56.25 43.75	16.5	0.84	YES
4WL.0.0 Writing and Language ...	3	17	1 2 3 4	2 7 7 1	11.76 41.18 41.18 5.88	30.83	6.34	YES
Total	7	44	1 2 3 4	3 23 17 1	7 52 39 2	66.66	6.74	

Table 4.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
4RL.0.0 Reading and Foundation...	2	11	19.33	1.03	18.37	10	73.23	8	8.4	9	YES
4RI.0.0 Reading, Speaking, and...	2	16	16.5	0.84	8.04	3	73.93	9	18.03	10	YES
4WL.0.0 Writing and Language ...	3	17	30.83	6.34	17.2	7	66.39	10	16.41	13	YES
Total	7	44	66.66	6.74	14.75	5.8	70	4.7	15.25	8.6	
NT = Not Tested											

*Table 4.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
4RL.0.0 Reading and Foundation...	2	11	19.33	1.03	7.17	0.41	65.15	3.71	YES	44	1	0.81	0.05	YES
4RI.0.0 Reading, Speaking, and...	2	16	16.5	0.84	6.33	0.52	39.58	3.23	NO	36	2	0.78	0.04	YES
4WL.0.0 Writing and Language ...	3	17	30.83	6.34	4.17	0.41	24.51	2.4	NO	21	1	0.74	0.04	YES
Total	7	44	66.66	6.74	5.9	1.55	43.08	21		34	12	0.78	0.03	

*Table 4.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Paper*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
4RL.0.0 Reading and Foundation...	YES	YES	YES	YES
4RI.0.0 Reading, Speaking, and...	YES	YES	NO	YES
4WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 4.5a

*Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 4 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	2	2	2	2	2	2
2	2	2	2	2	2	2
3	2	2	2	2	2	2
4	2	1	2	2	2	2
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	2	2	2	2	2	2
8	2	2	3	2	2	2
9	2	2	2	2	2	2
10	2	3	3	2	2	3
11	2	3	3	2	3	3
12	1	1	1	1	1	2
13	1	1	1	1	1	2
14	1	1	1	1	1	2
15	2	2	2	2	2	2
16	2	2	3	2	2	3
17	2	2	2	2	2	2
18	2	2	2	2	2	2
19	2	2	2	2	2	2
20	2	2	2	2	2	2
21	2	2	2	2	2	3
22	2	2	2	2	2	2
23	2	2	2	2	2	2
24	2	2	2	2	2	2
25	2	2	2	2	2	2
26	3	2	3	2	2	3
27	2	2	2	2	2	2
28	2	2	3	2	2	2
29	3	3	3	3	3	3
30	2	3	3	2	2	3
31	3	3	3	2	3	3
32	2	2	2	3	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	3
36	2	3	3	2	3	3
37	2	3	3	2	3	3
38	3	3	3	2	2	3
39	1	1	1	1	1	2
40	1	1	1	1	1	1
41	1	1	1	1	1	1
42	3	3	3	3	3	3

*Intraclass correlation - .9534*

*Pairwise Comparison - 0.81*



Table 4.6a  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 4 Paper*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4		
2	2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1		
3	2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.2		
4	2	4RI.1.1			1	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.3			2	4RI.1.1		
5	2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5		
6	2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.3			2	4RI.1.2			2	4RI.1.2		
7	2	4RL.1.1			2	4RL.1.3			2	4RL.1.3			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1		
8	2	4RL.1.1			2	4RL.1.3			3	4RL.1.3			2	4RL.1.3			2	4RL.1.3			2	4RL.1.3		
9	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
10	2	4RL.1.6			3	4RL.1.6			3	4RL.1.6			2	4RL.1.6			2	4RL.1.6			3	4RL.1.6		
11	2	4RL.1.2			3	4RL.1.8			3	4RL.1.2			2	4RL.1.8			3	4RL.1.8			3	4RL.1.8		
12	1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			2	4WL.3.1		
13	1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			2	4WL.3.1		
14	1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			2	4WL.3.2		
15	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4WL.3.4			2	4RL.1.4			2	4RL.1.4		
16	2	4RL.1.1			2	4RL.1.1			3	4RL.1.1			2	4RL.1.4			2	4RL.1.1			3	4RL.1.3		
17	2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1		
18	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.2			2	4RL.1.4			2	4RL.1.4		
19	2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7		
20	2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7		
21	2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			3	4RL.1.2		
22	2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2		
23	2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7		
24	2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5		
25	2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4		
26	3	4RI.1.3			2	4RI.1.3			3	4RI.1.3			2	4RI.1.3			2	4RI.1.3			3	4RL.1.3		
27	2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5		
28	2	4RI.1.1			2	4RI.1.3			3	4RI.1.3			2	4RI.1.3			2	4RI.1.3			2	4RI.1.3		
29	3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3		

30	2	4RL.1.5			3	4RL.1.5			3	4RL.1.5			2	4RL.1.9			2	4RL.1.5			3	4RL.1.9		
31	3	4RL.1.3			3	4RL.1.3			3	4RL.1.3			2	4RL.1.3			3	4RL.1.3			3	4RL.1.3		
32	2	4RL.1.3			2	4RL.1.3			2	4RL.1.3			3	4RL.1.3			2	4RL.1.1			2	4RL.1.1		
33	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
34	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
35	2	4RL.1.3			2	4RL.1.1			2	4RL.1.1			2	4RL.1.3			2	4RL.1.1			3	4RL.1.1		
36	2	4RL.1.6			3	4RL.1.6			3	4RL.1.6			2	4RL.1.6			3	4RL.1.6			3	4RL.1.6		
37	2	4RL.1.8			3	4RL.1.1			3	4RL.1.8			2	4RL.1.1			3	4RL.1.8			3	4RL.1.8		
38	3	4RL.1.8			3	4RL.1.8			3	4RL.1.8			2	4RL.1.8			2	4RL.1.8			3	4RL.1.8		
39	1	4WL.3. 1			1	4WL.3. 2			1	4WL.3. 1			1	4WL.3. 2			1	4WL.3. 1			2	4WL.3. 1		
40	1	4WL.3. 2			1	4WL.3. 2			1	4WL.3. 2			1	4WL.3. 2			1	4WL.3. 2			1	4WL.3. 2		
41	1	4WL.3. 1			1	4WL.3. 1			1	4WL.3. 1			1	4WL.3. 1			1	4WL.3. 1			1	4WL.3. 1	4WL.3. 2	
42	3	4WL.1. 1	4WL.1. 3	4WL.1. 4	3	4WL.1. 1	4WL.1. 4	4WL.3. 1	3	4WL.1. 1	4WL.3. 1	4WL.1. 4	3	4WL.1. 1			3	4WL.1. 1	4WL.3. 1	4WL.1. 4	3	4WL.1. 1	4WL.1. 4	4WL.3. 1
Objective Pairwise Comparison: 0.81																								
Standard Pairwise Comparison: 0.98																								

Table 4.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 4 Paper*

Low		Medium			High		
0		28.8					48
4RL.0.0							
4RL.1.0							
4RL.1.1	8(1)	7(4)	17(6)	16(4)	32(2)	37(2)	35(4)
4RL.1.2	18(1)	21(6)	11(2)				
4RL.1.3	7(2)	8(5)	16(1)	26(2)	35(2)	32(4)	
4RL.1.4	33(6)	34(6)	16(1)	18(5)	9(6)	15(5)	
4RL.1.5	30(1)						
4RL.1.6	10(6)	36(6)					
4RL.1.7	19(6)	20(6)					
4RL.1.8	11(4)	37(4)	38(6)				
4RL.1.9							
4RL.2.0							
4RL.2.1							
4RL.2.2							
4RI.0.0							
4RI.1.0							
4RI.1.1	2(6)	3(5)	4(5)	28(1)			
4RI.1.2	22(6)	3(1)	6(5)				
4RI.1.3	6(1)	4(1)	28(5)	29(6)	26(10)	31(6)	
4RI.1.4	25(6)	1(6)					
4RI.1.5	5(6)	30(3)	27(6)	24(6)			
4RI.1.6							
4RI.1.7	23(6)						
4RI.1.8							
4RI.1.9	30(2)						
4RI.1.10							

4RI.2.0							
4RI.2.1							
4RI.2.2							
4RI.2.3							
4RI.2.4							
4RI.2.5							
4RI.2.6							
4WL.0.0							
4WL.1.0							
4WL.1.1	42(48)						
4WL.1.2							
4WL.1.3	42(8)						
4WL.1.4	42(40)						
4WL.1.5							
4WL.1.6							
4WL.1.7							
4WL.1.8							
4WL.1.9							
4WL.1.10							
4WL.2.0							
4WL.2.1							
4WL.3.0							
4WL.3.1	41(12)	39(4)	12(6)	13(12)	42(32)		
4WL.3.2	14(6)	39(2)	40(12)	41(2)			
4WL.3.3							
4WL.3.4	15(1)						
4WL.3.5							
4WL.3.6							

Table 4.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 4 Paper*

Low		Medium		High
9.6		28.8		48
1 13040	4RI.1.4:6			
2 13039	4RI.1.1:6			
3 13034	4RI.1.1:5	4RI.1.2:1		
4 13036	4RI.1.1:5	4RI.1.3:1		
5 13038	4RI.1.5:6			
6 13035	4RI.1.2:5	4RI.1.3:1		
7 13042	4RL.1.1:4	4RL.1.3:2		
8 13043	4RL.1.1:1	4RL.1.3:5		
9 13046	4RL.1.4:6			
10 13070	4RL.1.6:6			
11 13071	4RL.1.2:2	4RL.1.8:4		
12 9428	4WL.3.1:6			
13 9429	4WL.3.1:12			
14 9431	4WL.3.2:6			
15 9446	4RL.1.4:5	4WL.3.4:1		
16 9439	4RL.1.1:4	4RL.1.3:1	4RL.1.4:1	
17 9437	4RL.1.1:6			
18 9435	4RL.1.2:1	4RL.1.4:5		
19 9451	4RL.1.7:6			
20 9450	4RL.1.7:6			
21 9438	4RL.1.2:6			
22 11837	4RI.1.2:6			
23 12567	4RI.1.7:6			
24 11842	4RI.1.5:6			
25 11840	4RI.1.4:6			
26 11844	4RL.1.3:2	4RI.1.3:10		
27 11841	4RI.1.5:6			
28 11846	4RI.1.1:1	4RI.1.3:5		
29 11838	4RI.1.3:6			
30 11847	4RL.1.5:1	4RI.1.5:3	4RI.1.9:2	
31 11967	4RI.1.3:6			
32 13106	4RL.1.1:2	4RL.1.3:4		
33 13100	4RL.1.4:6			

34 13102	4RL.1.4:6			
35 13096	4RL.1.1:4	4RL.1.3:2		
36 13103	4RL.1.6:6			
37 13105	4RL.1.1:2	4RL.1.8:4		
38 13107	4RL.1.8:6			
39 13031	4WL.3.1:4	4WL.3.2:2		
40 13032	4WL.3.2:12			
41 13033	4WL.3.1:12	4WL.3.2:2		
42 13095 (1a)	4WL.1.1:48	4WL.1.3:8	4WL.1.4:40	4WL.3.1:32

Table 4.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 4 Paper*

Low DOK		Matched DOK		High DOK

4RL.0.0							
4RL.1.0							
4RL.1.1: [2]	7:(4)[2]	8:(1)[2]	16:(4)[2]	17:(6)[2]	32:(2)[2]	35:(4)[2]	37:(2)[2]
4RL.1.2: [2]	11:(2)[2]	18:(1)[2]	21:(6)[2]				
4RL.1.3: [2]	7:(2)[2]	8:(5)[2]	16:(1)[3]	26:(2)[3]	32:(4)[2]	35:(2)[2]	
4RL.1.4: [2]	9:(6)[2]	15:(5)[2]	16:(1)[2]	18:(5)[2]	33:(6)[2]	34:(6)[2]	
4RL.1.5: [2]	30:(1)[2]						
4RL.1.6: [3]	10:(6)[2]	36:(6)[3]					
4RL.1.7: [3]	19:(6)[2]	20:(6)[2]					
4RL.1.8: [3]	11:(4)[3]	37:(4)[3]	38:(6)[3]				
4RL.1.9							
4RL.2.0							
4RL.2.1							
4RL.2.2							
4RI.0.0							
4RI.1.0							
4RI.1.1: [2]	2:(6)[2]	3:(5)[2]	4:(5)[2]	28:(1)[2]			
4RI.1.2: [2]	3:(1)[2]	6:(5)[2]	22:(6)[2]				
4RI.1.3: [2]	4:(1)[2]	6:(1)[2]	26:(10)[2]	28:(5)[2]	29:(6)[3]	31:(6)[3]	
4RI.1.4: [2]	1:(6)[2]	25:(6)[2]					
4RI.1.5: [2]	5:(6)[2]	24:(6)[2]	27:(6)[2]	30:(3)[3]			
4RI.1.6							
4RI.1.7: [3]	23:(6)[2]						
4RI.1.8							
4RI.1.9: [3]	30:(2)[2]						
4RI.1.10							
4RI.2.0							
4RI.2.1							
4RI.2.2							
4RI.2.3							

4RI.2.4							
4RI.2.5							
4RI.2.6							
4WL.0.0							
4WL.1.0							
4WL.1.1: [3]	42:(48)[3]						
4WL.1.2							
4WL.1.3: [3]	42:(8)[3]						
4WL.1.4: [3]	42:(40)[3]						
4WL.1.5							
4WL.1.6							
4WL.1.7							
4WL.1.8							
4WL.1.9							
4WL.1.10							
4WL.2.0							
4WL.2.1							
4WL.3.0							
4WL.3.1: [2]	12:(6)[1]	13:(12)[1]	39:(4)[1]	41:(12)[1]	42:(32)[3]		
4WL.3.2: [1]	14:(6)[1]	39:(2)[1]	40:(12)[1]	41:(2)[1]			
4WL.3.3							
4WL.3.4: [2]	15:(1)[2]						
4WL.3.5							
4WL.3.6							



Table 4.1b

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Online*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
4RL.0.0 Reading and Foundation...	2	11	1 2 3	1 7 3	9.09 63.64 27.27	15	0.63	YES
4RI.0.0 Reading, Speaking, and...	2	16	2 3	9 7	56.25 43.75	22.33	3.33	YES
4WL.0.0 Writing and Language ...	3	17	1 2 3 4	2 7 7 1	11.76 41.18 41.18 5.88	29	6.69	YES
Total	7	44	1 2 3 4	3 23 17 1	7 52 39 2	66.33	6.53	

Table 4.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	%Under	SD	%At	SD	%Above	SD	
4RL.0.0 Reading and Foundation...	2	11	15	0.63	26.56	8	72.33	7	1.11	3	YES
4RI.0.0 Reading, Speaking, and...	2	16	22.33	3.33	10.64	3	71.3	12	18.05	14	YES
4WL.0.0 Writing and Language ...	3	17	29	6.69	19.18	5	64.65	11	16.16	13	YES
Total	7	44	66.33	6.53	17.59	4.6	67.59	3.4	14.82	6.7	
NT = Not Tested											

*Table 4.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Balance of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
4RL.0.0 Reading and Foundation...	2	11	15	0.63	7	0	63.64	0	YES	34	2	0.74	0.04	YES
4RI.0.0 Reading, Speaking, and...	2	16	22.33	3.33	8.33	0.52	52.08	3.23	YES	46	2	0.76	0.04	YES
4WL.0.0 Writing and Language ...	3	17	29	6.69	4	0	23.53	0	NO	19	2	0.76	0.04	YES
Total	7	44	66.33	6.53	6.4	2.22	46.42	21		33	13	0.75	0.01	

*Table 4.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 4 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
4RL.0.0 Reading and Foundation...	YES	YES	YES	YES
4RI.0.0 Reading, Speaking, and...	YES	YES	YES	YES
4WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 4.5b

*Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 4 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	3	3	3	3	3	3
2	2	2	2	2	2	2
3	2	2	2	2	2	2
4	2	2	2	2	2	2
5	3	2	3	2	2	3
6	2	2	2	2	2	2
7	2	2	3	2	2	2
8	2	2	3	2	3	3
9	2	3	3	2	2	3
10	3	3	3	3	3	3
11	2	2	2	2	2	2
12	2	2	2	2	2	2
13	2	2	2	2	2	2
14	2	2	3	2	2	2
15	2	2	2	2	2	2
16	2	2	2	2	2	2
17	2	3	3	2	2	3
18	3	3	3	2	3	3
19	2	2	2	2	2	2
20	1	2	2	2	2	2
21	2	2	2	2	2	2
22	2	2	2	2	2	2
23	1	1	1	1	1	2
24	1	1	1	1	1	1
25	1	1	1	1	1	1
26	2	2	2	2	2	2
27	2	2	2	2	2	2
28	2	2	2	2	2	2
29	2	2	2	2	2	2
30	2	1	2	2	2	2
31	2	2	2	2	2	2
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	2
36	2	2	2	2	2	2
37	2	2	2	2	2	2
38	2	2	2	2	2	2
39	2	2	2	2	2	2
40	1	1	1	2	1	2
41	1	1	1	1	1	1
42	1	1	1	1	1	1

*Intraclass correlation - .9647*

*Pairwise Comparison - 0.88*

Table 4.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 4 Online*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	4WL.1.2	4WL.3.1	4WL.1.4	3	4WL.1.2	4WL.1.4	4WL.3.1	3	4WL.1.2	4WL.3.1	4WL.1.4	3	4WL.1.2			3	4WL.1.2	4WL.3.1	4WL.1.4	3	4WL.1.2	4RI.1.4	4WL.1.3
2	2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.2		
3	2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7			2	4RI.1.7		
4	2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4		
5	3	4RI.1.3			2	4RI.1.3			3	4RI.1.3			2	4RI.1.3			2	4RI.1.3			3	4RI.1.3		
6	2	4RI.1.6			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5		
7	2	4RI.1.1			2	4RI.1.3			3	4RI.1.3			2	4RI.1.3			2	4RI.1.3			2	4RI.1.3		
8	2	4RI.1.4			2	4RI.1.3			3	4RI.1.3			2	4RI.1.3			3	4RI.1.3			3	4RI.1.3		
9	2	4RI.1.5			3	4RI.1.5			3	4RI.1.5			2	4RI.1.9			2	4RI.1.5			3	4RI.1.9		
10	3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3			3	4RI.1.3		
11	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
12	2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7		
13	2	4RL.1.1			2	4RL.1.3			2	4RL.1.3			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1		
14	2	4RL.1.1			2	4RL.1.3			3	4RL.1.3			2	4RL.1.3			2	4RL.1.3			2	4RL.1.3		
15	2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1		
16	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
17	2	4RL.1.6			3	4RL.1.6			3	4RL.1.6			2	4RL.1.6			2	4RL.1.6			3	4RL.1.6		
18	3	4RL.1.8			3	4RL.1.8			3	4RL.1.8			2	4RL.1.8			3	4RL.1.8			3	4RL.1.8		
19	2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3		
20	1	4RL.2.2			2	4RI.2.2			2	4RI.2.2			2	4RI.2.2			2	4RI.2.2			2	4RI.2.2		
21	2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3		
22	2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3			2	4RI.2.3		
23	1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			2	4WL.3.1		
24	1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1		
25	1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2		
26	2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4		
27	2	4RI.1.4			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1		
28	2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.1			2	4RI.1.2		

29	2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4			2	4RI.1.4		
30	2	4RI.1.1			1	4RI.1.3			2	4RI.1.3			2	4RI.1.1			2	4RI.1.3			2	4RI.1.1		
31	2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5			2	4RI.1.5		
32	2	4RI.1.2			2	4RI.1.2			2	4RI.1.2			2	4RI.1.3			2	4RI.1.2			2	4RI.1.2		
33	2	4RL.1.4			2	4RI.1.4			2	4RL.1.4			2	4WL.3.4			2	4RL.1.4			2	4RL.1.4		
34	2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.4			2	4RL.1.1			2	4RL.1.3		
35	2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1			2	4RL.1.1		
36	2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4			2	4RL.1.4		
37	2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7		
38	2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7			2	4RL.1.7		
39	2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			2	4RL.1.2			2	4RL.1.2		
40	1	4WL.3.1			1	4WL.3.2			1	4WL.3.1			2	4RL.1.6			1	4WL.3.1			2	4WL.3.1		
41	1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2			1	4WL.3.2		
42	1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1			1	4WL.3.1		

Objective Pairwise Comparison: 0.84

Standard Pairwise Comparison: 0.97

Table 4.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 4 Online*

Low		Medium		High	
0		28.8		48	
4RL.0.0					
4RL.1.0					
4RL.1.1	15(6)	13(4)	14(1)	34(4)	35(6)
4RL.1.2	39(6)				
4RL.1.3	34(1)	14(5)	13(2)		
4RL.1.4	16(6)	11(6)	34(1)	33(4)	36(6)
4RL.1.5					
4RL.1.6	40(1)	17(6)			
4RL.1.7	12(6)	37(6)	38(6)		
4RL.1.8	18(6)				
4RL.1.9					
4RL.2.0					
4RL.2.1					
4RL.2.2	20(1)				
4RI.0.0					
4RI.1.0					
4RI.1.1	28(5)	30(3)	7(1)	27(5)	
4RI.1.2	32(5)	2(6)	28(1)		
4RI.1.3	30(3)	10(6)	7(5)	8(5)	5(12)
4RI.1.4	27(1)	33(1)	8(1)	4(6)	26(6)
4RI.1.5	31(6)	9(4)	6(5)		
4RI.1.6	6(1)				
4RI.1.7	3(6)				
4RI.1.8					
4RI.1.9	9(2)				
4RI.1.10					

4RI.2.0							
4RI.2.1							
4RI.2.2	20(5)						
4RI.2.3	21(6)	22(6)	19(6)				
4RI.2.4							
4RI.2.5							
4RI.2.6							
4WL.0.0							
4WL.1.0							
4WL.1.1							
4WL.1.2	1(48)						
4WL.1.3	1(8)						
4WL.1.4	1(32)						
4WL.1.5							
4WL.1.6							
4WL.1.7							
4WL.1.8							
4WL.1.9							
4WL.1.10							
4WL.2.0							
4WL.2.1							
4WL.3.0							
4WL.3.1	23(6)	24(12)	40(4)	42(12)	1(32)		
4WL.3.2	40(1)	41(12)	25(6)				
4WL.3.3							
4WL.3.4	33(1)						
4WL.3.5							
4WL.3.6							

Table 4.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 4 Online*

	Low	Medium	High
	9.6	28.8	48
1 13094	4RI.1.4:8	4WL.1.2:48	4WL.1.3:8
2 11837	4RI.1.2:6		4WL.1.4:32
3 12567	4RI.1.7:6		4WL.3.1:32
4 11840	4RI.1.4:6		
5 11844	4RI.1.3:12		
6 11841	4RI.1.5:5	4RI.1.6:1	
7 11846	4RI.1.1:1	4RI.1.3:5	
8 11838	4RI.1.3:5	4RI.1.4:1	
9 11847	4RI.1.5:4	4RI.1.9:2	
10 11967	4RI.1.3:6		
11 13072	4RL.1.4:6		
12 13073	4RL.1.7:6		
13 13042	4RL.1.1:4	4RL.1.3:2	
14 13043	4RL.1.1:1	4RL.1.3:5	
15 13044	4RL.1.1:6		
16 13046	4RL.1.4:6		
17 13070	4RL.1.6:6		
18 13071	4RL.1.8:6		
19 12317	4RI.2.3:6		
20 12666	4RL.2.2:1	4RI.2.2:5	
21 12647	4RI.2.3:6		
22 12653	4RI.2.3:6		
23 9428	4WL.3.1:6		
24 9429	4WL.3.1:12		
25 9431	4WL.3.2:6		
26 13040	4RI.1.4:6		
27 13039	4RI.1.1:5	4RI.1.4:1	
28 13034	4RI.1.1:5	4RI.1.2:1	
29 13037	4RI.1.4:6		
30 13036	4RI.1.1:3	4RI.1.3:3	
31 13038	4RI.1.5:6		
32 13035	4RI.1.2:5	4RI.1.3:1	



33 9446	4RL.1.4:4	4RL.1.4:1	4WL.3.4:1
34 9439	4RL.1.1:4	4RL.1.3:1	4RL.1.4:1
35 9437	4RL.1.1:6		
36 9435	4RL.1.4:6		
37 9451	4RL.1.7:6		
38 9450	4RL.1.7:6		
39 9438	4RL.1.2:6		
40 13031	4RL.1.6:1	4WL.3.1:4	4WL.3.2:1
41 13032	4WL.3.2:12		
42 13033	4WL.3.1:12		

Table 4.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 4 Online*

Low DOK		Matched DOK		High DOK

4RL.0.0							
4RL.1.0							
4RL.1.1: [2]	13:(4)[2]	14:(1)[2]	15:(6)[2]	34:(4)[2]	35:(6)[2]		
4RL.1.2: [2]	39:(6)[2]						
4RL.1.3: [2]	13:(2)[2]	14:(5)[2]	34:(1)[2]				
4RL.1.4: [2]	11:(6)[2]	16:(6)[2]	33:(4)[2]	34:(1)[2]	36:(6)[2]		
4RL.1.5							
4RL.1.6: [3]	17:(6)[2]	40:(1)[2]					
4RL.1.7: [3]	12:(6)[2]	37:(6)[2]	38:(6)[2]				
4RL.1.8: [3]	18:(6)[3]						
4RL.1.9							
4RL.2.0							
4RL.2.1							
4RL.2.2: [2]	20:(1)[1]						
4RI.0.0							
4RI.1.0							
4RI.1.1: [2]	7:(1)[2]	27:(5)[2]	28:(5)[2]	30:(3)[2]			
4RI.1.2: [2]	2:(6)[2]	28:(1)[2]	32:(5)[2]				
4RI.1.3: [2]	5:(12)[2]	7:(5)[2]	8:(5)[3]	10:(6)[3]	30:(3)[2]	32:(1)[2]	
4RI.1.4: [2]	1:(8)[3]	4:(6)[2]	8:(1)[2]	26:(6)[2]	27:(1)[2]	29:(6)[2]	33:(1)[2]
4RI.1.5: [2]	6:(5)[2]	9:(4)[2]	31:(6)[2]				
4RI.1.6: [3]	6:(1)[2]						
4RI.1.7: [3]	3:(6)[2]						
4RI.1.8							
4RI.1.9: [3]	9:(2)[2]						
4RI.1.10							
4RI.2.0							
4RI.2.1							
4RI.2.2: [3]	20:(5)[2]						

4RI.2.3: [2]	19:(6)[2]	21:(6)[2]	22:(6)[2]				
4RI.2.4							
4RI.2.5							
4RI.2.6							
4WL.0.0							
4WL.1.0							
4WL.1.1							
4WL.1.2: [3]	1:(48)[3]						
4WL.1.3: [3]	1:(8)[3]						
4WL.1.4: [3]	1:(32)[3]						
4WL.1.5							
4WL.1.6							
4WL.1.7							
4WL.1.8							
4WL.1.9							
4WL.1.10							
4WL.2.0							
4WL.2.1							
4WL.3.0							
4WL.3.1: [2]	1:(32)[3]	23:(6)[1]	24:(12)[1]	40:(4)[1]	42:(12)[1]		
4WL.3.2: [1]	25:(6)[1]	40:(1)[1]	41:(12)[1]				
4WL.3.3							
4WL.3.4: [2]	33:(1)[2]						
4WL.3.5							
4WL.3.6							

## ELA Grade 5

Table 5.1a

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Paper*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
5RL.0.0 Reading and Foundation...	2	11	1 2 3	1 6 4	9.09 54.55 36.36	18	0.63	YES
5RI.0.0 Reading, Speaking, and...	2	16	2 3	8 8	50 50	20	1.67	YES
5WL.0.0 Writing and Language ...	3	17.17	1 2 3 4	2 7 7 1	11.76 41.18 41.18 5.88	31	0	YES
Total	7	44.17	1 2 3 4	3 21 19 1	7 48 43 2	69	1.67	

Table 5.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
5RL.0.0 Reading and Foundation...	2	11	18	0.63	36.93	10	58.23	12	4.85	9	YES
5RI.0.0 Reading, Speaking, and...	2	16	20	1.67	21.76	8	64.99	4	13.24	7	YES
5WL.0.0 Writing and Language ...	3	17.17	31	0	10.75	5	63.44	5	25.81	0	YES
Total	7	44.17	69	1.67	20.77	4.9	62.56	2.4	16.67	3.7	
NT = Not Tested											

*Table 5.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
5RL.0.0 Reading and Foundation...	2	11	18	0.63	6.67	0.52	60.61	4.69	YES	40	2	0.78	0.05	YES
5RI.0.0 Reading, Speaking, and...	2	16	20	1.67	5	0.63	31.25	3.95	NO	40	2	0.8	0.06	YES
5WL.0.0 Writing and Language ...	3	17.17	31	0	4.17	0.41	24.24	1.73	NO	20	1	0.76	0.05	YES
Total	7	44.17	69	1.67	5.3	1.27	38.7	19		33	12	0.78	0.02	

*Table 5.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Paper*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5RL.0.0 Reading and Foundation...	YES	YES	YES	YES
5RI.0.0 Reading, Speaking, and...	YES	YES	NO	YES
5WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 5.5a *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 5 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	2	2	2	2	2	2
2	2	2	2	2	2	3
3	2	2	2	2	2	3
4	2	2	2	2	2	3
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	2	2	2	2	2	2
8	2	2	2	2	2	2
9	2	2	2	2	2	2
10	2	2	3	2	2	2
11	2	2	3	2	3	2
12	3	3	3	3	3	3
13	1	1	1	1	1	1
14	1	1	1	1	1	2
15	1	1	1	1	1	1
16	2	2	2	2	2	2
17	2	2	2	2	2	2
18	2	3	3	2	3	2
19	3	2	3	2	3	3
20	2	2	2	2	2	2
21	2	2	2	2	2	2
22	2	2	2	2	2	2
23	2	2	2	2	2	2
24	2	2	2	2	2	2
25	2	2	2	2	2	2
26	2	2	2	2	2	2
27	2	2	2	2	2	2
28	2	2	2	2	2	2
29	2	2	2	2	2	2
30	2	2	2	2	2	2
31	2	2	2	2	2	3
32	3	3	3	2	3	3
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	3	3
36	2	2	2	2	3	2
37	2	2	3	2	3	2
38	2	2	3	2	3	3
39	1	1	1	1	1	2
40	1	1	1	1	1	2
41	1	1	1	1	1	2
42	3	3	3	3	3	3

*Intraclass correlation - .9531*

*Pairwise Comparison - 0.83*

Table 5.6a  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 5 Paper*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2		
2	2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6		
3	2	5RL.1.5			2	5RL.1.5			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6		
4	2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			3	5RL.1.5		
5	2	5RL.1.5			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4		
6	2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.2			2	5RL.1.3			2	5RL.1.3		
7	2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2		
8	2	5RI.1.1			2	5RI.1.1			2	5RI.1.1			2	5RI.1.1			2	5RI.1.1			2	5RI.1.1		
9	2	5RI.1.4			2	5RI.1.2			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4		
10	2	5RI.1.2			2	5RI.1.1			3	5RI.1.1			2	5RI.1.2			2	5RI.1.1			2	5RI.1.1		
11	2	5RI.1.8			2	5RI.1.1			3	5RI.1.1			2	5RI.1.5			3	5RI.1.1			2	5RI.1.1	5RI.1.2	
12	3	5RI.1.2			3	5RI.1.2			3	5RI.1.2			3	5RI.1.2			3	5RI.1.2			3	5RI.1.2		
13	1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2		
14	1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			2	5WL.3.1		
15	1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2		
16	2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4		
17	2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4		
18	2	5RI.1.5			3	5RI.1.8			3	5RI.1.8			2	5RI.1.8			3	5RI.1.8			2	5RI.1.8		
19	3	5RI.1.8	5RI.1.1		2	5RI.1.8	5RI.1.1		3	5RI.1.8			2	5RI.1.8			3	5RI.1.8	5RI.1.1		3	5RI.1.8	5RI.1.1	
20	2	5RI.1.1			2	5RI.1.8			2	5RI.1.7			2	5RI.1.7			2	5RI.1.7			2	5RI.1.7		
21	2	5RI.1.8	5RI.1.1		2	5RI.1.8	5RI.1.1		2	5RI.1.8			2	5RI.1.8			2	5RI.1.8			2	5RI.1.8		
22	2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2		
23	2	5RI.1.1			2	5RI.1.8			2	5RI.1.8			2	5RI.1.8			2	5RI.1.1			2	5RI.1.8		
24	2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4		
25	2	5RI.1.1			2	5RI.1.1			2	5RI.1.1			2	5RI.1.2			2	5RI.1.1			2	5RI.1.1		
26	2	5RI.1.8			2	5RI.1.8			2	5RI.1.1			2	5RI.1.2			2	5RI.1.8			2	5RI.1.8		
27	2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2		
28	2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4		
29	2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5		
30	2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3		
31	2	5RL.1.3			2	5RL.1.6			2	5RL.1.1			2	5RL.1.1			2	5RL.1.1			3	5RL.1.1		

32	3	5RL.1.8			3	5RL.1.8			3	5RL.1.8			2	5RL.1.8			3	5RL.1.8			3	5RL.1.2		
33	2	5RL.1.3			2	5RL.1.2			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5		
34	2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5		
35	2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6			3	5RI.1.2		
36	2	5RL.1.1			2	5RL.1.3			2	5RL.1.8			2	5RL.1.3			3	5RL.1.3			2	5RL.1.3		
37	2	5RL.1.2			2	5RL.1.2			3	5RL.1.2			2	5RL.1.2			3	5RL.1.2			2	5RL.1.2		
38	2	5RL.1.2	5RL.1.3		2	5RL.1.2			3	5RL.1.2			2	5RL.1.2			3	5RL.1.2			3	5RL.1.2		
39	1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			2	5WL.3. 1		
40	1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			2	5WL.3. 1		
41	1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			1	5WL.3. 1			2	5WL.3. 1		
42	3	5WL.1. 2	5WL.3. 1	5WL.1. 4	3	5WL.1. 2	5WL.1. 4	5WL.3. 0	3	5WL.1. 2	5WL.1. 4	5WL.3. 1	3	5WL.1. 2	5WL.1. 4	5WL.3. 1	3	5WL.1. 2	5WL.3. 1	5WL.1. 4	3	5WL.1. 2	5WL.1. 4	5WL.3. 1
Objective Pairwise Comparison: 0.77																								
Standard Pairwise Comparison: 0.99																								



Table 5.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 5 Paper*

Low		Medium				High			
0		28.8				48			
5RL.0.0									
5RL.1.0									
5RL.1.1	31(4)	36(1)							
5RL.1.2	32(1)	33(1)	37(6)	38(6)	1(6)	7(6)	6(1)		
5RL.1.3	6(5)	31(1)	30(6)	33(1)	36(4)	38(1)			
5RL.1.4	28(6)	5(5)							
5RL.1.5	5(1)	3(2)	4(6)	29(6)	33(4)	34(6)			
5RL.1.6	35(5)	31(1)	3(4)	2(6)					
5RL.1.7									
5RL.1.8	36(1)	32(5)							
5RL.1.9									
5RL.2.0									
5RL.2.1									
5RL.2.2									
5RI.0.0									
5RI.1.0									
5RI.1.1	8(6)	10(4)	11(4)	25(5)	26(1)	20(1)	23(2)	21(2)	19(8)
5RI.1.2	22(6)	26(1)	27(6)	25(1)	10(2)	12(6)	9(1)	35(1)	11(1)
5RI.1.3									
5RI.1.4	9(5)	24(6)	16(6)	17(6)					
5RI.1.5	18(1)	11(1)							
5RI.1.6									
5RI.1.7	20(4)								
5RI.1.8	20(1)	21(6)	23(4)	18(5)	19(12)	26(4)	11(1)		
5RI.1.9									
5RI.1.10									

5RI.2.0									
5RI.2.1									
5RI.2.2									
5RI.2.3									
5RI.2.4									
5RI.2.5									
5RI.2.6									
5WL.0.0									
5WL.1.0									
5WL.1.1									
5WL.1.2	42(48)								
5WL.1.3									
5WL.1.4	42(48)								
5WL.1.5									
5WL.1.6									
5WL.1.7									
5WL.1.8									
5WL.1.9									
5WL.1.10									
5WL.2.0									
5WL.2.1									
5WL.3.0	42(8)								
5WL.3.1	39(6)	40(6)	41(6)	14(6)	42(40)				
5WL.3.2	15(12)	13(6)							
5WL.3.3									
5WL.3.4									
5WL.3.5									
5WL.3.6									

Table 5.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 5 Paper*

Low		Medium		High	
9.6		28.8		48	
1 12894	5RL.1.2:6				
2 12687	5RL.1.6:6				
3 12690	5RL.1.5:2	5RL.1.6:4			
4 12671	5RL.1.5:6				
5 12865	5RL.1.4:5	5RL.1.5:1			
6 12663	5RL.1.2:1	5RL.1.3:5			
7 12649	5RL.1.2:6				
8 10272	5RI.1.1:6				
9 9783	5RI.1.2:1	5RI.1.4:5			
10 9784	5RI.1.1:4	5RI.1.2:2			
11 9842	5RI.1.1:4	5RI.1.2:1	5RI.1.5:1	5RI.1.8:1	
12 9833	5RI.1.2:6				
13 9286	5WL.3.2:6				
14 9287	5WL.3.1:6				
15 9288	5WL.3.2:12				
16 11784	5RI.1.4:6				
17 11799	5RI.1.4:6				
18 11786	5RI.1.5:1	5RI.1.8:5			
19 11801	5RI.1.1:8	5RI.1.8:12			
20 11802	5RI.1.1:1	5RI.1.7:4	5RI.1.8:1		
21 12535	5RI.1.1:2	5RI.1.8:6			
22 11779	5RI.1.2:6				
23 9303	5RI.1.1:2	5RI.1.8:4			
24 9305	5RI.1.4:6				
25 9301	5RI.1.1:5	5RI.1.2:1			
26 9304	5RI.1.1:1	5RI.1.2:1	5RI.1.8:4		
27 9302	5RI.1.2:6				
28 13202	5RL.1.4:6				
29 13197	5RL.1.5:6				
30 13149	5RL.1.3:6				
31 13145	5RL.1.1:4	5RL.1.3:1	5RL.1.6:1		
32 13141	5RL.1.2:1	5RL.1.8:5			
33 12069	5RL.1.2:1	5RL.1.3:1	5RL.1.5:4		

34 12068	5RL.1.5:6			
35 12072	5RL.1.6:5	5RL.1.2:1		
36 12067	5RL.1.1:1	5RL.1.3:4	5RL.1.8:1	
37 12064	5RL.1.2:6			
38 12065	5RL.1.2:6	5RL.1.3:1		
39 13124	5WL.3.1:6			
40 13129	5WL.3.1:6			
41 13131	5WL.3.1:6			
42 13236(1a)	5WL.1.2:48	5WL.1.4:48	5WL.3.0:8	5WL.3.1:40

Table 5.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 5 Paper*

Low DOK		Matched DOK		High DOK

5RL.0.0									
5RL.1.0									
5RL.1.1: [2]	31:(4)[2]	36:(1)[2]							
5RL.1.2: [3]	1:(6)[2]	6:(1)[2]	7:(6)[2]	32:(1)[3]	33:(1)[2]	37:(6)[2]	38:(6)[2]		
5RL.1.3: [3]	6:(5)[2]	30:(6)[2]	31:(1)[2]	33:(1)[2]	36:(4)[2]	38:(1)[2]			
5RL.1.4: [2]	5:(5)[2]	28:(6)[2]							
5RL.1.5: [2]	3:(2)[2]	4:(6)[2]	5:(1)[2]	29:(6)[2]	33:(4)[2]	34:(6)[2]			
5RL.1.6: [2]	2:(6)[2]	3:(4)[2]	31:(1)[2]	35:(5)[2]					
5RL.1.7									
5RL.1.8: [3]	32:(5)[3]	36:(1)[2]							
5RL.1.9									
5RL.2.0									
5RL.2.1									
5RL.2.2									
5RI.0.0									
5RI.1.0									
5RI.1.1: [2]	8:(6)[2]	10:(4)[2]	11:(4)[2]	19:(8)[3]	20:(1)[2]	21:(2)[2]	23:(2)[2]	25:(5)[2]	26:(1)[2]
5RI.1.2: [2]	9:(1)[2]	10:(2)[2]	11:(1)[2]	12:(6)[3]	22:(6)[2]	25:(1)[2]	26:(1)[2]	27:(6)[2]	35:(1)[3]
5RI.1.3									
5RI.1.4: [2]	9:(5)[2]	16:(6)[2]	17:(6)[2]	24:(6)[2]					
5RI.1.5: [2]	11:(1)[2]	18:(1)[2]							
5RI.1.6									
5RI.1.7: [3]	20:(4)[2]								
5RI.1.8: [3]	11:(1)[2]	18:(5)[3]	19:(12)[3]	20:(1)[2]	21:(6)[2]	23:(4)[2]	26:(4)[2]		
5RI.1.9									
5RI.1.10									
5RI.2.0									
5RI.2.1									
5RI.2.2									
5RI.2.3									

5RI.2.4									
5RI.2.5									
5RI.2.6									
5WL.0.0									
5WL.1.0									
5WL.1.1									
5WL.1.2: [3]	42:(48)[3]								
5WL.1.3									
5WL.1.4: [3]	42:(48)[3]								
5WL.1.5									
5WL.1.6									
5WL.1.7									
5WL.1.8									
5WL.1.9									
5WL.1.10									
5WL.2.0									
5WL.2.1									
5WL.3.0: [3]	42:(8)[3]								
5WL.3.1: [2]	14:(6)[1]	39:(6)[1]	40:(6)[1]	41:(6)[1]	42:(40)[3]				
5WL.3.2: [1]	13:(6)[1]	15:(12)[1]							
5WL.3.3									
5WL.3.4									
5WL.3.5									
5WL.3.6									

Table 5.1b

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Online*

*Number of Assessment Items - 42*

Reporting Category			Level by Standard			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
5RL.0.0 Reading and Foundation...	2	11	1 2 3	1 6 4	9.09 54.55 36.36	15.5	1.22	YES
5RI.0.0 Reading, Speaking, and...	2	17	2 3	8 8	50 50	19.67	0.82	YES
5WL.0.0 Writing and Language ...	3	17	1 2 3 4	2 7 7 1	11.76 41.18 41.18 5.88	28.33	6.53	YES
Total	7	45	1 2 3 4	3 21 19 1	7 48 43 2	63.5	6.63	

Table 5.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	% Under	SD	% At	SD	% Above	SD	
5RL.0.0 Reading and Foundation...	2	11	15.5	1.22	47.22	10	46.11	11	6.67	7	YES
5RI.0.0 Reading, Speaking, and...	2	17	19.67	0.82	38.89	4	59.44	4	1.67	3	YES
5WL.0.0 Writing and Language ...	3	17	28.33	6.53	14.12	9	64.37	8	21.51	11	YES
Total	7	45	63.5	6.63	29.4	5.9	58.01	2.3	12.6	5.2	
NT = Not Tested											

*Table 5.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
5RL.0.0 Reading and Foundation...	2	11	15.5	1.22	5.33	0.52	48.48	4.69	WEAK	35	2	0.82	0.04	YES
5RI.0.0 Reading, Speaking, and...	2	17	19.67	0.82	8.33	0.82	49.02	4.8	WEAK	45	3	0.78	0.03	YES
5WL.0.0 Writing and Language ...	3	17	28.33	6.53	3.83	0.41	22.55	2.4	NO	20	2	0.77	0.03	YES
Total	7	45	63.5	6.63	5.8	2.29	40.02	15		33	13	0.79	0.02	

*Table 5.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 5 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5RL.0.0 Reading and Foundation...	YES	YES	WEAK	YES
5RI.0.0 Reading, Speaking, and...	YES	YES	WEAK	YES
5WL.0.0 Writing and Language ...	YES	YES	NO	YES



Table 5.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 5 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	3	3	3	3	3	3
2	2	2	3	2	2	2
3	2	3	2	2	2	2
4	2	2	2	2	3	3
5	2	2	2	2	2	2
6	2	2	2	2	3	2
7	2	2	3	2	3	2
8	2	2	3	2	3	3
9	2	2	2	2	2	2
10	2	2	2	2	2	2
11	2	2	2	3	3	2
12	2	2	2	2	2	2
13	2	2	2	2	2	2
14	3	3	3	3	3	3
15	2	2	2	2	2	2
16	2	2	2	2	2	3
17	2	2	2	2	2	3
18	2	2	2	2	2	2
19	2	2	2	2	2	3
20	2	2	2	2	2	2
21	2	2	2	2	2	2
22	2	2	2	2	2	2
23	1	1	1	1	1	1
24	1	1	1	1	1	2
25	1	1	1	1	1	1
26	2	2	2	2	2	2
27	2	3	2	2	3	2
28	2	2	2	2	2	2
29	2	2	2	2	2	2
30	2	2	2	2	2	2
31	2	2	2	2	2	2
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	2
36	2	2	2	2	2	2
37	3	3	3	3	3	3
38	2	2	2	2	2	2
39	2	2	2	2	2	2
40	1	1	1	1	1	2
41	1	1	1	1	1	2
42	1	1	1	1	1	2

*Intraclass correlation - .9556*

*Pairwise Comparison - 0.86*

Table 5.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 5 Online*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	5WL.1.2	5WL.3.1	5WL.1.4	3	5WL.1.2	5WL.1.4	5WL.3.1	3	5WL.1.2	5WL.1.4	5WL.3.1	3	5WL.1.2			3	5WL.1.2	5WL.3.1	5WL.1.4	3	5WL.1.4	5WL.1.2	5WL.3.1
2	2	5RL.1.3			2	5RL.1.2			3	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5		
3	2	5RL.1.5			3	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5		
4	2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6			3	5RL.1.2		
5	2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3		
6	2	5RL.1.1			2	5RL.1.3			2	5RL.1.8			2	5RL.1.3			3	5RL.1.3			2	5RL.1.3		
7	2	5RL.1.2			2	5RL.1.2			3	5RL.1.2			2	5RL.1.2			3	5RL.1.2			2	5RL.1.2		
8	2	5RL.1.2	5RL.1.3		2	5RL.1.2			3	5RL.1.2			2	5RL.1.2			3	5RL.1.2			3	5RL.1.2		
9	2	5RL.1.4			2	5RL.1.2			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4		
10	2	5RL.1.1			2	5RL.1.1			2	5RL.1.1			2	5RL.1.2			2	5RL.1.1			2	5RL.1.1		
11	2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			3	5RL.1.2			3	5RL.1.2			2	5RL.1.2		
12	2	5RL.2.1			2	5RL.2.1			2	5RL.2.1			2	5RL.2.3			2	5RL.2.1			2	5RL.2.1		
13	2	5RL.2.3			2	5RL.2.3			2	5RL.2.3			2	5RL.2.3			2	5RL.2.3			2	5RL.2.3		
14	3	5RL.2.0			3	5RL.2.0			3	5RL.2.0			3	5RL.2.0			3	5RL.2.0			3	5RL.2.0		
15	2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2		
16	2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6		
17	2	5RL.1.5			2	5RL.1.5			2	5RL.1.6			2	5RL.1.6			2	5RL.1.6			3	5RL.1.6		
18	2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.3		
19	2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			2	5RL.1.5			3	5RL.1.5		
20	2	5RL.1.5			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4		
21	2	5RL.1.3			2	5RL.1.3			2	5RL.1.3			2	5RL.1.2			2	5RL.1.3			2	5RL.1.3		
22	2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2			2	5RL.1.2		
23	1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2		
24	1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			2	5WL.3.1		
25	1	5WL.3.2			1	5WL.3.2			1	5WL.3.1			1	5WL.3.2			1	5WL.3.2			1	5WL.3.2		
26	2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4			2	5RL.1.4		
27	2	5RL.1.5			3	5RL.1.8			2	5RL.1.8			2	5RL.1.8			3	5RL.1.8			2	5RL.1.8		
28	2	5RL.1.1			2	5RL.1.8			2	5RL.1.7			2	5RL.1.7			2	5RL.1.7			2	5RL.1.7		

29	2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2		
30	2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2		
31	2	5RI.1.1			2	5RI.1.8			2	5RI.1.8			2	5RI.1.8			2	5RI.1.1			2	5RI.1.8		
32	2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4			2	5RI.1.4		
33	2	5RI.1.1			2	5RI.1.1			2	5RI.1.1			2	5RI.1.2			2	5RI.1.1			2	5RI.1.1		
34	2	5RI.1.8			2	5RI.1.8			2	5RI.1.1			2	5RI.1.2			2	5RI.1.8			2	5RI.1.8		
35	2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2			2	5RI.1.2		
36	2	5RI.2.3			2	5RI.2.3			2	5RI.2.3			2	5RI.2.3			2	5RI.2.3			2	5RI.2.3		
37	3	5RI.2.3			3	5RI.2.3			3	5RI.2.3			3	5RI.2.3			3	5RI.2.3			3	5RI.2.3		
38	2	5RI.2.0			2	5RI.2.0			2	5RI.2.0			2	5RI.2.0			2	5RI.2.0			2	5RI.2.0		
39	2	5RI.2.2			2	5RI.2.2			2	5RI.2.2			2	5RI.2.2			2	5RI.2.2			2	5RI.2.0		
40	1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			2	5WL.3.1		
41	1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			2	5WL.3.1		
42	1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			1	5WL.3.1			2	5WL.3.1		
Objective Pairwise Comparison: 0.8																								
Standard Pairwise Comparison: 0.98																								

Table 5.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 5 Online*

Low			Medium			High		
0			28.8			48		
5RL.0.0								
5RL.1.0								
5RL.1.1	10(1)	6(1)						
5RL.1.2	15(6)	2(1)	4(1)	7(6)	8(6)	21(1)	22(6)	
5RL.1.3	21(5)	18(6)	2(1)	6(4)	5(6)	8(1)		
5RL.1.4	9(1)	20(5)						
5RL.1.5	20(1)	19(6)	17(2)	2(4)	3(6)			
5RL.1.6	4(5)	16(6)	17(4)					
5RL.1.7								
5RL.1.8	6(1)							
5RL.1.9								
5RL.2.0								
5RL.2.1								
5RL.2.2								
5RI.0.0								
5RI.1.0								
5RI.1.1	10(4)	28(1)	31(2)	33(5)	34(1)			
5RI.1.2	34(1)	33(1)	35(6)	29(6)	30(6)	10(1)	11(6)	9(1)
5RI.1.3								
5RI.1.4	9(4)	26(6)	32(6)					
5RI.1.5	27(1)							
5RI.1.6								
5RI.1.7	28(4)							
5RI.1.8	28(1)	31(4)	27(5)	34(4)				
5RI.1.9								
5RI.1.10								

5RI.2.0	38(6)	39(1)	14(6)				
5RI.2.1	12(5)						
5RI.2.2	39(5)						
5RI.2.3	36(6)	37(6)	12(1)	13(6)			
5RI.2.4							
5RI.2.5							
5RI.2.6							
5WL.0.0							
5WL.1.0							
5WL.1.1							
5WL.1.2	1(48)						
5WL.1.3							
5WL.1.4	1(40)						
5WL.1.5							
5WL.1.6							
5WL.1.7							
5WL.1.8							
5WL.1.9							
5WL.1.10							
5WL.2.0							
5WL.2.1							
5WL.3.0							
5WL.3.1	24(6)	25(2)	40(6)	41(6)	42(6)	1(40)	
5WL.3.2	25(10)	23(6)					
5WL.3.3							
5WL.3.4							
5WL.3.5							
5WL.3.6							

Table 5.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 5 Online*

	Low	Medium	High
	9.6	28.8	48
1 13236	5WL.1.2:48	5WL.1.4:40	5WL.3.1:40
2 12069	5RL.1.2:1	5RL.1.3:1	5RL.1.5:4
3 12068	5RL.1.5:6		
4 12072	5RL.1.2:1	5RL.1.6:5	
5 12066	5RL.1.3:6		
6 12067	5RL.1.1:1	5RL.1.3:4	5RL.1.8:1
7 12064	5RL.1.2:6		
8 12065	5RL.1.2:6	5RL.1.3:1	
9 9783	5RL.1.4:1	5RI.1.2:1	5RI.1.4:4
10 9784	5RL.1.1:1	5RI.1.1:4	5RI.1.2:1
11 9842	5RI.1.2:6		
12 9808	5RI.2.1:5	5RI.2.3:1	
13 10273	5RI.2.3:6		
14 9782	5RI.2.0:6		
15 12894	5RL.1.2:6		
16 12687	5RL.1.6:6		
17 12690	5RL.1.5:2	5RL.1.6:4	
18 12706	5RL.1.3:6		
19 12671	5RL.1.5:6		
20 12865	5RL.1.4:5	5RL.1.5:1	
21 12663	5RL.1.2:1	5RL.1.3:5	
22 12649	5RL.1.2:6		
23 9286	5WL.3.2:6		
24 9287	5WL.3.1:6		
25 9288	5WL.3.1:2	5WL.3.2:10	
26 11799	5RI.1.4:6		
27 11786	5RI.1.5:1	5RI.1.8:5	
28 11802	5RI.1.1:1	5RI.1.7:4	5RI.1.8:1
29 11779	5RI.1.2:6		
30 12439	5RI.1.2:6		
31 9303	5RI.1.1:2	5RI.1.8:4	
32 9305	5RI.1.4:6		

33 9301	5RI.1.1:5	5RI.1.2:1	
34 9304	5RI.1.1:1	5RI.1.2:1	5RI.1.8:4
35 9302	5RI.1.2:6		
36 12425	5RI.2.3:6		
37 12440	5RI.2.3:6		
38 12851	5RI.2.0:6		
39 12852	5RI.2.0:1	5RI.2.2:5	
40 13124	5WL.3.1:6		
41 13129	5WL.3.1:6		
42 13131	5WL.3.1:6		

Table 5.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 5 Online*

Low DOK		Matched DOK		High DOK

5RL.0.0								
5RL.1.0								
5RL.1.1: [2]	6:(1)[2]	10:(1)[2]						
5RL.1.2: [3]	2:(1)[2]	4:(1)[3]	7:(6)[2]	8:(6)[2]	15:(6)[2]	21:(1)[2]	22:(6)[2]	
5RL.1.3: [3]	2:(1)[2]	5:(6)[2]	6:(4)[2]	8:(1)[2]	18:(6)[2]	21:(5)[2]		
5RL.1.4: [2]	9:(1)[2]	20:(5)[2]						
5RL.1.5: [2]	2:(4)[2]	3:(6)[2]	17:(2)[2]	19:(6)[2]	20:(1)[2]			
5RL.1.6: [2]	4:(5)[2]	16:(6)[2]	17:(4)[2]					
5RL.1.7								
5RL.1.8: [3]	6:(1)[2]							
5RL.1.9								
5RL.2.0								
5RL.2.1								
5RL.2.2								
5RI.0.0								
5RI.1.0								
5RI.1.1: [2]	10:(4)[2]	28:(1)[2]	31:(2)[2]	33:(5)[2]	34:(1)[2]			
5RI.1.2: [2]	9:(1)[2]	10:(1)[2]	11:(6)[2]	29:(6)[2]	30:(6)[2]	33:(1)[2]	34:(1)[2]	35:(6)[2]
5RI.1.3								
5RI.1.4: [2]	9:(4)[2]	26:(6)[2]	32:(6)[2]					
5RI.1.5: [2]	27:(1)[2]							
5RI.1.6								
5RI.1.7: [3]	28:(4)[2]							
5RI.1.8: [3]	27:(5)[2]	28:(1)[2]	31:(4)[2]	34:(4)[2]				
5RI.1.9								
5RI.1.10								
5RI.2.0: [3]	14:(6)[3]	38:(6)[2]	39:(1)[2]					
5RI.2.1: [3]	12:(5)[2]							
5RI.2.2: [3]	39:(5)[2]							



5RI.2.3: [3]	12:(1)[2]	13:(6)[2]	36:(6)[2]	37:(6)[3]				
5RI.2.4								
5RI.2.5								
5RI.2.6								
5WL.0.0								
5WL.1.0								
5WL.1.1								
5WL.1.2: [3]	1:(48)[3]							
5WL.1.3								
5WL.1.4: [3]	1:(40)[3]							
5WL.1.5								
5WL.1.6								
5WL.1.7								
5WL.1.8								
5WL.1.9								
5WL.1.10								
5WL.2.0								
5WL.2.1								
5WL.3.0								
5WL.3.1: [2]	1:(40)[3]	24:(6)[1]	25:(2)[1]	40:(6)[1]	41:(6)[1]	42:(6)[1]		
5WL.3.2: [1]	23:(6)[1]	25:(10)[1]						
5WL.3.3								
5WL.3.4								
5WL.3.5								
5WL.3.6								

## ELA Grade 6

Table 6.1a

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Paper*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standards #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
6RL.0.0 Reading Standards for ...	1	9	2 3	3 6	33.33 66.67	16.83	0.41	YES
6RI.0.0 Reading, Speaking, and...	2	16	2 3	5 11	31.25 68.75	20.67	1.21	YES
6WL.0.0 Writing and Language ...	2	16	1 2 3 4	2 4 9 1	12.5 25 56.25 6.25	32	0	YES
Total	5	41	1 2 3 4	2 12 26 1	5 29 63 2	69.5	1.22	

Table 6.2a

*Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Custer #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
6RL.0.0 Reading Standards for ...	1	9	16.83	0.41	62.44	6	36.58	5	0.98	2	NO
6RI.0.0 Reading, Speaking, and...	2	16	20.67	1.21	47.89	12	50.66	10	1.45	4	YES
6WL.0.0 Writing and Language ...	2	16	32	0	0	0	75	0	25	0	YES
Total	5	41	69.5	1.22	29.26	4	58.51	3.2	12.23	1.5	
NT = Not Tested											

*Table 6.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
6RL.0.0 Reading Standards for ...	1	9	16.83	0.41	6	0.63	66.67	7.03	YES	38	1	0.78	0.03	YES
6RI.0.0 Reading, Speaking, and...	2	16	20.67	1.21	7.17	1.17	44.79	7.31	WEAK	44	2	0.8	0.05	YES
6WL.0.0 Writing and Language ...	2	16	32	0	4	0	25	0	NO	18	0	0.81	0.02	YES
Total	5	41	69.5	1.22	5.7	1.6	45.49	21		33	14	0.8	0.01	

*Table 6.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Paper*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
6RL.0.0 Reading Standards for ...	YES	NO	YES	YES
6RI.0.0 Reading, Speaking, and...	YES	YES	WEAK	YES
6WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 6.5a *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 6 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	2	2	2	2	2	2
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	3	3	3	3	3	3
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	2	2	2	2	2	2
8	2	2	2	2	2	2
9	2	2	2	2	2	2
10	2	3	2	2	2	2
11	2	2	2	2	2	2
12	2	2	2	2	3	2
13	2	2	3	2	3	2
14	2	2	2	2	2	2
15	2	2	2	2	2	2
16	2	3	2	2	2	2
17	1	1	1	1	1	1
18	1	1	1	1	1	1
19	2	3	3	2	3	2
20	2	3	3	2	2	2
21	2	2	2	2	2	2
22	2	3	2	2	3	2
23	1	2	2	2	2	2
24	2	2	2	2	2	2
25	2	2	2	2	2	2
26	2	2	2	2	2	2
27	2	2	2	2	2	2
28	2	2	2	2	2	2
29	2	2	2	2	2	2
30	3	3	2	2	3	2
31	3	3	2	2	3	2
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	2
36	3	3	2	2	2	3
37	2	2	2	2	2	2
38	3	3	2	2	3	3
39	1	1	1	1	1	1
40	1	1	1	1	1	1
41	1	1	1	1	1	1
42	3	3	3	3	3	3

*Intraclass correlation - .9622*

*Pairwise Comparison - 0.86*

Table 6.6a  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 6 Paper*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
2	2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
3	3	6RL.1.2			3	6RL.1.3			3	6RL.1.2			3	6RL.1.8			3	6RL.1.2			3	6RL.1.2		
4	3	6RL.1.8			3	6RL.1.8			3	6RL.1.8			3	6RL.1.8			3	6RL.1.8			3	6RL.1.8		
5	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
6	2	6RL.1.1			2	6RL.1.1			2	6RL.1.6			2	6RL.1.1			2	6RL.1.1			2	6RL.1.6		
7	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.5			2	6RL.1.2			2	6RL.1.2		
8	2	6RL.1.3			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
9	2	6RL.1.1			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
10	2	6RL.1.6			3	6RL.1.6			2	6RL.1.6			2	6RL.1.5			2	6RL.1.5			2	6RL.1.6		
11	2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
12	2	6RL.1.5			2	6RL.1.5			2	6RL.1.5			2	6RL.1.5			3	6RL.1.5			2	6RL.1.5		
13	2	6RL.1.7			2	6RL.1.2			3	6RL.1.7			2	6RL.1.7			3	6RL.1.7			2	6RL.1.3		
14	2	6RL.1.1			2	6RL.1.1			2	6RL.1.5			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
15	2	6RL.1.6			2	6RL.1.6			2	6RL.1.6			2	6RL.1.6			2	6RL.1.6			2	6RL.1.6		
16	2	6RL.1.2			3	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
17	1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2		
18	1	6WL.2.1			1	6WL.2.2			1	6WL.2.2			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
19	2	6RL.1.5			3	6RL.1.3			3	6RL.1.5			2	6RL.1.3			3	6RL.1.5			2	6RL.1.5		
20	2	6RL.1.1			3	6RL.1.8	6RL.1.1		3	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
21	2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
22	2	6RL.1.6			3	6RL.1.6			2	6RL.1.6			2	6RL.1.3			3	6RL.1.6			2	6RL.1.6		
23	1	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
24	2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.4		
25	2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.3		
26	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
27	2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
28	2	6RL.1.5			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
29	2	6RL.1.5			2	6RL.1.5			2	6RL.1.5			2	6RL.1.3			2	6RL.1.5			2	6RL.1.5		
30	3	6RL.1.8			3	6RL.1.8			2	6RL.1.8			2	6RL.1.8			3	6RL.1.8			2	6RL.1.8		
31	3	6RL.1.8			3	6RL.1.8			2	6RL.1.8			2	6RL.1.8			3	6RL.1.8			2	6RL.1.8		

32	2	6RL.1.2			2	6RL.1.2	6RL.1.1		2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
33	2	6RI.1.5			2	6RI.1.5			2	6RI.1.2			2	6RI.1.5			2	6RI.1.5			2	6RI.1.2		
34	2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1		
35	2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4		
36	3	6RI.1.9			3	6RI.1.9			2	6RI.1.1			2	6RI.1.9			2	6RI.1.1			3	6RI.1.9		
37	2	6RI.1.2			2	6RI.1.2	6RI.1.1		2	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2		
38	3	6RI.1.6			3	6RI.1.6			2	6RI.1.6			2	6RI.1.6			3	6RI.1.6			3	6RI.1.6		
39	1	6WL.2.1			1	6WL.2.2			1	6WL.2.2			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
40	1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2		
41	1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
42	3	6WL.1.1	6WL.1.4	6WL.2.1	3	6WL.1.1	6WL.1.4	6WL.2.1	3	6WL.1.1	6WL.1.4	6WL.2.1	3	6WL.1.1	6WL.1.4	6WL.2.1	3	6WL.1.1	6WL.1.4	6WL.2.1	3	6WL.1.1	6WL.1.4	6WL.2.1
Objective Pairwise Comparison: 0.77																								
Standard Pairwise Comparison: 0.98																								

Table 6.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 6 Paper*

Low		Medium		High			
0		28.8				48	
6RL.0.0							
6RL.1.0							
6RL.1.1	1(6)	8(5)	6(4)	24(5)	25(5)	32(1)	
6RL.1.2	5(6)	7(5)	3(4)	32(6)	26(5)		
6RL.1.3	3(1)	8(1)	25(1)	29(1)			
6RL.1.4	24(1)	27(6)	28(5)	2(6)			
6RL.1.5	7(1)	28(1)	29(5)				
6RL.1.6	6(2)						
6RL.1.7							
6RL.1.8	4(6)	30(6)	31(6)				
6RL.1.9							
6RI.0.0							
6RI.1.0							
6RI.1.1	23(6)	9(1)	14(5)	36(2)	34(6)	37(1)	20(6)
6RI.1.2	33(2)	37(6)	26(1)	13(1)	9(5)	16(12)	
6RI.1.3	19(2)	22(1)	13(1)				
6RI.1.4	11(6)	21(6)	35(6)				
6RI.1.5	33(4)	19(4)	12(6)	14(1)	10(2)		
6RI.1.6	10(4)	15(6)	22(5)	38(6)			
6RI.1.7	13(4)						
6RI.1.8	3(1)	20(1)					
6RI.1.9	36(4)						
6RI.1.10							
6RI.2.0							
6RI.2.1							
6RI.2.2							

6RI.2.3							
6RI.2.4							
6RI.2.5							
6RI.2.6							
6WL.0.0							
6WL.1.0							
6WL.1.1	42(48)						
6WL.1.2							
6WL.1.3							
6WL.1.4	42(48)						
6WL.1.5							
6WL.1.6							
6WL.1.7							
6WL.1.8							
6WL.1.9							
6WL.1.10							
6WL.2.0							
6WL.2.1	41(12)	39(4)	18(4)	42(48)			
6WL.2.2	18(2)	17(12)	39(2)	40(12)			
6WL.2.3							
6WL.2.4							
6WL.2.5							
6WL.2.6							



Table 6.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 6 Paper*

Low		Medium		High	
9.6		28.8		48	
1 13259	6RL.1.1:6				
2 13261	6RL.1.4:6				
3 13263	6RL.1.2:4	6RL.1.3:1		6RI.1.8:1	
4 13264	6RL.1.8:6				
5 13266	6RL.1.2:6				
6 13270	6RL.1.1:4	6RL.1.6:2			
7 13274	6RL.1.2:5	6RL.1.5:1			
8 13287	6RL.1.1:5	6RL.1.3:1			
9 12407	6RI.1.1:1	6RI.1.2:5			
10 12409	6RI.1.5:2	6RI.1.6:4			
11 12410	6RI.1.4:6				
12 12412	6RI.1.5:6				
13 12415	6RI.1.2:1	6RI.1.3:1		6RI.1.7:4	
14 12411	6RI.1.1:5	6RI.1.5:1			
15 12868	6RI.1.6:6				
16 12895	6RI.1.2:12				
17 9724	6WL.2.2:12				
18 9726	6WL.2.1:4	6WL.2.2:2			
19 13300	6RI.1.3:2	6RI.1.5:4			
20 13302	6RI.1.1:6	6RI.1.8:1			
21 13303	6RI.1.4:6				
22 13313	6RI.1.3:1	6RI.1.6:5			
23 13315	6RI.1.1:6				
24 13251	6RL.1.1:5	6RL.1.4:1			
25 13252	6RL.1.1:5	6RL.1.3:1			
26 13253	6RL.1.2:5	6RI.1.2:1			
27 13255	6RL.1.4:6				
28 13256	6RL.1.4:5	6RL.1.5:1			
29 13257	6RL.1.3:1	6RL.1.5:5			
30 13267	6RL.1.8:6				
31 13268	6RL.1.8:6				
32 13269	6RL.1.1:1	6RL.1.2:6			
33 9131	6RI.1.2:2	6RI.1.5:4			

34 9135	6RI.1.1:6		
35 9137	6RI.1.4:6		
36 9154	6RI.1.1:2	6RI.1.9:4	
37 9168	6RI.1.1:1	6RI.1.2:6	
38 9169	6RI.1.6:6		
39 9107	6WL.2.1:4	6WL.2.2:2	
40 9108	6WL.2.2:12		
41 9109	6WL.2.1:12		
42 13308(1a)	6WL.1.1:48	6WL.1.4:48	6WL.2.1:48

Table 6.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 6 Paper*

Low DOK		Matched DOK		High DOK

6RL.0.0							
6RL.1.0							
6RL.1.1: [3]	1:(6)[2]	6:(4)[2]	8:(5)[2]	24:(5)[2]	25:(5)[2]	32:(1)[2]	
6RL.1.2: [3]	3:(4)[3]	5:(6)[2]	7:(5)[2]	26:(5)[2]	32:(6)[2]		
6RL.1.3: [2]	3:(1)[3]	8:(1)[2]	25:(1)[2]	29:(1)[2]			
6RL.1.4: [2]	2:(6)[2]	24:(1)[2]	27:(6)[2]	28:(5)[2]			
6RL.1.5: [3]	7:(1)[2]	28:(1)[2]	29:(5)[2]				
6RL.1.6: [3]	6:(2)[2]						
6RL.1.7							
6RL.1.8: [3]	4:(6)[3]	30:(6)[2]	31:(6)[2]				
6RL.1.9							
6RI.0.0							
6RI.1.0							
6RI.1.1: [3]	9:(1)[2]	14:(5)[2]	20:(6)[2]	23:(6)[2]	34:(6)[2]	36:(2)[2]	37:(1)[2]
6RI.1.2: [2]	9:(5)[2]	13:(1)[2]	16:(12)[2]	26:(1)[2]	33:(2)[2]	37:(6)[2]	
6RI.1.3: [3]	13:(1)[2]	19:(2)[2]	22:(1)[2]				
6RI.1.4: [2]	11:(6)[2]	21:(6)[2]	35:(6)[2]				
6RI.1.5: [3]	10:(2)[2]	12:(6)[2]	14:(1)[2]	19:(4)[2]	33:(4)[2]		
6RI.1.6: [3]	10:(4)[2]	15:(6)[2]	22:(5)[2]	38:(6)[3]			
6RI.1.7: [3]	13:(4)[2]						
6RI.1.8: [3]	3:(1)[3]	20:(1)[3]					
6RI.1.9: [3]	36:(4)[3]						
6RI.1.10							
6RI.2.0							
6RI.2.1							
6RI.2.2							
6RI.2.3							
6RI.2.4							
6RI.2.5							
6RI.2.6							

6WL.0.0							
6WL.1.0							
6WL.1.1: [3]	42:(48)[3]						
6WL.1.2							
6WL.1.3							
6WL.1.4: [3]	42:(48)[3]						
6WL.1.5							
6WL.1.6							
6WL.1.7							
6WL.1.8							
6WL.1.9							
6WL.1.10							
6WL.2.0							
6WL.2.1: [1]	18:(4)[1]	39:(4)[1]	41:(12)[1]	42:(48)[3]			
6WL.2.2: [1]	17:(12)[1]	18:(2)[1]	39:(2)[1]	40:(12)[1]			
6WL.2.3							
6WL.2.4							
6WL.2.5							
6WL.2.6							

Table 6.1b

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Online*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster#	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
6RL.0.0 Reading Standards for ...	1	9	2 3	3 6	33.33 66.67	15	0.63	YES
6RI.0.0 Reading, Speaking, and...	2	16	2 3	5 11	31.25 68.75	22.33	0.52	YES
6WL.0.0 Writing and Language ...	2	16	1 2 3 4	2 4 9 1	12.5 25 56.25 6.25	32	0	YES
Total	5	41	1 2 3 4	2 12 26 1	5 29 63 2	69.33	0.82	

Table 6.2b

*Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	Under	SD	At	SD	Above	SD	
6RL.0.0 Reading Standards for ...	1	9	15	0.63	67.89	8	32.11	8	0	0	NO
6RI.0.0 Reading, Speaking, and...	2	16	22.33	0.52	47.86	9	50.69	9	1.45	4	YES
6WL.0.0 Writing and Language ...	2	16	32	0	0	0	79.17	10	20.83	10	YES
Total	5	41	69.33	0.82	30.05	2.5	59.86	4.6	10.1	3.6	
NT = Not Tested											

*Table 6.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
6RL.0.0 Reading Standards for ...	1	9	15	0.63	4.83	0.41	53.7	4.54	YES	34	1	0.78	0.04	YES
6RI.0.0 Reading, Speaking, and...	2	16	22.33	0.52	9	0.89	56.25	5.59	YES	48	1	0.8	0.05	YES
6WL.0.0 Writing and Language ...	2	16	32	0	4	0	25	0	NO	18	0	0.78	0.06	YES
Total	5	41	69.33	0.82	5.9	2.68	44.98	17		33	15	0.79	0.01	

*Table 6.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 6 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
6RL.0.0 Reading Standards for ...	YES	NO	YES	YES
6RI.0.0 Reading, Speaking, and...	YES	YES	YES	YES
6WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 6.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 6 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	3	3	3	3	3	3
2	2	2	2	2	2	2
3	2	2	2	2	2	2
4	2	2	2	2	2	2
5	2	2	2	2	2	2
6	2	2	2	2	2	2
7	2	2	2	2	2	2
8	2	2	2	2	2	3
9	2	2	2	2	2	2
10	2	3	2	2	3	3
11	2	2	2	2	2	2
12	2	2	2	2	2	2
13	3	3	3	3	3	3
14	3	3	3	3	2	3
15	2	2	2	2	2	2
16	2	2	2	2	2	2
17	2	2	2	2	2	2
18	2	2	2	2	2	2
19	2	2	2	2	2	2
20	3	3	3	3	3	3
21	3	3	3	3	3	3
22	3	3	3	3	3	3
23	3	3	3	2	3	3
24	2	2	2	2	2	2
25	1	1	1	1	1	1
26	1	1	1	1	1	1
27	2	2	2	2	2	2
28	2	2	2	2	2	2
29	2	3	3	2	2	2
30	2	2	2	2	2	2
31	2	2	3	2	3	2
32	2	2	2	2	2	2
33	2	3	2	2	2	2
34	2	2	2	2	2	2
35	2	2	2	2	2	2
36	2	2	2	2	2	2
37	3	2	2	2	3	2
38	3	3	2	2	3	2
39	2	2	2	2	2	2
40	1	1	1	1	1	1
41	1	1	1	1	1	1
42	1	1	1	1	1	1

*Intraclass correlation - .9767*

*Pairwise Comparison - 0.9*

Table 6.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 6 Online*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	6WL.1.2	6WL.1.4	6WL.2.1	3	6WL.1.2	6WL.1.4	6WL.1.4	3	6WL.1.2	6WL.1.4	6WL.2.1	3	6WL.1.2	6WL.1.4	6WL.2.1	3	6WL.1.2	6WL.1.4	6WL.2.1	3	6WL.1.2	6WL.1.4	6WL.2.1
2	2	6RI.1.5			2	6RI.1.5			2	6RI.1.2			2	6RI.1.5			2	6RI.1.5			2	6RI.1.2		
3	2	6RI.1.7			2	6RI.1.7			2	6RI.1.7			2	6RI.1.3			2	6RI.1.7			2	6RI.1.7		
4	2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1		
5	2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4		
6	2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4			2	6RI.1.4		
7	2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5		
8	2	6RI.1.9			2	6RI.1.9			2	6RI.1.1			2	6RI.1.9			2	6RI.1.1			3	6RI.1.9		
9	2	6RI.1.2			2	6RI.1.2	6RI.1.1		2	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2		
10	2	6RI.1.6			3	6RI.1.6			2	6RI.1.6			2	6RI.1.6			3	6RI.1.6			3	6RI.1.6		
11	2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
12	2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
13	3	6RL.1.2			3	6RL.1.2			3	6RL.1.2			3	6RL.1.8			3	6RL.1.2			3	6RL.1.2		
14	3	6RL.1.8			3	6RL.1.8			3	6RL.1.8			3	6RL.1.8			2	6RL.1.8			3	6RL.1.8		
15	2	6RL.1.1			2	6RL.1.1			2	6RL.1.6			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
16	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.1			2	6RL.1.2			2	6RL.1.2		
17	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
18	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.5			2	6RL.1.2			2	6RL.1.2		
19	2	6RL.1.3			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1		
20	3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2		
21	3	6RI.2.4			3	6RI.2.4			3	6RI.2.4			3	6RI.2.4			3	6RI.2.4			3	6RI.2.4		
22	3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2			3	6RI.2.2		
23	3	6RI.2.4			3	6RI.2.2			3	6RI.2.2			2	6RI.2.2			3	6RI.2.2			3	6RI.2.2		
24	2	6RI.2.2			2	6RI.2.2			2	6RI.2.2			2	6RI.2.2			2	6RI.2.2			2	6RI.2.2		
25	1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2		
26	1	6WL.2.1			1	6WL.2.2			1	6WL.2.2			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
27	2	6RI.1.1			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2		
28	2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5			2	6RI.1.5		
29	2	6RI.1.6			3	6RI.1.6			3	6RI.1.6			2	6RI.1.5			2	6RI.1.5			2	6RI.1.6		
30	2	6RI.1.1			2	6RI.1.1			2	6RI.1.5			2	6RI.1.1			2	6RI.1.1			2	6RI.1.1		



31	2	6RI.1.7			2	6RI.1.2			3	6RI.1.7			2	6RI.1.7			3	6RI.1.7			2	6RI.1.3		
32	2	6RI.1.6			2	6RI.1.6			2	6RI.1.6			2	6RI.1.6			2	6RI.1.6			2	6RI.1.6		
33	2	6RI.1.2			3	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2			2	6RI.1.2		
34	2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.1			2	6RL.1.3		
35	2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
36	2	6RL.1.4			2	6RL.1.4			2	6RI.1.4			2	6RL.1.4			2	6RL.1.4			2	6RL.1.4		
37	3	6RL.1.8			2	6RL.1.5			2	6RL.1.8			2	6RL.1.8			3	6RL.1.8			2	6RL.1.8		
38	3	6RL.1.8			3	6RL.1.8			2	6RL.1.8			2	6RL.1.8			3	6RL.1.8			2	6RL.1.8		
39	2	6RL.1.2			2	6RL.1.1	6RL.1.2		2	6RL.1.2			2	6RL.1.2			2	6RL.1.2			2	6RL.1.2		
40	1	6WL.2.1			1	6WL.2.2			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
41	1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2			1	6WL.2.2		
42	1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1			1	6WL.2.1		
Objective Pairwise Comparison: 0.8																								
Standard Pairwise Comparison: 0.99																								

Table 6.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 6 Online*

Low		Medium		High	
0		33.6		56	
6RL.0.0					
6RL.1.0					
6RL.1.1	11(6)	16(1)	19(5)	15(5)	39(1)
6RL.1.2	35(6)	13(5)	16(5)	17(6)	18(5)
6RL.1.3	19(1)	34(1)			
6RL.1.4	36(5)	12(6)			
6RL.1.5	18(1)	37(1)			
6RL.1.6	15(1)				
6RL.1.7					
6RL.1.8	13(1)	14(6)	37(5)	38(6)	
6RL.1.9					
6RI.0.0					
6RI.1.0					
6RI.1.1	30(5)	27(1)	4(6)	8(2)	9(1)
6RI.1.2	2(2)	9(6)	27(5)	31(1)	33(12)
6RI.1.3	31(1)	3(1)			
6RI.1.4	5(6)	6(6)	36(1)		
6RI.1.5	30(1)	7(6)	2(4)	28(6)	29(2)
6RI.1.6	29(4)	10(6)	32(6)		
6RI.1.7	31(4)	3(5)			
6RI.1.8					
6RI.1.9	8(4)				
6RI.1.10					
6RI.2.0					
6RI.2.1					
6RI.2.2	24(6)	22(6)	23(5)	20(6)	

6RI.2.3						
6RI.2.4	21(6)	23(1)				
6RI.2.5						
6RI.2.6						
6WL.0.0						
6WL.1.0						
6WL.1.1						
6WL.1.2	1(48)					
6WL.1.3						
6WL.1.4	1(56)					
6WL.1.5						
6WL.1.6						
6WL.1.7						
6WL.1.8						
6WL.1.9						
6WL.1.10						
6WL.2.0						
6WL.2.1	26(4)	42(12)	40(5)	1(40)		
6WL.2.2	40(1)	41(12)	26(2)	25(12)		
6WL.2.3						
6WL.2.4						
6WL.2.5						
6WL.2.6						

Table 6.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 6 Online*

	Low	Medium	High
	9.6	28.8	48
1 13304	6WL.1.2:48	6WL.1.4:48	6WL.2.1:40
2 9131	6RI.1.2:2	6RI.1.5:4	
3 9134	6RI.1.3:1	6RI.1.7:5	
4 9135	6RI.1.1:6		
5 9137	6RI.1.4:6		
6 9138	6RI.1.4:6		
7 9153	6RI.1.5:6		
8 9154	6RI.1.1:2	6RI.1.9:4	
9 9168	6RI.1.1:1	6RI.1.2:6	
10 9169	6RI.1.6:6		
11 13259	6RL.1.1:6		
12 13261	6RL.1.4:6		
13 13263	6RL.1.2:5	6RL.1.8:1	
14 13264	6RL.1.8:6		
15 13270	6RL.1.1:5	6RL.1.6:1	
16 13271	6RL.1.1:1	6RL.1.2:5	
17 13272	6RL.1.2:6		
18 13274	6RL.1.2:5	6RL.1.5:1	
19 13287	6RL.1.1:5	6RL.1.3:1	
20 11875	6RI.2.2:6		
21 11876	6RI.2.4:6		
22 11877	6RI.2.2:6		
23 11879	6RI.2.2:5	6RI.2.4:1	
24 11880	6RI.2.2:6		
25 9724	6WL.2.2:12		
26 9726	6WL.2.1:4	6WL.2.2:2	
27 12407	6RI.1.1:1	6RI.1.2:5	
28 12408	6RI.1.5:6		
29 12409	6RI.1.5:2	6RI.1.6:4	
30 12411	6RI.1.1:5	6RI.1.5:1	
31 12415	6RI.1.2:1	6RI.1.3:1	6RI.1.7:4
32 12868	6RI.1.6:6		

33 12895	6RI.1.2:12	
34 13252	6RL.1.1:5	6RL.1.3:1
35 13253	6RL.1.2:6	
36 13255	6RL.1.4:5	6RI.1.4:1
37 13267	6RL.1.5:1	6RL.1.8:5
38 13268	6RL.1.8:6	
39 13269	6RL.1.1:1	6RL.1.2:6
40 9107	6WL.2.1:5	6WL.2.2:1
41 9108	6WL.2.2:12	
42 9109	6WL.2.1:12	

Table 6.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 6 Online*

Low DOK		Matched DOK		High DOK

6RL.0.0						
6RL.1.0						
6RL.1.1: [3]	11:(6)[2]	15:(5)[2]	16:(1)[2]	19:(5)[2]	34:(5)[2]	39:(1)[2]
6RL.1.2: [3]	13:(5)[3]	16:(5)[2]	17:(6)[2]	18:(5)[2]	35:(6)[2]	39:(6)[2]
6RL.1.3: [2]	19:(1)[2]	34:(1)[2]				
6RL.1.4: [2]	12:(6)[2]	36:(5)[2]				
6RL.1.5: [3]	18:(1)[2]	37:(1)[2]				
6RL.1.6: [3]	15:(1)[2]					
6RL.1.7						
6RL.1.8: [3]	13:(1)[3]	14:(6)[3]	37:(5)[2]	38:(6)[2]		
6RL.1.9						
6RI.0.0						
6RI.1.0						
6RI.1.1: [3]	4:(6)[2]	8:(2)[2]	9:(1)[2]	27:(1)[2]	30:(5)[2]	
6RI.1.2: [2]	2:(2)[2]	9:(6)[2]	27:(5)[2]	31:(1)[2]	33:(12)[2]	
6RI.1.3: [3]	3:(1)[2]	31:(1)[2]				
6RI.1.4: [2]	5:(6)[2]	6:(6)[2]	36:(1)[2]			
6RI.1.5: [3]	2:(4)[2]	7:(6)[2]	28:(6)[2]	29:(2)[2]	30:(1)[2]	
6RI.1.6: [3]	10:(6)[2]	29:(4)[2]	32:(6)[2]			
6RI.1.7: [3]	3:(5)[2]	31:(4)[2]				
6RI.1.8						
6RI.1.9: [3]	8:(4)[2]					
6RI.1.10						
6RI.2.0						
6RI.2.1						
6RI.2.2: [3]	20:(6)[3]	22:(6)[3]	23:(5)[3]	24:(6)[2]		
6RI.2.3						
6RI.2.4: [3]	21:(6)[3]	23:(1)[3]				
6RI.2.5						

6RI.2.6						
6WL.0.0						
6WL.1.0						
6WL.1.1						
6WL.1.2: [3]	1:(48)[3]					
6WL.1.3						
6WL.1.4: [3]	1:(48)[3]					
6WL.1.5						
6WL.1.6						
6WL.1.7						
6WL.1.8						
6WL.1.9						
6WL.1.10						
6WL.2.0						
6WL.2.1: [1]	1:(40)[3]	26:(4)[1]	40:(5)[1]	42:(12)[1]		
6WL.2.2: [1]	25:(12)[1]	26:(2)[1]	40:(1)[1]	41:(12)[1]		
6WL.2.3						
6WL.2.4						
6WL.2.5						
6WL.2.6						

## ELA Grade 7

Table 7.1a-1

*Categorical Concurrence between Standards and Assessment as Rated by Six Reviewers*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*  
*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RCby Level	Mean	S.D.	
7RL.0.0 Reading Standards for ...	1	9.67	2 3	2 7	22.22 77.78	13	1.55	YES
7RI.0.0 Reading, Speaking, and...	2	16.33	2 3	4 12	25 75	26	0.89	YES
7WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	23.5	4.93	YES
Total	5	42	1 2 3 4	1 12 27 1	2 29 66 2	62.5	5.32	

Table 7.2a-1

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Six Reviewers*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*  
*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
7RL.0.0 Reading Standards for ...	1	9.67	13	1.55	46.07	13	51.26	16	2.67	4	YES
7RI.0.0 Reading, Speaking, and...	2	16.33	26	0.89	37.29	16	57.58	14	5.13	4	YES
7WL.0.0 Writing and Language ...	2	16	23.5	4.93	8.25	4	90.47	4	1.28	3	YES
Total	5	42	62.5	5.32	28	8.4	68.8	8.9	3.2	2.8	
NT = Not Tested											



*Table 7.3a-1*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
7RL.0.0 Reading Standards for ...	1	9.67	13	1.55	5.5	1.05	56.53	6.67	YES	27	2	0.74	0.02	YES
7RI.0.0 Reading, Speaking, and...	2	16.33	26	0.89	6.67	1.03	40.75	5.64	WEAK	55	3	0.69	0.03	WEAK
7WL.0.0 Writing and Language ...	2	16	23.5	4.93	4.33	0.52	27.08	3.23	NO	18	1	0.75	0.06	YES
Total	5	42	62.5	5.32	5.5	1.17	41.45	15		33	19	0.73	0.04	

*Table 7.4a-1*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Six Reviewers*

*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7RL.0.0 Reading Standards for ...	YES	YES	YES	YES
7RI.0.0 Reading, Speaking, and...	YES	YES	WEAK	WEAK
7WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 7.5a-1 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6
1	2	2	2	3	3	2
2	2	2	1	2	1	2
3	2	2	2	2	2	3
4	2	2	2	2	2	3
5	2	2	2	2	2	2
6	2	2	2	1	2	2
7	3	3	3	3	3	3
8	2	2	2	2	3	3
9	2	3	3	2	3	3
10	2	3	2	2	3	3
11	2	2	2	2	2	2
12	2	2	2	2	2	2
13	2	2	2	2	2	2
14	2	2	2	1	1	1
15	2	2	2	2	2	2
16	2	2	3	2	2	2
17	1	1	1	1	1	1
18	1	1	1	1	1	2
19	1	1	1	1	1	1
20	2	3	2	3	3	2
21	2	2	2	2	2	3
22	2	2	2	2	2	3
23	2	2	2	2	2	2
24	2	2	2	2	2	2
25	2	3	2	2	2	2
26	2	2	2	2	2	2
27	2	3	3	2	3	2
28	2	2	2	2	2	2
29	3	3	3	3	2	3
30	3	2	3	3	3	3
31	2	3	3	2	3	3
32	2	2	2	2	2	2
33	2	2	2	2	2	2
34	2	3	2	3	2	3
35	2	3	3	2	3	3
36	2	2	3	2	3	3
37	2	3	2	3	3	3
38	2	3	3	2	3	3
39	1	1	1	2	1	1
40	1	1	1	1	1	2
41	1	1	1	1	1	1
42	3	3	3	3	3	3

*Intraclass correlation - .9389*

*Pairwise Comparison - 0.72*

Table 7.6a-1  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

Number of Reviewers: Six

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			3	7RL.1.1			3	7RL.1.1			2	7RL.1.1		
2	2	7RL.1.1			2	7RL.1.1			1	7RL.1.1			2	7RL.1.1			1	7RL.1.1			2	7RL.1.1		
3	2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			3	7RL.1.4		
4	2	7RL.1.6			2	7RL.1.1			2	7RL.1.6			2	7RL.1.6			2	7RL.1.6			3	7RL.1.6		
5	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1		
6	2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			1	7RI.1.4			2	7RI.1.4			2	7RI.1.4		
7	3	7RI.1.5			3	7RI.1.5			3	7RI.1.5			3	7RI.1.1			3	7RI.1.1			3	7RI.1.5		
8	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			3	7RI.1.2			3	7RI.1.2		
9	2	7RI.1.6			3	7RI.1.6			3	7RI.1.6			2	7RI.1.6			3	7RI.1.6			3	7RI.1.6		
10	2	7RI.1.9			3	7RI.1.9			2	7RI.1.9			2	7RI.1.9			3	7RI.1.1			3	7RI.1.9		
11	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.0	7RL.1.1	
12	2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2		
13	2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4	7WL.2.4		2	7RI.1.4	7WL.2.4	
14	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			1	7RI.1.1			1	7RI.1.1			1	7RI.1.0		
15	2	7RI.1.4			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2		
16	2	7RL.1.1			2	7RI.1.1			3	7RI.0.0			2	7RL.0.0			2	7RL.0.0	7RL.1.4		2	7RL.1.4	7RL.0.0	
17	1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1		
18	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			2	7WL.2.1	7WL.2.2	
19	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2		
20	2	7RI.1.5			3	7RI.1.5			2	7RI.1.5			3	7RI.1.5			3	7RI.1.5			2	7RI.1.5		
21	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			3	7RI.1.1		
22	2	7RI.1.4			2	7RI.1.1			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			3	7RI.1.4		
23	2	7RI.1.8			2	7RI.1.1			2	7RI.1.1	7RI.1.8		2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
24	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
25	2	7RI.1.1			3	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1	7RL.0.0	
26	2	7RL.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.1		
27	2	7RI.1.4			3	7RL.1.4			3	7RL.1.4			2	7RL.1.4			3	7RI.1.4			2	7RL.1.4		
28	2	7RL.1.2				7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2		
29	3	7RL.1.8	7RI.1.4	7RL.1.	3	7RL.1.4	7RL.1.8	7RI.1.4	3	7RL.1.8	7RL.1.4	7RI.1.	3	7RL.1.8	7RI.1.4		2	7RL.1.8	7RL.1.4	7RI.1.	3	7RI.1.4	7RL.1.8	7RL.1.

				4							4							4				4	
30	3	7RL.1.2	7RI.1.2		2	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2
31	2	7RI.1.2			3	7RI.1.4			3	7RI.1.4			2	7RI.1.4			3	7RI.1.4			3	7RI.1.4	
32	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1	
33	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1	
34	2	7RI.1.2			3	7RI.1.2	7RI.1.8		2	7RI.1.2			3	7RI.1.2			2	7RI.1.2			3	7RI.1.2	
35	2	7RI.1.5			3	7RI.1.5			3	7RI.1.5			2	7RI.1.5			3	7RI.1.5			3	7RI.1.5	
36	2	7RI.1.1			2	7RI.1.1			3	7RI.1.1			2	7RI.1.1			3	7RI.1.1			3	7RI.1.1	
37	2	7RI.1.5			3	7RI.1.5			2	7RI.1.5			3	7RI.1.5			3	7RI.1.5			3	7RI.1.5	
38	2	7RI.1.2			3	7RI.1.2			3	7RI.1.2			2	7RI.1.2			3	7RI.1.2			3	7RI.1.2	
39	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			2	7RI.1.4			1	7WL.2.2			1	7WL.2.2	
40	1	7WL.2.2			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			2	7WL.2.1	
41	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.1			1	7WL.2.2			1	7WL.2.2	
42	3	7WL.1.1	7WL.1.4		3	7WL.1.1	7WL.1.4	7WL.1.5	3	7WL.1.1	7WL.1.4		3	7WL.1.1	7WL.1.4		3	7WL.1.1			3	7WL.1.1	7WL.1.4

Objective Pairwise Comparison: 0.78

Standard Pairwise Comparison: 0.92

Table 7.7a-1

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

	Low				Medium				High				
	0				28.8							48	
7RL.0.0	25(1)	16(3)											
7RL.1.0	11(1)												
7RL.1.1	1(6)	2(6)	5(6)	4(1)	16(1)	11(6)							
7RL.1.2	26(1)	28(6)	30(6)	12(6)									
7RL.1.3													
7RL.1.4	3(6)	27(4)	16(2)	29(5)									
7RL.1.5													
7RL.1.6	4(5)												
7RL.1.7													
7RL.1.8	29(6)												
7RL.1.9													
7RI.0.0	16(1)												
7RI.1.0	14(1)												
7RI.1.1	14(5)	7(2)	16(1)	10(1)	21(6)	22(1)	26(1)	23(5)	24(6)	25(6)	32(6)	33(6)	36(6)
7RI.1.2	38(6)	34(6)	26(4)	31(1)	15(5)	8(6)	30(6)						
7RI.1.3													
7RI.1.4	15(1)	13(6)	6(6)	31(5)	22(5)	39(1)	27(2)	29(6)					
7RI.1.5	37(6)	35(6)	20(6)	7(4)									
7RI.1.6	9(6)												
7RI.1.7													
7RI.1.8	23(2)	34(1)											
7RI.1.9	10(5)												
7RI.1.10													
7RI.2.0													
7RI.2.1													
7RI.2.2													

7RI.2.3													
7RI.2.4													
7RI.2.5													
7RI.2.6													
7WL.0.0													
7WL.1.0													
7WL.1.1	42(48)												
7WL.1.2													
7WL.1.3													
7WL.1.4	42(40)												
7WL.1.5	42(8)												
7WL.1.6													
7WL.1.7													
7WL.1.8													
7WL.1.9													
7WL.1.10													
7WL.2.0													
7WL.2.1	41(1)	40(5)	17(6)	18(2)									
7WL.2.2	19(6)	40(1)	41(5)	39(5)	18(12)								
7WL.2.3													
7WL.2.4	13(2)												
7WL.2.5													
7WL.2.6													

Table 7.8a-1

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

Low		Medium		High	
9.6		28.8		48	
1 13354	7RL.1.1:6				
2 13357	7RL.1.1:6				
3 13359	7RL.1.4:6				
4 13358	7RL.1.1:1	7RL.1.6:5			
5 13352	7RL.1.1:6				
6 9740	7RI.1.4:6				
7 9743	7RI.1.1:2	7RI.1.5:4			
8 9846	7RI.1.2:6				
9 9742	7RI.1.6:6				
10 9845	7RI.1.1:1	7RI.1.9:5			
11 13388	7RL.1.0:1	7RL.1.1:6			
12 13386	7RL.1.2:6				
13 13394	7RI.1.4:6	7WL.2.4:2			
14 13389	7RI.1.0:1	7RI.1.1:5			
15 13387	7RI.1.2:5	7RI.1.4:1			
16 13392	7RL.0.0:3	7RL.1.1:1	7RL.1.4:2	7RI.0.0:1	7RI.1.1:1
17 9090	7WL.2.1:6				
18 9091	7WL.2.1:2	7WL.2.2:12			
19 9092	7WL.2.2:6				
20 13345	7RI.1.5:6				
21 13347	7RI.1.1:6				
22 13349	7RI.1.1:1	7RI.1.4:5			
23 13348	7RI.1.1:5	7RI.1.8:2			
24 13343	7RI.1.1:6				
25 13344	7RL.0.0:1	7RI.1.1:6			
26 9713	7RL.1.2:1	7RI.1.1:1	7RI.1.2:4		
27 9614	7RL.1.4:4	7RI.1.4:2			
28 10695	7RL.1.2:6				
29 9709	7RL.1.4:5	7RL.1.8:6	7RI.1.4:6		
30 9750	7RL.1.2:6	7RI.1.2:6			
31 9787	7RI.1.2:1	7RI.1.4:5			
32 9810	7RI.1.1:6				
33 9786	7RI.1.1:6				

34 9793	7RI.1.2:6	7RI.1.8:1	
35 9790	7RI.1.5:6		
36 10275	7RI.1.1:6		
37 9791	7RI.1.5:6		
38 9789	7RI.1.2:6		
39 9103	7RI.1.4:1	7WL.2.2:5	
40 9105	7WL.2.1:5	7WL.2.2:1	
41 9106	7WL.2.1:1	7WL.2.2:5	
42 13403(1a)	7WL.1.1:48	7WL.1.4:40	7WL.1.5:8



Table 7.9a-1

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*  
*AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

Low DOK		Matched DOK		High DOK

7RL.0.0: [3]	16:(3)[2]	25:(1)[2]											
7RL.1.0: [3]	11:(1)[2]												
7RL.1.1: [2]	1:(6)[2]	2:(6)[2]	4:(1)[2]	5:(6)[2]	11:(6)[2]	16:(1)[2]							
7RL.1.2: [3]	12:(6)[2]	26:(1)[2]	28:(6)[2]	30:(6)[3]									
7RL.1.3													
7RL.1.4: [3]	3:(6)[2]	16:(2)[2]	27:(4)[2]	29:(5)[3]									
7RL.1.5													
7RL.1.6: [3]	4:(5)[2]												
7RL.1.7													
7RL.1.8: [3]	29:(6)[3]												
7RL.1.9													
7RI.0.0: [3]	16:(1)[3]												
7RI.1.0: [3]	14:(1)[1]												
7RI.1.1: [2]	7:(2)[3]	10:(1)[3]	14:(5)[2]	16:(1)[2]	21:(6)[2]	22:(1)[2]	23:(5)[2]	24:(6)[2]	25:(6)[2]	26:(1)[2]	32:(6)[2]	33:(6)[2]	36:(6)[2]
7RI.1.2: [3]	8:(6)[2]	15:(5)[2]	26:(4)[2]	30:(6)[3]	31:(1)[2]	34:(6)[2]	38:(6)[3]						
7RI.1.3													
7RI.1.4: [3]	6:(6)[2]	13:(6)[2]	15:(1)[2]	22:(5)[2]	27:(2)[2]	29:(6)[3]	31:(5)[3]	39:(1)[2]					
7RI.1.5: [3]	7:(4)[3]	20:(6)[2]	35:(6)[3]	37:(6)[3]									
7RI.1.6: [3]	9:(6)[3]												
7RI.1.7													
7RI.1.8: [3]	23:(2)[2]	34:(1)[3]											
7RI.1.9: [3]	10:(5)[2]												
7RI.1.10													
7RI.2.0													
7RI.2.1													
7RI.2.2													
7RI.2.3													
7RI.2.4													
7RI.2.5													
7RI.2.6													

7WL.0.0													
7WL.1.0													
7WL.1.1: [3]	42:(48)[3]												
7WL.1.2													
7WL.1.3													
7WL.1.4: [3]	42:(40)[3]												
7WL.1.5: [3]	42:(8)[3]												
7WL.1.6													
7WL.1.7													
7WL.1.8													
7WL.1.9													
7WL.1.10													
7WL.2.0													
7WL.2.1: [2]	17:(6)[1]	18:(2)[2]	40:(5)[1]	41:(1)[1]									
7WL.2.2: [1]	18:(12)[1]	19:(6)[1]	39:(5)[1]	40:(1)[1]	41:(5)[1]								
7WL.2.3													
7WL.2.4: [2]	13:(2)[2]												
7WL.2.5													
7WL.2.6													

Table 7.1a-2

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Objective Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
7RL.0.0 Reading Standards for ...	1	9	2 3	2 7	22.22 77.78	15.71	3.09	YES
7RI.0.0 Reading, Speaking, and...	2	16.14	2 3	4 12	25 75	30.86	5.08	YES
7WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	24.14	4.71	YES
Total	5	41.14	1 2 3 4	1 12 27 1	2 29 66 2	70.71	11.29	

Table 7.2a-2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Items						DOK Consistency
	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
7RL.0.0 Reading Standards for ...	1	9	15.71	3.09	53.12	12	44.14	12	2.73	4	WEAK
7RI.0.0 Reading, Speaking, and...	2	16.14	30.86	5.08	50.18	10	49.82	10	0	0	YES
7WL.0.0 Writing and Language ...	2	16	24.14	4.71	6.71	5	82.42	22	10.86	25	YES
Total	5	41.14	70.71	11.29	35.76	5.6	59.8	6.2	4.44	8.3	
NT = Not Tested											

Table 7.3a-2

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group

Number of Assessment Items - 42

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
7RL.0.0 Reading Standards for ...	1	9	15.71	3.09	5.57	0.53	61.9	5.94	YES	29	3	0.83	0.03	YES
7RI.0.0 Reading, Speaking, and...	2	16.14	30.86	5.08	7.14	1.07	44.22	6.37	WEAK	55	3	0.77	0.04	YES
7WL.0.0 Writing and Language ...	2	16	24.14	4.71	4.71	0.76	29.46	4.72	NO	17	1	0.74	0.06	YES
Total	5	41.14	70.71	11.29	5.8	1.23	45.19	16		34	19	0.78	0.04	

Table 7.4a-2

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group

Number of Assessment Items - 42

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7RL.0.0 Reading Standards for ...	YES	WEAK	YES	YES
7RI.0.0 Reading, Speaking, and...	YES	YES	WEAK	YES
7WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 7.5a-2 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	2	2	2	2	3	2	2
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	3	3	3
5	3	2	3	2	2	2	2
6	2	2	2	2	2	2	2
7	3	2	3	2	3	3	3
8	2	2	2	2	2	2	2
9	3	3	3	3	3	3	3
10	2	2	2	2	2	2	2
11	2	1	2	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	3	3	2	2	2	2
17	1	2	1	1	2	2	1
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	3	3	3	3	3	3	3
21	2	2	2	2	2	2	2
22	2	3	3	2	2	2	2
23	2	2	2	1	2	2	2
24	2	2	1	1	2	2	2
25	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2
27	2	3	2	2	3	2	2
28	2	2	2	2	2	2	2
29	2	3	3	2	3	3	2
30	3	3	2	2	3	2	2
31	2	3	2	2	3	2	3
32	2	2	2	2	2	2	2
33	2	2	1	2	2	2	2
34	2	2	2	2	2	2	2
35	3	3	3	2	2	3	3
36	2	2	2	2	2	2	2
37	3	3	3	2	2	3	3
38	3	3	3	2	2	3	2
39	1	1	1	1	1	1	1
40	1	2	1	1	2	1	1
41	1	1	1	1	2	1	1
42	3	4	3	3	3	3	3

*Intraclass correlation - .9491*

*Pairwise Comparison - 0.77*

Table 7.6a-2

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	7RL.1.2			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			3	7RL.1.3	7RL.1.1		2	7RL.1.3	7RL.1.1		2	7RL.1.1		
2	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.6	7RL.1.1		2	7RL.1.1			2	7RL.1.6	7RL.1.1	
3	2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4		
4	2	7RL.1.6			2	7RL.1.2	7RL.1.6		2	7RL.1.3			2	7RL.1.6			3	7RL.1.6			3	7RL.1.6			3	7RL.1.3		
5	3	7RL.1.1	7RL.1.4		2	7RL.1.1			3	7RL.1.1			2	7RL.1.1			2	7RL.1.3	7RL.1.6	7RL.1.1	2	7RL.1.3	7RL.1.1		2	7RL.1.1		
6	2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4		
7	3	7RI.1.5	7RI.1.6		2	7RI.1.5	7RI.1.6		3	7RI.1.5	7RI.1.6		2	7RI.1.5	7RI.1.6		3	7RI.1.5	7RI.1.6		3	7RI.1.5			3	7RI.1.5	7RL.1.6	
8	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2		
9	3	7RI.1.2			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6		
10	2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.1			2	7RI.1.9		
11	2	7RL.1.1	7RL.1.3		1	7RI.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.3	7RL.1.1		2	7RL.1.1			2	7RL.1.1		
12	2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2	7RL.1.1		2	7RL.1.2			2	7RL.1.2	7RL.1.1	
13	2	7RI.1.4			2	7RI.1.4	7WL.2.4		2	7RI.1.4	7WL.2.4		2	7RI.1.4	7WL.2.4		2	7RI.1.4	7RI.1.1	7WL.2.4	2	7RI.1.4	7WL.2.4		2	7RI.1.4	7RL.1.1	
14	2	7RI.1.1			2	7RI.1.1			2	7RI.1.3			2	7RI.1.1			2	7RI.1.3			2	7RI.1.1			2	7RI.1.1	7RI.1.3	
15	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2		
16	2	7RI.1.9	7RL.1.8		3	7RI.1.9	7RL.1.8		3	7RI.1.9	7RL.1.8		2	7RI.1.9	7RL.1.8		2	7RI.1.9	7RL.1.8	7RI.1.1	2	7RI.1.9	7RL.1.8		2	7RI.1.9	7RI.1.3	7RL.1.8
17	1	7WL.2.1			2	7WL.2.1			1	7WL.2.1			1	7WL.2.1			2	7WL.2.1			2	7WL.2.1			1	7WL.2.1		
18	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			2	7WL.2.2			1	7WL.2.2			1	7WL.2.1	7WL.2.2	

19	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2						
20	3	7RI.1.5			3	7RI.1.5	7RI.1.2		3	7RI.1.5			3	7RI.1.5	7RI.1.2		3	7RI.1.5			3	7RI.1.5						
21	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.3	7RI.1.1		2	7RI.1.6			2	7RI.1.1						
22	2	7RI.1.4			3	7RI.1.4			3	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4						
23	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			1	7RI.1.6			2	7RI.1.8			2	7RI.1.1						
24	2	7RI.1.1			2	7RI.1.1	7RI.1.3	7RI.1.8	1	7RI.1.1			1	7RI.1.1			2	7RI.1.1			2	7RI.1.1						
25	2	7RI.1.1			2	7RI.1.3			2	7RI.1.1			2	7RI.1.1	7RI.1.8	7RI.1.3	7RI.1.2	7RL.1.1	7RL.1.3		2	7RI.0.0						
26	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2	7RI.1.2		2	7RI.1.2						
27	2	7RL.1.4			3	7RL.1.4			2	7RL.1.4			2	7RL.1.4			3	7RL.1.4			2	7RL.1.4						
28	2	7RL.1.2			2	7RL.1.2			2	7RL.1.2			2	7RL.1.2	7RL.1.3		2	7RL.1.2			2	7RL.1.2	7RL.1.3					
29	2	7RL.1.8	7RL.1.4	7RI.1.4	3	7RL.1.8	7RL.1.4	7RI.1.4	3	7RL.1.8	7RL.1.4	7RI.1.4	2	7RL.1.4	7RL.1.8	7RI.1.4	3	7RL.1.4	7RI.1.4	7RL.1.8	3	7RL.1.4	7RI.1.4	7RL.1.8	2	7RI.1.4	7RL.1.4	7RL.1.8
30	3	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2		2	7RL.1.2	7RI.1.2		2	7RL.1.2	7RI.1.2	7RL.1.8	2	7RL.1.2	7RI.1.2		2	7RI.1.2	7RL.1.2					
31	2	7RI.1.4			3	7RI.1.4			2	7RI.1.4			2	7RI.1.4			3	7RI.1.4			2	7RI.1.4			3	7RI.1.4		
32	2	7RI.1.1			2	7RI.1.1	7RI.1.2		2	7RI.1.8			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
33	2	7RI.1.1			2	7RI.1.1	7RI.1.2		1	7RI.1.8			2	7RI.1.1			2	7RI.1.1	7RI.1.8		2	7RI.1.1			2	7RI.1.1		
34	2	7RI.1.6			2	7RI.1.2			2	7RI.1.6	7RI.1.2		2	7RI.1.2			2	7RI.1.6	7RI.1.2	7RI.1.1	2	7RI.1.2			2	7RI.1.2	7RI.1.2	
35	3	7RI.1.5			3	7RI.1.5			3	7RI.1.5			2	7RI.1.5			2	7RI.1.5	7RI.1.8		3	7RI.1.5			3	7RI.1.5		
36	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1	7RI.1.2		2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
37	3	7RI.1.5			3	7RI.1.5			3	7RI.1.5			2	7RI.1.5			2	7RI.1.5			3	7RI.1.5			3	7RI.1.5		
38	3	7RI.1.2			3	7RI.1.2			3	7RI.1.2			2	7RI.1.2			2	7RI.1.2			3	7RI.1.5			2	7RI.1.2		
39	1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2		
40	1	7WL.2.1			2	7WL.2.1			1	7WL.2.1			1	7WL.2.1			2	7WL.2.1			1	7WL.2.1			1	7WL.2.1	7WL.2.2	

41	1	7WL.2 .2			1	7WL.2 .2			1	7WL.2 .2			1	7WL.2 .2			2	7WL.2 .2			1	7WL.2 .2			1	7WL.2 .2		
42	3	7WL.1 .1	7WL.1 .4		4	7WL.1 .1	7WL.1 .4		3	7WL.1 .1	7WL.1 .4		3	7WL.1 .1	7WL.1 .4		3	7WL.1 .1	7WL.1 .8	7WL.1 .4	3	7WL.1 .1			3	7WL.1 .1	7RI.1. 9	7WL.1 .4
Objective Pairwise Comparison: 0.69																												
Standard Pairwise Comparison: 0.93																												



Table 7.7a-2

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

	Low				Medium				High				
	0				33.6				56				
7RL.0.0													
7RL.1.0													
7RL.1.1	25(1)	12(2)	1(6)	11(6)	13(1)	2(7)	5(7)						
7RL.1.2	28(7)	12(7)	1(1)	4(1)	30(7)								
7RL.1.3	4(2)	1(2)	5(2)	11(2)	25(1)	28(2)							
7RL.1.4	3(7)	27(7)	5(1)	29(7)									
7RL.1.5													
7RL.1.6	2(2)	4(5)	5(1)	7(1)									
7RL.1.7													
7RL.1.8	30(1)	29(7)	16(7)										
7RL.1.9													
7RI.0.0	25(1)												
7RI.1.0													
7RI.1.1	25(4)	23(5)	24(7)	11(1)	10(1)	14(5)	32(6)	33(6)	36(7)	21(6)	13(1)	34(1)	16(1)
7RI.1.2	38(6)	8(7)	9(1)	15(7)	32(1)	33(1)	36(1)	30(7)	26(8)	20(2)	34(7)		
7RI.1.3	21(1)	24(1)	14(3)	16(1)	25(2)								
7RI.1.4	13(7)	22(7)	6(7)	31(7)	29(7)								
7RI.1.5	37(7)	38(1)	35(7)	7(7)	20(7)								
7RI.1.6	9(6)	21(1)	23(1)	34(3)	7(5)								
7RI.1.7													
7RI.1.8	32(1)	23(1)	25(1)	33(2)	35(1)	24(1)							
7RI.1.9	10(6)	16(7)	42(8)										
7RI.1.10													
7RI.2.0													
7RI.2.1													
7RI.2.2													

7RI.2.3													
7RI.2.4													
7RI.2.5													
7RI.2.6													
7WL.0.0													
7WL.1.0													
7WL.1.1	42(56)												
7WL.1.2													
7WL.1.3													
7WL.1.4	42(48)												
7WL.1.5													
7WL.1.6													
7WL.1.7													
7WL.1.8	42(8)												
7WL.1.9													
7WL.1.10													
7WL.2.0													
7WL.2.1	40(7)	17(7)	18(2)										
7WL.2.2	19(7)	41(7)	39(7)	40(1)	18(14)								
7WL.2.3													
7WL.2.4	13(5)												
7WL.2.5													
7WL.2.6													

Table 7.8a-2

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

Low		Medium		High	
11.2		33.6		56	
1 13354	7RL.1.1:6	7RL.1.2:1	7RL.1.3:2		
2 13357	7RL.1.1:7	7RL.1.6:2			
3 13359	7RL.1.4:7				
4 13358	7RL.1.2:1	7RL.1.3:2	7RL.1.6:5		
5 13352	7RL.1.1:7	7RL.1.3:2	7RL.1.4:1	7RL.1.6:1	
6 9740	7RI.1.4:7				
7 9743	7RL.1.6:1	7RI.1.5:7	7RI.1.6:5		
8 9846	7RI.1.2:7				
9 9742	7RI.1.2:1	7RI.1.6:6			
10 9845	7RI.1.1:1	7RI.1.9:6			
11 13388	7RL.1.1:6	7RL.1.3:2	7RI.1.1:1		
12 13386	7RL.1.1:2	7RL.1.2:7			
13 13394	7RL.1.1:1	7RI.1.1:1	7RI.1.4:7	7WL.2.4:5	
14 13389	7RI.1.1:5	7RI.1.3:3			
15 13387	7RI.1.2:7				
16 13392	7RL.1.8:7	7RI.1.1:1	7RI.1.3:1	7RI.1.9:7	
17 9090	7WL.2.1:7				
18 9091	7WL.2.1:2	7WL.2.2:14			
19 9092	7WL.2.2:7				
20 13345	7RI.1.2:2	7RI.1.5:7			
21 13347	7RI.1.1:6	7RI.1.3:1	7RI.1.6:1		
22 13349	7RI.1.4:7				
23 13348	7RI.1.1:5	7RI.1.6:1	7RI.1.8:1		
24 13343	7RI.1.1:7	7RI.1.3:1	7RI.1.8:1		
25 13344	7RL.1.1:1	7RL.1.3:1	7RI.0.0:1	7RI.1.1:4	7RI.1.3:2 7RI.1.8:1
26 9713	7RI.1.2:7				
27 9614	7RL.1.4:7				
28 10695	7RL.1.2:7	7RL.1.3:2			
29 9709	7RL.1.4:7	7RL.1.8:7	7RI.1.4:7		
30 9750	7RL.1.2:7	7RL.1.8:1	7RI.1.2:7		
31 9787	7RI.1.4:7				
32 9810	7RI.1.1:6	7RI.1.2:1	7RI.1.8:1		
33 9786	7RI.1.1:6	7RI.1.2:1	7RI.1.8:2		

34 9793	7RI.1.1:1	7RI.1.2:6	7RI.1.6:3	
35 9790	7RI.1.5:7	7RI.1.8:1		
36 10275	7RI.1.1:7	7RI.1.2:1		
37 9791	7RI.1.5:7			
38 9789	7RI.1.2:6	7RI.1.5:1		
39 9103	7WL.2.2:7			
40 9105	7WL.2.1:7	7WL.2.2:1		
41 9106	7WL.2.2:7			
42 13403(1a)	7RI.1.9:8	7WL.1.1:56	7WL.1.4:48	7WL.1.8:8

Table 7.9a-2

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*  
*AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

Low DOK		Matched DOK		High DOK

7RL.0.0													
7RL.1.0													
7RL.1.1 : [2]	1:(6)[2]	2:(7)[2]	5:(7)[2]	11:(6)[2]	12:(2)[2]	13:(1)[2]	25:(1)[2]						
7RL.1.2 : [3]	1:(1)[2]	4:(1)[2]	12:(7)[2]	28:(7)[2]	30:(7)[2]								
7RL.1.3 : [3]	1:(2)[2]	4:(2)[2]	5:(2)[2]	11:(2)[2]	25:(1)[2]	28:(2)[2]							
7RL.1.4 : [3]	3:(7)[2]	5:(1)[3]	27:(7)[2]	29:(7)[3]									
7RL.1.5													
7RL.1.6 : [3]	2:(2)[2]	4:(5)[2]	5:(1)[2]	7:(1)[3]									
7RL.1.7													
7RL.1.8 : [3]	16:(7)[2]	29:(7)[3]	30:(1)[3]										
7RL.1.9													
7RI.0.0: [3]	25:(1)[2]												
7RI.1.0													
7RI.1.1: [2]	10:(1)[2]	11:(1)[1]	13:(1)[2]	14:(5)[2]	16:(1)[2]	21:(6)[2]	23:(5)[2]	24:(7)[2]	25:(4)[2]	32:(6)[2]	33:(6)[2]	34:(1)[2]	36:(7)[2]
7RI.1.2: [3]	8:(7)[2]	9:(1)[3]	15:(7)[2]	20:(2)[3]	26:(7)[2]	30:(7)[2]	32:(1)[2]	33:(1)[2]	34:(6)[2]	36:(1)[2]	38:(6)[2]		
7RI.1.3: [3]	14:(3)[2]	16:(1)[2]	21:(1)[2]	24:(1)[2]	25:(2)[2]								
7RI.1.4: [3]	6:(7)[2]	13:(7)[2]	22:(7)[2]	29:(7)[3]	31:(7)[2]								
7RI.1.5: [3]	7:(7)[3]	20:(7)[3]	35:(7)[3]	37:(7)[3]	38:(1)[3]								
7RI.1.6: [3]	7:(5)[3]	9:(6)[3]	21:(1)[2]	23:(1)[1]	34:(3)[2]								
7RI.1.7													
7RI.1.8: [3]	23:(1)[2]	24:(1)[2]	25:(1)[2]	32:(1)[2]	33:(2)[2]	35:(1)[2]							
7RI.1.9: [3]	10:(6)[2]	16:(7)[2]	42:(8)[3]										
7RI.1.1 0													
7RI.2.0													
7RI.2.1													
7RI.2.2													
7RI.2.3													
7RI.2.4													
7RI.2.5													
7RI.2.6													
7WL.0. 0													
7WL.1.													

0													
7WL.1.1: [3]	42:(56)[3]												
7WL.1.2													
7WL.1.3													
7WL.1.4: [3]	42:(48)[3]												
7WL.1.5													
7WL.1.6													
7WL.1.7													
7WL.1.8: [3]	42:(8)[3]												
7WL.1.9													
7WL.1.10													
7WL.2.0													
7WL.2.1: [2]	17:(7)[1]	18:(2)[1]	40:(7)[1]										
7WL.2.2: [1]	18:(14)[1]	19:(7)[1]	39:(7)[1]	40:(1)[1]	41:(7)[1]								
7WL.2.3													
7WL.2.4: [2]	13:(5)[2]												
7WL.2.5													
7WL.2.6													

Table 7.1b

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 7 Online*  
*Number of Assessment Items - 42*

Reporting Category			Level by Standars			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
7RL.0.0 Reading Standards for ...	1	9	2 3	2 7	22.22 77.78	13.29	2.21	YES
7RI.0.0 Reading, Speaking, and...	2	16.29	2 3	4 12	25 75	27.29	4.68	YES
7WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	23.71	6.4	YES
Total	5	41.29	1 2 3 4	1 12 27 1	2 29 66 2	64.29	10.21	

Table 7.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 7 Online*  
*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of ITem						DOK Consistency
Title	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
7RL.0.0 Reading Standards for ...	1	9	13.29	2.21	46.05	15	53.15	14	0.79	2	YES
7RI.0.0 Reading, Speaking, and...	2	16.29	27.29	4.68	52.79	13	46.7	13	0.51	1	WEAK
7WL.0.0 Writing and Language ...	2	16	23.71	6.4	12.92	10	84.91	9	2.16	4	YES
Total	5	41.29	64.29	10.21	35.56	6.7	63.11	5.4	1.33	1.7	
NT = Not Tested											

*Table 7.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 7 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
7RL.0.0 Reading Standards for ...	1	9	13.29	2.21	5.86	0.69	65.08	7.67	YES	28	4	0.78	0.05	YES
7RI.0.0 Reading, Speaking, and...	2	16.29	27.29	4.68	8.71	1.11	53.47	6.28	YES	55	3	0.72	0.02	YES
7WL.0.0 Writing and Language ...	2	16	23.71	6.4	4.29	0.95	26.79	5.94	NO	18	1	0.74	0.08	YES
Total	5	41.29	64.29	10.21	6.3	2.25	48.45	20		34	19	0.75	0.03	

*Table 7.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 7 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7RL.0.0 Reading Standards for ...	YES	YES	YES	YES
7RI.0.0 Reading, Speaking, and...	YES	WEAK	YES	YES
7WL.0.0 Writing and Language ...	YES	YES	NO	YES



Table 7.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 7 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	3	3	2	2	3	3	3
3	2	2	2	2	2	2	2
4	2	2	3	2	2	2	2
5	2	2	1	1	2	2	2
6	2	3	2	2	2	2	2
7	2	2	2	2	2	2	2
8	2	2	2	2	3	2	2
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	3	3	3
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	3	2	3	2	3	3	3
16	2	2	2	2	2	2	2
17	3	3	3	3	3	3	3
18	2	2	2	2	2	2	2
19	2	2	2	2	3	2	2
20	2	2	2	2	2	2	2
21	2	2	3	2	2	3	2
22	2	2	2	2	2	2	2
23	1	2	1	1	2	2	1
24	1	1	1	1	2	2	1
25	1	1	1	1	1	1	1
26	2	2	2	2	2	2	2
27	2	3	2	2	2	2	2
28	2	2	2	2	2	2	2
29	2	3	2	2	3	2	2
30	2	3	3	2	3	3	2
31	2	2	2	2	2	2	2
32	2	3	3	2	3	3	2
33	3	3	2	2	3	2	2
34	3	3	2	2	3	2	3
35	2	2	2	2	2	2	2
36	2	3	3	2	2	3	3
37	2	2	2	2	2	2	2
38	3	3	3	2	2	3	3
39	3	3	3	2	2	3	2
40	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1

*Intraclass correlation - .9512*

*Pairwise Comparison - 0.78*

Table 7.6b

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 7 Online*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	7WL.1.2			3	7WL.1.2	7WL.1.4		3	7WL.1.2			3	7WL.1.2	7WL.1.4	7WL.1.8	3	7WL.1.2	7WL.1.4	7WL.1.8	3	7WL.1.2	7WL.1.4		3	7WL.1.2	7RI.1.9	7WL.1.4
2	3	7RI.1.5			3	7RI.1.5	7RI.1.2		2	7RI.1.5			2	7RI.1.5			3	7RI.1.2			3	7RI.1.5			3	7RI.1.5		
3	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.6			2	7RI.1.3			2	7RI.1.6			2	7RI.1.1		
4	2	7RI.1.4			2	7RI.1.4			3	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4		
5	2	7RI.1.1			2	7RI.1.3	7RI.1.8		1	7RI.1.1			1	7RI.1.5			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
6	2	7RI.1.1			3	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
7	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2		
8	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			3	7RL.1.3	7RL.1.1		2	7RL.1.1	7RL.1.3		2	7RL.1.1		
9	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.6	7RL.1.1	
10	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.6	7RL.1.1		2	7RL.1.1			2	7RL.1.1		
11	2	7RL.1.4			2	7RI.1.4	7WL.2.4		2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4			2	7RL.1.4		
12	2	7RL.1.6			2	7RL.1.2	7RL.1.6		2	7RL.1.3			2	7RL.1.3			3	7RL.1.6			3	7RL.1.6			3	7RL.1.3		
13	2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.1			2	7RL.1.6	7RL.1.3	7RL.1.1	2	7RL.1.3	7RL.1.1		2	7RL.1.1		
14	2	7RI.1.4			2	7RI.1.4	7WL.1.4		2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4		
15	3	7RI.1.5			2	7RI.1.5			3	7RI.1.0			2	7RI.1.5	7RI.1.6		3	7RI.1.5			3	7RI.1.5			3	7RI.1.5	7RI.1.6	
16	2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2		
17	3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6			3	7RI.1.6		
18	2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.9			2	7RI.1.1			2	7RI.1.9		
19	2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			3	7RI.2.2			2	7RI.2.2			2	7RI.2.2		
20	2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			2	7RI.2.2			2	7RI.2.2		
21	2	7RI.1.7			2	7RI.1.7			3	7RI.1.7			2	7RI.1.7			2	7RI.1.7			3	7RI.1.7			2	7RI.1.7		
22	2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1		
23	1	7WL.2.1			2	7WL.2.1			1	7WL.2.1			1	7WL.2.1			2	7WL.2.1			2	7WL.1.1			1	7WL.2.1		
24	1	7WL.2.			1	7WL.2.			1	7WL.2.			1	7WL.2.			2	7WL.2.			2	7WL.2.			1	7WL.2.	7WL.2.	

		1			2			2			2			2			2			2	1	
25	1	7WL.2.2		1	7WL.2.2			1	7WL.2.1	7WL.2.2		1	7WL.2.2			1	7WL.2.2			1	7WL.2.2	
26	2	7RI.1.1		2	7RI.1.3			2	7RI.1.4			2	7RI.1.1			2	7RI.1.1			2	7RI.1.4	7RI.1.1
27	2	7RI.1.4		3	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4			2	7RI.1.4	
28	2	7RL.1.1		2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.1.2			2	7RI.0.0	7RI.1.2
29	2	7RL.1.4		3	7RL.1.4			2	7RL.1.4			2	7RL.1.4			3	7RL.1.4			2	7RL.1.4	
30	2	7RL.1.5		3	7RL.1.5			3	7RL.1.5			2	7RL.1.5			3	7RL.1.5			3	7RL.1.3	
31	2	7RL.1.2		2	7RL.1.2			2	7RL.1.3			2	7RL.1.2			2	7RL.1.2	7RL.1.3		2	7RL.1.2	
32	2	7RL.1.4		3	7RL.1.8	7RL.1.4	7RI.1.4	3	7RL.1.8			2	7RL.1.8	7RL.1.4	7RI.1.4	3	7RL.1.4	7RI.1.4	8	3	7RL.1.4	7RI.1.4
33	3	7RL.1.2		3	7RL.1.2	7RI.1.2		2	7RL.1.2	7RI.1.9		2	7RL.1.2	7RI.1.2		3	7RL.1.2	7RI.1.2	8	2	7RL.1.2	7RI.1.2
34	3	7RL.1.4		3	7RI.1.4			2	7RI.1.4			2	7RI.1.4			3	7RI.1.4			2	7RI.1.4	
35	2	7RI.1.1		2	7RI.1.2			2	7RI.1.8			2	7RI.1.1			2	7RI.1.1			2	7RI.1.1	
36	2	7RI.1.5		3	7RL.1.5			3	7RI.1.5			2	7RI.1.5			2	7RI.1.5			3	7RI.1.5	
37	2	7RI.1.1		2	7RI.1.1			2	7RI.1.1			2	7RI.1.1			2	7RI.1.2			2	7RI.1.1	
38	3	7RI.1.5		3	7RI.1.5			3	7RI.1.5			2	7RI.1.5			2	7RI.1.5			3	7RI.1.5	
39	3	7RI.1.2		3	7RI.1.2			3	7RI.1.2			2	7RI.1.2			2	7RI.1.2			3	7RI.1.2	
40	1	7WL.2.1		1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2	
41	1	7WL.2.1		1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.1			1	7WL.2.2	
42	1	7WL.2.2		1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2			1	7WL.2.2	
Objective Pairwise Comparison: 0.72																						
Standard Pairwise Comparison: 0.93																						

Table 7.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 7 Online*

Low			Medium			High		
0			33.6			56		
7RL.0.0								
7RL.1.0								
7RL.1.1	28(1)	8(7)	10(7)	9(7)	13(7)			
7RL.1.2	12(1)	31(6)	33(7)					
7RL.1.3	12(3)	30(2)	8(2)	31(2)	13(2)			
7RL.1.4	29(7)	11(6)	34(1)	32(6)				
7RL.1.5	36(1)	30(5)						
7RL.1.6	10(1)	9(1)	13(1)	12(4)				
7RL.1.7								
7RL.1.8	33(1)	32(5)						
7RL.1.9								
7RI.0.0	28(1)							
7RI.1.0	15(1)							
7RI.1.1	18(1)	22(7)	5(5)	6(7)	3(4)	35(5)	37(6)	26(5)
7RI.1.2	37(1)	35(1)	39(7)	7(7)	16(7)	33(5)	28(6)	2(2)
7RI.1.3	26(1)	5(1)	3(1)					
7RI.1.4	4(7)	14(7)	11(1)	26(2)	27(7)	34(6)	32(5)	
7RI.1.5	36(6)	38(7)	15(6)	2(6)	5(1)			
7RI.1.6	3(2)	17(7)	15(2)					
7RI.1.7	21(7)							
7RI.1.8	35(1)	5(1)						
7RI.1.9	18(6)	33(1)	1(8)					
7RI.1.10								
7RI.2.0								
7RI.2.1								

7RI.2.2	19(7)	20(7)						
7RI.2.3								
7RI.2.4								
7RI.2.5								
7RI.2.6								
7WL.0.0								
7WL.1.0								
7WL.1.1	23(1)							
7WL.1.2	1(56)							
7WL.1.3								
7WL.1.4	14(1)	1(40)						
7WL.1.5								
7WL.1.6								
7WL.1.7								
7WL.1.8	1(16)							
7WL.1.9								
7WL.1.10								
7WL.2.0								
7WL.2.1	23(6)	25(1)	40(1)	41(6)	24(4)			
7WL.2.2	41(1)	42(7)	40(6)	24(12)	25(7)			
7WL.2.3								
7WL.2.4	11(1)							
7WL.2.5								
7WL.2.6								

Table 7.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 7 Online*

	Low	Medium	High	
	11.2		33.6	56
1 13402	7RI.1.9:8	7WL.1.2:56	7WL.1.4:40	7WL.1.8:16
2 13345	7RI.1.2:2	7RI.1.5:6		
3 13347	7RI.1.1:4	7RI.1.3:1	7RI.1.6:2	
4 13349	7RI.1.4:7			
5 13343	7RI.1.1:5	7RI.1.3:1	7RI.1.5:1	7RI.1.8:1
6 13344	7RI.1.1:7			
7 13342	7RI.1.2:7			
8 13354	7RL.1.1:7	7RL.1.3:2		
9 13357	7RL.1.1:7	7RL.1.6:1		
10 13356	7RL.1.1:7	7RL.1.6:1		
11 13359	7RL.1.4:6	7RI.1.4:1	7WL.2.4:1	
12 13358	7RL.1.2:1	7RL.1.3:3	7RL.1.6:4	
13 13352	7RL.1.1:7	7RL.1.3:2	7RL.1.6:1	
14 9740	7RI.1.4:7	7WL.1.4:1		
15 9743	7RI.1.0:1	7RI.1.5:6	7RI.1.6:2	
16 9846	7RI.1.2:7			
17 9742	7RI.1.6:7			
18 9845	7RI.1.1:1	7RI.1.9:6		
19 12553	7RI.2.2:7			
20 12555	7RI.2.2:7			
21 12552	7RI.1.7:7			
22 12890	7RI.1.1:7			
23 9090	7WL.1.1:1	7WL.2.1:6		
24 9091	7WL.2.1:4	7WL.2.2:12		
25 9092	7WL.2.1:1	7WL.2.2:7		
26 9611	7RI.1.1:5	7RI.1.3:1	7RI.1.4:2	
27 9711	7RI.1.4:7			
28 9713	7RL.1.1:1	7RI.0.0:1	7RI.1.2:6	
29 9614	7RL.1.4:7			
30 10613	7RL.1.3:2	7RL.1.5:5		
31 10695	7RL.1.2:6	7RL.1.3:2		
32 9709	7RL.1.4:6	7RL.1.8:5	7RI.1.4:5	

33 9750	7RL.1.2:7	7RL.1.8:1	7RI.1.2:5	7RI.1.9:1
34 9787	7RL.1.4:1	7RI.1.4:6		
35 9810	7RI.1.1:5	7RI.1.2:1	7RI.1.8:1	
36 9790	7RL.1.5:1	7RI.1.5:6		
37 10275	7RI.1.1:6	7RI.1.2:1		
38 9791	7RI.1.5:7			
39 9789	7RI.1.2:7			
40 9103	7WL.2.1:1	7WL.2.2:6		
41 9105	7WL.2.1:6	7WL.2.2:1		
42 9106	7WL.2.2:7			

Table 7.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 7 Online*

Low DOK		Matched DOK		High DOK

7RL.0.0								
7RL.1.0								
7RL.1.1: [2]	8:(7)[2]	9:(7)[2]	10:(7)[2]	13:(7)[2]	28:(1)[2]			
7RL.1.2: [3]	12:(1)[2]	31:(6)[2]	33:(7)[2]					
7RL.1.3: [3]	8:(2)[2]	12:(3)[2]	13:(2)[2]	30:(2)[2]	31:(2)[2]			
7RL.1.4: [3]	11:(6)[2]	29:(7)[2]	32:(6)[2]	34:(1)[3]				
7RL.1.5: [3]	30:(5)[3]	36:(1)[3]						
7RL.1.6: [3]	9:(1)[2]	10:(1)[2]	12:(4)[2]	13:(1)[2]				
7RL.1.7								
7RL.1.8: [3]	32:(5)[3]	33:(1)[3]						
7RL.1.9								
7RI.0.0: [3]	28:(1)[2]							
7RI.1.0: [3]	15:(1)[3]							
7RI.1.1: [2]	3:(4)[2]	5:(5)[2]	6:(7)[2]	18:(1)[2]	22:(7)[2]	26:(5)[2]	35:(5)[2]	37:(6)[2]
7RI.1.2: [3]	2:(2)[3]	7:(7)[2]	16:(7)[2]	28:(6)[2]	33:(5)[2]	35:(1)[2]	37:(1)[2]	39:(7)[3]
7RI.1.3: [3]	3:(1)[2]	5:(1)[2]	26:(1)[2]					
7RI.1.4: [3]	4:(7)[2]	11:(1)[2]	14:(7)[2]	26:(2)[2]	27:(7)[2]	32:(5)[3]	34:(6)[2]	
7RI.1.5: [3]	2:(6)[3]	5:(1)[1]	15:(6)[3]	36:(6)[2]	38:(7)[3]			
7RI.1.6: [3]	3:(2)[2]	15:(2)[2]	17:(7)[3]					
7RI.1.7: [3]	21:(7)[2]							
7RI.1.8: [3]	5:(1)[2]	35:(1)[2]						
7RI.1.9: [3]	1:(8)[3]	18:(6)[2]	33:(1)[2]					
7RI.1.10								
7RI.2.0								
7RI.2.1								
7RI.2.2: [3]	19:(7)[2]	20:(7)[2]						
7RI.2.3								
7RI.2.4								
7RI.2.5								



7RI.2.6								
7WL.0.0								
7WL.1.0								
7WL.1.1: [3]	23:(1)[2]							
7WL.1.2: [3]	1:(56)[3]							
7WL.1.3								
7WL.1.4: [3]	1:(40)[3]	14:(1)[2]						
7WL.1.5								
7WL.1.6								
7WL.1.7								
7WL.1.8: [3]	1:(16)[3]							
7WL.1.9								
7WL.1.10								
7WL.2.0								
7WL.2.1: [2]	23:(6)[1]	24:(4)[1]	25:(1)[1]	40:(1)[1]	41:(6)[1]			
7WL.2.2: [1]	24:(12)[1]	25:(7)[1]	40:(6)[1]	41:(1)[1]	42:(7)[1]			
7WL.2.3								
7WL.2.4: [2]	11:(1)[2]							
7WL.2.5								
7WL.2.6								

## ELA Grade 8

Table 8.1a

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Paper*

*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
8RL.0.0 Reading Standards for ...	1	9	2 3	2 7	22.22 77.78	17.86	1.35	YES
8RI.0.0 Reading, Speaking, and...	2	16.14	2 3	5 11	31.25 68.75	22.57	1.51	YES
8WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 5 9 1	6.25 31.25 56.25 6.25	23.86	8.38	YES
Total	5	41.14	1 2 3 4	1 12 27 1	2 29 66 2	64.29	9.79	

Table 8.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
8RL.0.0 Reading Standards for ...	1	9	17.86	1.35	56.05	7	43.95	7	0	0	WEAK
8RI.0.0 Reading, Speaking, and...	2	16.14	22.57	1.51	60.93	8	38.42	9	0.65	2	NO
8WL.0.0 Writing and Language ...	2	16	23.86	8.38	15.41	9	81.02	13	3.57	9	YES
Total	5	41.14	64.29	9.79	41.78	5.8	56.22	7.4	2	4.1	
NT = Not Tested											

*Table 8.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Paper*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
8RL.0.0 Reading Standards for ...	1	9	17.86	1.35	5.86	0.38	65.08	4.2	YES	40	2	0.75	0.03	YES
8RI.0.0 Reading, Speaking, and...	2	16.14	22.57	1.51	7.29	0.95	45.12	5.67	WEAK	46	2	0.78	0.06	YES
8WL.0.0 Writing and Language ...	2	16	23.86	8.38	4.29	1.11	26.79	6.95	NO	15	2	0.73	0.06	YES
Total	5	41.14	64.29	9.79	5.8	1.5	45.66	19		34	17	0.75	0.02	

*Table 8.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Paper*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8RL.0.0 Reading Standards for ...	YES	WEAK	YES	YES
8RI.0.0 Reading, Speaking, and...	YES	NO	WEAK	YES
8WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 8.5a *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 8 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	2	2	2	2	2	2	2
7	3	3	3	3	3	3	3
8	2	2	2	2	2	2	2
9	3	3	3	3	3	3	3
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	3
13	3	3	3	3	3	3	3
14	2	2	2	2	2	2	2
15	3	2	2	2	3	3	2
16	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1
18	3	3	3	3	3	3	3
19	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2
21	2	2	2	2	2	3	2
22	3	3	3	2	3	3	3
23	2	2	2	3	2	2	2
24	2	2	2	2	2	2	2
25	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	2	2	2	2
29	2	2	2	2	2	2	2
30	2	2	2	2	2	2	2
31	2	2	2	2	2	2	2
32	2	2	2	2	2	2	2
33	2	2	2	2	2	2	2
34	3	2	2	2	2	2	2
35	2	2	2	2	2	2	2
36	2	2	2	2	2	2	2
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2
39	2	2	2	2	2	2	2
40	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1
42	3	3	3	3	3	3	3

*Intraclass correlation - .9887*

*Pairwise Comparison - 0.95*

Table 8.6a

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 8 Paper*

Number of Reviewers: Eight

Number of Reviewers' Log																												
Item	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj	DO K	Obj	S1 Obj	S2 Obj
1	3	8RL.1.4			3	8RL.1.4			3	8WL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4		
2	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
3	2	8RL.1.4			2	8RL.1.3			2	8RL.1.3			2	8RL.1.3			2	8RL.1.3	8RL.1.1		2	8RL.1.1			2	8RL.1.1		
4	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
5	2	8RL.1.1			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2		
6	2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RL.1.4			2	8RI.1.4		
7	3	8RI.1.5			3	8RI.1.8			3	8RI.1.8			3	8RI.1.8			3	8RI.1.2	8RI.1.6		3	8RI.1.8			3	8RI.1.8		
8	2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6	8RI.1.1		2	8RI.1.6			2	8RI.1.6	8RI.1.1	
9	3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5		
10	2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.6			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4		
11	2	8RL.1.3			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
12	2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			3	8RL.1.4		
13	3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6		
14	2	8RL.1.3			2	8RL.1.8	8RL.1.3		2	8RL.1.8			2	8RL.1.8			2	8RL.1.8	8RL.1.3		2	8RL.1.8			2	8RL.1.8		
15	3	8RL.1.4			2	8RL.1.2			2	8RL.1.4			2	8RL.1.4			3	8RL.1.8			3	8RL.1.8			2	8RL.1.4		
16	1	8WL.2.1			1	8WL.2.1			1	8WL.2.1			1	8WL.2.3			1	8WL.2.1			1	8WL.2.1			1	8WL.2.2		
17	1	8WL.2.2			1	8WL.2.1	8WL.2.2		1	8WL.2.1	8WL.2.2		1	8WL.2.2			1	8WL.2.2			1	8WL.2.2			1	8WL.2.2		
18	3	8RI.1.5	8RI.1.2		3	8RI.1.8			3	8RI.1.5			3	8RI.1.8			3	8RI.1.2	8RI.1.5		3	8RI.1.5			3	8RI.1.5		
19	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2		
20	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2		
21	2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			3	8RI.1.3			2	8RI.1.4		

22	2	8RI.1.6			3	8RI.1.6			3	8RI.1.6				2	8RI.1.6			3	8RI.1.6			3	8RI.1.6			3	8RI.1.6			
23	2	8RI.1.1			2	8RI.1.2			2	8RI.1.1				3	8RI.1.1			2	8RI.1.1			2	8RI.1.1			2	8RI.1.1			
24	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2				2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			
25	2	8RL.1.3			2	8RL.1.3			2	8RL.1.1				2	8RL.1.3	8RL.1.1		2	8RL.1.3			2	8RL.1.3			2	8RL.1.3	8RL.1.1		
26	2	8RL.1.3			2	8RL.1.3			2	8RL.1.1				2	8RL.1.3			2	8RL.1.3			2	8RL.1.3			2	8RL.1.3			
27	2	8RL.1.3			2	8RL.1.1			2	8RL.1.3				2	8RL.1.3			2	8RL.1.6			2	8RL.1.1			2	8RL.1.1			
28	2	8RL.1.4			2	8RL.1.4			2	8RL.1.4				2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			
29	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1				2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			
30	2	8RL.1.3			2	8RL.1.3			2	8RL.1.3				2	8RL.1.3			2	8RL.1.3			2	8RL.1.3			2	8RL.1.3			
31	2	8RL.1.8			2	8RL.1.8			2	8RL.1.8				2	8RL.1.8			2	8RL.1.8			2	8RL.1.8			2	8RL.1.8			
32	2	8RI.1.4			2	8RI.1.3			2	8RI.1.4				2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			
33	2	8RI.1.1			2	8RI.1.5			2	8RI.1.3				2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			
34	3	8RI.1.6			2	8RI.1.6			2	8RI.1.6				2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			
35	2	8RI.1.1			2	8RI.1.2			2	8RI.1.2				2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2	8RI.0.0		
36	2	8RI.1.5			2	8RI.1.5			2	8RI.1.5				2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			
37	2	8RI.1.1			2	8RI.1.1			2	8RI.1.1				2	8RI.1.1			2	8RI.1.1			2	8RI.1.1			2	8RI.1.1			
38	2	8RI.1.9			2	8RI.1.9			2	8RI.1.9				2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			
39	2	8RI.1.4			2	8RL.1.4			2	8RI.1.4				2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			
40	1	8WL.2.1			1	8WL.2.1			1	8WL.2.1				1	8WL.2.1			1	8WL.2.2			1	8WL.2.1			1	8WL.2.1			
41	1	8WL.2.2			1	8WL.2.2			1	8WL.2.2				1	8WL.2.2			1	8WL.2.2			1	8WL.2.2			1	8WL.2.2			
42	3	8WL.1.2			3	8WL.1.2	8WL.1.5			3	8WL.1.2			3	8WL.1.2	8WL.1.4	8WL.1.8	3	8WL.1.2	8WL.1.4	8WL.1.8	3	8WL.1.2			3	8WL.1.2	8WL.1.8	8WL.1.4	8WL.1.4

Objective Pairwise Comparison: 0.75

Standard Pairwise Comparison: 0.97

Table 8.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 8 Paper*

Low				Medium			High		
0				33.6			56		
8RL.0.0									
8RL.1.0									
8RL.1.1	4(7)	5(1)	2(7)	11(6)	26(1)	29(7)	27(3)	3(3)	25(3)
8RL.1.2	15(1)	5(6)							
8RL.1.3	3(4)	11(1)	30(7)	26(6)	25(6)	27(3)	14(3)		
8RL.1.4	28(7)	39(1)	15(4)	12(7)	3(1)	1(6)	6(1)		
8RL.1.5									
8RL.1.6	13(7)	27(1)							
8RL.1.7									
8RL.1.8	14(6)	15(2)	31(7)						
8RL.1.9									
8RI.0.0	35(1)								
8RI.1.0									
8RI.1.1	23(6)	33(1)	35(1)	37(7)	8(2)				
8RI.1.2	35(6)	23(1)	24(7)	19(14)	20(7)	7(1)	18(2)		
8RI.1.3	21(1)	32(1)	33(1)						
8RI.1.4	39(6)	32(6)	21(6)	6(6)	10(6)				
8RI.1.5	9(7)	7(1)	33(5)	36(7)	18(5)				
8RI.1.6	34(7)	22(14)	8(7)	10(1)	7(1)				
8RI.1.7									
8RI.1.8	7(5)	18(2)							
8RI.1.9	38(7)								
8RI.1.10									
8RI.2.0									
8RI.2.1									
8RI.2.2									

8RI.2.3									
8RI.2.4									
8RI.2.5									
8RI.2.6									
8WL.0.0									
8WL.1.0									
8WL.1.1									
8WL.1.2	42(56)								
8WL.1.3									
8WL.1.4	1(1)	42(24)							
8WL.1.5	42(8)								
8WL.1.6									
8WL.1.7									
8WL.1.8	42(24)								
8WL.1.9									
8WL.1.10									
8WL.2.0									
8WL.2.1	17(4)	16(5)	40(12)						
8WL.2.2	40(2)	41(7)	42(8)	16(1)	17(14)				
8WL.2.3	16(1)								
8WL.2.4									
8WL.2.5									
8WL.2.6									



Table 8.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 8 Paper*

Low		Medium		High	
11.2		33.6		56	
1 13443	8RL.1.4:6	8WL.1.4:1			
2 13442	8RL.1.1:7				
3 13424	8RL.1.1:3	8RL.1.3:4	8RL.1.4:1		
4 13440	8RL.1.1:7				
5 13441	8RL.1.1:1	8RL.1.2:6			
6 13451	8RL.1.4:1	8RI.1.4:6			
7 13447	8RI.1.2:1	8RI.1.5:1	8RI.1.6:1	8RI.1.8:5	
8 13449	8RI.1.1:2	8RI.1.6:7			
9 13448	8RI.1.5:7				
10 13446	8RI.1.4:6	8RI.1.6:1			
11 12664	8RL.1.1:6	8RL.1.3:1			
12 12670	8RL.1.4:7				
13 12696	8RL.1.6:7				
14 12702	8RL.1.3:3	8RL.1.8:6			
15 12703	8RL.1.2:1	8RL.1.4:4	8RL.1.8:2		
16 9076	8WL.2.1:5	8WL.2.2:1	8WL.2.3:1		
17 9077	8WL.2.1:4	8WL.2.2:14			
18 11815	8RI.1.2:2	8RI.1.5:5	8RI.1.8:2		
19 11819	8RI.1.2:14				
20 11820	8RI.1.2:7				
21 11811	8RI.1.3:1	8RI.1.4:6			
22 12429	8RI.1.6:14				
23 11812	8RI.1.1:6	8RI.1.2:1			
24 11810	8RI.1.2:7				
25 13413	8RL.1.1:3	8RL.1.3:6			
26 13420	8RL.1.1:1	8RL.1.3:6			
27 13412	8RL.1.1:3	8RL.1.3:3	8RL.1.6:1		
28 13416	8RL.1.4:7				
29 13415	8RL.1.1:7				
30 13414	8RL.1.3:7				
31 13419	8RL.1.8:7				
32 9029	8RI.1.3:1	8RI.1.4:6			
33 9025	8RI.1.1:1	8RI.1.3:1	8RI.1.5:5		

34 9026	8RI.1.6:7				
35 9022	8RI.0.0:1	8RI.1.1:1	8RI.1.2:6		
36 10627	8RI.1.5:7				
37 9021	8RI.1.1:7				
38 9028	8RI.1.9:7				
39 9024	8RI.1.4:1	8RI.1.4:6			
40 9080	8WL.2.1:12	8WL.2.2:2			
41 9082	8WL.2.2:7				
42 13437(1a)	8WL.1.2:56	8WL.1.4:24	8WL.1.5:8	8WL.1.8:24	8WL.2.2:8

Table 8.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 8 Paper*

Low DOK		Matched DOK		High DOK

8RL.0.0									
8RL.1.0									
8RL.1.1: [2]	2:(7)[2]	3:(3)[2]	4:(7)[2]	5:(1)[2]	11:(6)[2]	25:(3)[2]	26:(1)[2]	27:(3)[2]	29:(7)[2]
8RL.1.2: [3]	5:(6)[2]	15:(1)[2]							
8RL.1.3: [3]	3:(4)[2]	11:(1)[2]	14:(3)[2]	25:(6)[2]	26:(6)[2]	27:(3)[2]	30:(7)[2]		
8RL.1.4: [3]	1:(6)[3]	3:(1)[2]	6:(1)[2]	12:(7)[2]	15:(4)[2]	28:(7)[2]	39:(1)[2]		
8RL.1.5									
8RL.1.6: [3]	13:(7)[3]	27:(1)[2]							
8RL.1.7									
8RL.1.8: [3]	14:(6)[2]	15:(2)[3]	31:(7)[2]						
8RL.1.9									
8RI.0.0: [3]	35:(1)[2]								
8RI.1.0									
8RI.1.1: [2]	8:(2)[2]	23:(6)[2]	33:(1)[2]	35:(1)[2]	37:(7)[2]				
8RI.1.2: [3]	7:(1)[3]	18:(2)[3]	19:(14)[2]	20:(7)[2]	23:(1)[2]	24:(7)[2]	35:(6)[2]		
8RI.1.3: [3]	21:(1)[3]	32:(1)[2]	33:(1)[2]						
8RI.1.4: [3]	6:(6)[2]	10:(6)[2]	21:(6)[2]	32:(6)[2]	39:(6)[2]				
8RI.1.5: [3]	7:(1)[3]	9:(7)[3]	18:(5)[3]	33:(5)[2]	36:(7)[2]				
8RI.1.6: [3]	7:(1)[3]	8:(7)[2]	10:(1)[2]	22:(14)[3]	34:(7)[2]				
8RI.1.7									
8RI.1.8: [3]	7:(5)[3]	18:(2)[3]							
8RI.1.9: [2]	38:(7)[2]								
8RI.1.10									
8RI.2.0									
8RI.2.1									
8RI.2.2									
8RI.2.3									
8RI.2.4									
8RI.2.5									
8RI.2.6									

8WL.0.0									
8WL.1.0									
8WL.1.1									
8WL.1.2: [3]	42:(56)[3]								
8WL.1.3									
8WL.1.4: [3]	1:(1)[3]	42:(24)[3]							
8WL.1.5: [3]	42:(8)[3]								
8WL.1.6									
8WL.1.7									
8WL.1.8: [3]	42:(24)[3]								
8WL.1.9									
8WL.1.10									
8WL.2.0									
8WL.2.1: [2]	16:(5)[1]	17:(4)[1]	40:(12)[1]						
8WL.2.2: [1]	16:(1)[1]	17:(14)[1]	40:(2)[1]	41:(7)[1]	42:(8)[3]				
8WL.2.3: [2]	16:(1)[1]								
8WL.2.4									
8WL.2.5									
8WL.2.6									



Table 8.1b

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 8 Online*  
*Number of Assessment Items - 42*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standards #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
8RL.0.0 Reading Standards for ...	1	9	2 3	2 7	22.22 77.78	15.71	1.11	YES
8RI.0.0 Reading, Speaking, and...	2	16	2 3	5 11	31.25 68.75	24	0.58	YES
8WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 5 9 1	6.25 31.25 56.25 6.25	23.86	8.78	YES
Total	5	41	1 2 3 4	1 12 27 1	2 29 66 2	63.57	9.73	

Table 8.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 8 Online*  
*Number of Assessment Items - 42*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
8RL.0.0 Reading Standards for ...	1	9	15.71	1.11	62.62	3	36.49	4	0.89	2	NO
8RI.0.0 Reading, Speaking, and...	2	16	24	0.58	58.29	3	41.71	3	0	0	WEAK
8WL.0.0 Writing and Language ...	2	16	23.86	8.78	20.53	7	79.47	7	0	0	YES
Total	5	41	63.57	9.73	44.49	5.8	55.28	5.9	0.22	0.6	
NT = Not Tested											

*Table 8.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Online*

*Number of Assessment Items - 42*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	#	#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
8RL.0.0 Reading Standards for ...	1	9	15.71	1.11	6	0	66.67	0	YES	36	1	0.79	0.03	YES
8RI.0.0 Reading, Speaking, and...	2	16	24	0.58	8.57	0.79	53.57	4.92	YES	48	2	0.78	0.02	YES
8WL.0.0 Writing and Language ...	2	16	23.86	8.78	4.14	1.21	25.89	7.59	NO	17	2	0.76	0.07	YES
Total	5	41	63.57	9.73	6.2	2.22	48.71	21		34	16	0.78	0.02	

*Table 8.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 8 Online*

*Number of Assessment Items - 42*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8RL.0.0 Reading Standards for ...	YES	NO	YES	YES
8RI.0.0 Reading, Speaking, and...	YES	WEAK	YES	YES
8WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 8.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 8 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	3	3	3	3	3	3	3
7	2	2	2	2	2	2	2
8	3	3	3	3	3	3	3
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
13	3	3	3	3	3	3	3
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2
18	3	2	2	2	2	2	2
19	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2
21	2	2	2	2	1	2	2
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1
24	3	3	3	3	3	3	3
25	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2
27	3	3	3	3	3	3	3
28	2	2	2	2	2	2	2
29	2	2	2	2	2	2	2
30	3	3	3	3	3	3	3
31	2	2	2	2	2	2	2
32	2	2	2	2	2	2	2
33	2	2	2	2	2	2	2
34	2	2	2	2	2	2	2
35	2	2	2	2	2	2	2
36	2	3	2	2	2	2	2
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2
39	2	2	2	2	2	2	2
40	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1

*Intraclass correlation - .996*

*Pairwise Comparison - 0.98*



Table 8.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 8 Online*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	8WL.1.2			3	8WL.1.2	8WL.1.5		3	8WL.1.2			3	8WL.1.2	8WL.1.4	8WL.1.8	3	8WL.1.2	8WL.1.4	8WL.1.8	3	8WL.1.2			3	8WL.1.2	8WL.1.8	8WL.1.4
2	3	8RL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4			3	8RL.1.4		
3	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
4	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
5	2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2			2	8RL.1.2		
6	3	8RI.2.3			3	8RI.1.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3		
7	2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2		
8	3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3			3	8RI.2.3		
9	2	8RI.2.3			2	8RI.2.3			2	8RI.2.3			2	8RI.2.3			2	8RI.2.3			2	8RI.2.3			2	8RI.2.3		
10	2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2			2	8RI.2.2		
11	2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1			2	8RL.1.1		
12	2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4			2	8RL.1.4		
13	3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6			3	8RL.1.6		
14	2	8RL.1.8			2	8RL.1.8	8RL.1.3		2	8RL.1.8			2	8RL.1.8			2	8RL.1.8	8RL.1.3		2	8RL.1.8			2	8RL.1.8		
15	2	8RL.1.4			2	8RL.1.2			2	8RL.1.4			2	8RL.1.2			2	8RL.1.8	8RL.1.4		2	8RL.1.8			2	8RL.1.4		
16	2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4		
17	2	8RL.1.1			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5		
18	3	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6			2	8RI.1.6		
19	2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5			2	8RI.1.5		
20	2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			2	8RI.1.9			2	8RI.1.9		
21	2	8RI.1.1			2	8RI.1.1			2	8RI.1.1			2	8RI.1.1			1	8RI.1.1			2	8RI.1.1			2	8RI.1.1		
22	1	8WL.2.1			1	8WL.2.1			1	8WL.2.1			1	8WL.2.2			1	8WL.2.1			1	8WL.2.1			1	8WL.2.3		
23	1	8WL.2.2			1	8WL.2.1	8WL.2.2		1	8WL.2.2			1	8WL.2.2			1	8WL.2.2	8WL.2.1		1	8WL.2.2			1	8WL.2.2		
24	3	8RI.1.5			3	8RI.1.8			3	8RI.1.5			3	8RI.1.8			3	8RI.1.2	8RI.1.5		3	8RI.1.5			3	8RI.1.5		
25	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2		
26	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2		
27	3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5			3	8RI.1.5		
28	2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.4			2	8RI.1.3			2	8RI.1.4		
29	2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2			2	8RI.1.2		

30	3	8RI.1.6		3	8RI.1.6		3	8RI.1.6		3	8RI.1.6		3	8RI.1.6		3	8RI.1.6		3	8RI.1.6		
31	2	8RI.1.1		2	8RI.1.2		2	8RI.1.1		2	8RI.1.1		2	8RI.1.1		2	8RI.1.1		2	8RI.1.1		
32	2	8RI.1.6		2	8RI.1.6		2	8RI.1.6		2	8RI.1.6		2	8RI.1.6		2	8RI.1.6		2	8RI.1.6		
33	2	8RI.1.2		2	8RI.1.2		2	8RI.1.2		2	8RI.1.2		2	8RI.1.2		2	8RI.1.2		2	8RI.1.2		
34	2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3	8RL.1.1	2	8RL.1.3		2	8RL.1.3		
35	2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		
36	2	8RL.1.3		3	8RL.1.1		2	8RL.1.3		2	8RL.1.1		2	8RL.1.6		2	8RL.1.1		2	8RL.1.1		
37	2	8RL.1.4		2	8RL.1.4		2	8RL.1.4		2	8RL.1.4		2	8RL.1.4		2	8RL.1.4		2	8RL.1.4		
38	2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		2	8RL.1.3		
39	2	8RL.1.8		2	8RL.1.8		2	8RL.1.8		2	8RL.1.8		2	8RL.1.8		2	8RL.1.8		2	8RL.1.8		
40	1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		
41	1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.1		1	8WL.2.2	8WL.2.1	1	8WL.2.1		1	8WL.2.1		
42	1	8WL.2.2		1	8WL.2.2		1	8WL.2.2		1	8WL.2.2		1	8WL.2.2		1	8WL.2.2		1	8WL.2.2		
Objective Pairwise Comparison: 0.87																						
Standard Pairwise Comparison: 0.99																						

Table 8.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 8 Online*

Low		Medium		High	
0		33.6		56	
8RL.0.0					
8RL.1.0					
8RL.1.1	3(7)	4(7)	11(7)	17(1)	36(4)
8RL.1.2	15(2)	5(7)			
8RL.1.3	36(2)	34(7)	35(7)	38(7)	14(2)
8RL.1.4	37(7)	2(7)	12(7)	15(4)	
8RL.1.5					
8RL.1.6	13(7)	36(1)			
8RL.1.7					
8RL.1.8	39(7)	14(7)	15(2)		
8RL.1.9					
8RI.0.0					
8RI.1.0					
8RI.1.1	21(7)	31(6)			
8RI.1.2	31(1)	33(7)	25(14)	26(7)	24(1)
8RI.1.3	28(1)	6(2)			
8RI.1.4	16(7)	28(6)			
8RI.1.5	27(7)	17(6)	19(7)	24(5)	
8RI.1.6	18(7)	30(14)	32(7)		
8RI.1.7					
8RI.1.8	24(2)				
8RI.1.9	20(7)				
8RI.1.10					
8RI.2.0					
8RI.2.1					
8RI.2.2	10(7)	7(7)			

8RI.2.3	8(7)	9(7)	6(12)			
8RI.2.4						
8RI.2.5						
8RI.2.6						
8WL.0.0						
8WL.1.0						
8WL.1.1						
8WL.1.2	1(56)					
8WL.1.3						
8WL.1.4	1(24)					
8WL.1.5	1(8)					
8WL.1.6						
8WL.1.7						
8WL.1.8	1(24)					
8WL.1.9						
8WL.1.10						
8WL.2.0						
8WL.2.1	22(5)	40(7)	41(14)	23(4)		
8WL.2.2	41(2)	42(7)	22(1)	23(14)		
8WL.2.3	22(1)					
8WL.2.4						
8WL.2.5						
8WL.2.6						

Table 8.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 8 Online*

	Low	Medium	High
	11.2	33.6	56
1 13437	8WL.1.2:56	8WL.1.4:24	8WL.1.5:8
2 13443	8RL.1.4:7		
3 13442	8RL.1.1:7		
4 13440	8RL.1.1:7		
5 13441	8RL.1.2:7		
6 11861	8RI.1.3:2	8RI.2.3:12	
7 11866	8RI.2.2:7		
8 11906	8RI.2.3:7		
9 11807	8RI.2.3:7		
10 11869	8RI.2.2:7		
11 12664	8RL.1.1:7		
12 12670	8RL.1.4:7		
13 12696	8RL.1.6:7		
14 12702	8RL.1.3:2	8RL.1.8:7	
15 12703	8RL.1.2:2	8RL.1.4:4	8RL.1.8:2
16 9029	8RI.1.4:7		
17 9025	8RL.1.1:1	8RI.1.5:6	
18 9026	8RI.1.6:7		
19 10627	8RI.1.5:7		
20 9028	8RI.1.9:7		
21 9020	8RI.1.1:7		
22 9076	8WL.2.1:5	8WL.2.2:1	8WL.2.3:1
23 9077	8WL.2.1:4	8WL.2.2:14	
24 11815	8RI.1.2:1	8RI.1.5:5	8RI.1.8:2
25 11819	8RI.1.2:14		
26 11820	8RI.1.2:7		
27 11816	8RI.1.5:7		
28 11811	8RI.1.3:1	8RI.1.4:6	
29 11813	8RI.1.2:7		
30 12429	8RI.1.6:14		
31 11812	8RI.1.1:6	8RI.1.2:1	
32 12427	8RI.1.6:7		
33 11810	8RI.1.2:7		

34 13413	8RL.1.1:1	8RL.1.3:7	
35 13420	8RL.1.3:7		
36 13412	8RL.1.1:4	8RL.1.3:2	8RL.1.6:1
37 13416	8RL.1.4:7		
38 13414	8RL.1.3:7		
39 13419	8RL.1.8:7		
40 9079	8WL.2.1:7		
41 9080	8WL.2.1:14	8WL.2.2:2	
42 9082	8WL.2.2:7		

Table 8.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 8 Online*

Low DOK		Matched DOK		High DOK

8RL.0.0						
8RL.1.0						
8RL.1.1: [2]	3:(7)[2]	4:(7)[2]	11:(7)[2]	17:(1)[2]	34:(1)[2]	36:(4)[2]
8RL.1.2: [3]	5:(7)[2]	15:(2)[2]				
8RL.1.3: [3]	14:(2)[2]	34:(7)[2]	35:(7)[2]	36:(2)[2]	38:(7)[2]	
8RL.1.4: [3]	2:(7)[3]	12:(7)[2]	15:(4)[2]	37:(7)[2]		
8RL.1.5						
8RL.1.6: [3]	13:(7)[3]	36:(1)[2]				
8RL.1.7						
8RL.1.8: [3]	14:(7)[2]	15:(2)[2]	39:(7)[2]			
8RL.1.9						
8RI.0.0						
8RI.1.0						
8RI.1.1: [2]	21:(7)[2]	31:(6)[2]				
8RI.1.2: [3]	24:(1)[3]	25:(14)[2]	26:(7)[2]	29:(7)[2]	31:(1)[2]	33:(7)[2]
8RI.1.3: [3]	6:(2)[3]	28:(1)[2]				
8RI.1.4: [3]	16:(7)[2]	28:(6)[2]				
8RI.1.5: [3]	17:(6)[2]	19:(7)[2]	24:(5)[3]	27:(7)[3]		
8RI.1.6: [3]	18:(7)[2]	30:(14)[3]	32:(7)[2]			
8RI.1.7						
8RI.1.8: [3]	24:(2)[3]					
8RI.1.9: [2]	20:(7)[2]					
8RI.1.10						
8RI.2.0						
8RI.2.1						
8RI.2.2: [3]	7:(7)[2]	10:(7)[2]				
8RI.2.3: [3]	6:(12)[3]	8:(7)[3]	9:(7)[2]			
8RI.2.4						
8RI.2.5						
8RI.2.6						

8WL.0.0						
8WL.1.0						
8WL.1.1						
8WL.1.2: [3]	1:(56)[3]					
8WL.1.3						
8WL.1.4: [3]	1:(24)[3]					
8WL.1.5: [3]	1:(8)[3]					
8WL.1.6						
8WL.1.7						
8WL.1.8: [3]	1:(24)[3]					
8WL.1.9						
8WL.1.10						
8WL.2.0						
8WL.2.1: [2]	22:(5)[1]	23:(4)[1]	40:(7)[1]	41:(14)[1]		
8WL.2.2: [1]	22:(1)[1]	23:(14)[1]	41:(2)[1]	42:(7)[1]		
8WL.2.3: [2]	22:(1)[1]					
8WL.2.4						
8WL.2.5						
8WL.2.6						



## ELA Grade 9

Table 9.1a

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 9 Paper*

*Number of Assessment Items - 44*

Reporting Category			Level by Standards		by	Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
9RL.0.0 Reading Standards for ...	1	9	2 3	2 7	22.22 77.78	15	0	YES
9RI.0.0 Reading, Speaking, and...	2	16	2 3	3 13	18.75 81.25	22.71	0.49	YES
9WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	24.43	8.04	YES
Total	5	41	1 2 3 4	1 11 28 1	2 27 68 2	62.14	8.32	

Table 9.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 9 Paper*

*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
9RL.0.0 Reading Standards for ...	1	9	15	0	47.62	25	50.48	24	1.9	5	YES
9RI.0.0 Reading, Speaking, and...	2	16	22.71	0.49	56.35	17	43.65	17	0	0	WEAK
9WL.0.0 Writing and Language ...	2	16	24.43	8.04	13.11	13	86.89	13	0	0	YES
Total	5	41	62.14	8.32	36.78	14.8	62.76	14.5	0.46	1.1	
NT = Not Tested											

Table 9.3a

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 9 Paper

Number of Assessment Items - 44

Reporting Category			Hits		Range of Standards				Range of Know	% Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
9RL.0.0 Reading Standards for ...	1	9	15	0	5	0.82	55.56	9.07	YES	31	1	0.78	0.09	YES
9RI.0.0 Reading, Speaking, and...	2	16	22.71	0.49	6.71	0.76	41.96	4.72	WEAK	50	1	0.75	0.06	YES
9WL.0.0 Writing and Language ...	2	16	24.43	8.04	4.29	1.11	26.79	6.95	NO	18	1	0.72	0.07	YES
Total	5	41	62.14	8.32	5.3	1.25	41.44	14		33	16	0.75	0.03	

Table 9.4a

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 9 Paper

Number of Assessment Items - 44

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
9RL.0.0 Reading Standards for ...	YES	YES	YES	YES
9RI.0.0 Reading, Speaking, and...	YES	WEAK	WEAK	YES
9WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 9.5a *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 9 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	2	3	3	2	3	3	2
2	2	2	2	2	3	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	3	3	3	3	3
6	3	3	3	3	3	3	3
7	3	2	3	2	3	3	3
8	2	2	2	2	2	2	2
9	3	2	3	2	3	3	3
10	2	3	2	2	2	3	2
11	3	2	2	2	2	3	3
12	3	2	3	2	2	2	3
13	2	2	2	2	2	3	3
14	2	2	2	2	2	3	3
15	2	2	2	2	2	2	2
16	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1
19	2	2	2	2	2	2	2
20	3	3	3	3	3	3	3
21	2	3	3	2	3	3	3
22	2	2	2	2	2	2	2
23	2	2	2	1	2	2	2
24	2	2	2	2	2	2	2
25	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	3	2	2	2
29	2	2	3	2	2	3	2
30	2	3	2	3	3	3	3
31	2	2	3	3	3	3	3
32	2	2	3	2	3	3	3
33	2	2	2	2	3	2	3
34	2	2	2	2	3	3	3
35	2	2	2	2	2	2	2
36	2	2	3	2	2	3	2
37	2	2	2	3	2	3	2
38	2	2	2	3	2	2	2
39	3	2	2	2	3	2	2
40	2	3	2	2	3	3	2
41	1	1	1	1	1	2	1
42	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1
44	3	3	3	3	3	3	3

*Intraclass correlation - .9508*

*Pairwise Comparison - 0.74*

Table 9.6a

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 9 Paper*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	9RL.1.2			3	9RL.1.2			3	9RL.1.2			2	9RL.1.2			3	9RL.1.2			3	9RL.1.2			2	9RL.1.2		
2	2	9RL.1.3			2	9RL.1.1			2	9RL.1.1			2	9RL.1.3			3	9RL.1.3			2	9RL.1.1			2	9RL.1.1		
3	2	9RL.1.1			2	9RL.1.2			2	9RL.1.1			2	9RL.1.3			2	9RL.1.1			2	9RL.1.1			2	9RL.1.1		
4	2	9RL.1.1			2	9RL.1.2			2	9RL.1.2			2	9RL.1.3			2	9RL.1.1			2	9RL.1.1			2	9RL.1.1		
5	2	9RL.1.4			2	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4		
6	3	9RI.1.2			3	9RI.1.6			3	9RI.1.5			3	9RI.1.6			3	9RI.1.5			3	9RI.1.5			3	9RI.1.5		
7	3	9RI.1.6			2	9RI.1.6			3	9RI.1.6			2	9RI.1.6			3	9RI.1.6			3	9RI.1.6			3	9RI.1.6		
8	2	9RI.1.3			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.2			2	9RI.1.2			2	9RI.1.5		
9	3	9RI.1.5			2	9RI.1.5			3	9RI.1.6			2	9RI.1.8			3	9RI.1.3			3	9RI.1.5			3	9RI.1.5		
10	2	9RI.1.9			3	9RI.1.9			2	9RI.1.9			2	9RI.1.9			2	9RI.1.9			3	9RI.1.9			2	9RI.1.9		
11	3	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
12	3	9RI.1.6			2	9RI.1.3			3	9RI.1.6			2	9RI.1.2			2	9RI.1.5			2	9RI.1.6			3	9RI.1.6		
13	2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
14	2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.2			2	9RI.1.3			3	9RI.1.5			3	9RI.1.5		
15	2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5		
16	1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1		
17	1	9WL.2.2			1	9WL.2.1	9WL.2.2		1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2		
18	1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2		
19	2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1		
20	3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
21	2	9RI.1.4			3	9RI.1.5			3	9RI.1.5			2	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
22	2	9RI.1.1			2	9RI.1.2			2	9RI.1.2			2	9RI.1.2			2	9RI.1.2			2	9RI.1.1			2	9RI.1.5		
23	2	9WL.2.6			2	9RI.1.4			2	9RI.1.4			1	9RI.1.4			2	9RI.1.4			2	9WL.2.4			2	9WL.2.4		
24	2	9RI.1.1			2	9RI.1.5			2	9RI.1.1			2	9RI.1.8			2	9RI.1.5			2	9RI.1.2			2	9RI.1.1		
25	2	9RI.1.5			2	9RI.1.5			2	9RI.1.2			2	9RI.1.2			2	9RI.1.5			2	9RI.1.2			2	9RI.1.5		
26	2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2		
27	2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4		

28	2	9RL.1.3			2	9RL.1.3			2	9RL.1.3			3	9RL.1.3			2	9RL.1.3			2	9RL.1.3			2	9RL.1.3			
29	2	9RL.1.4			2	9RL.1.5			3	9RL.1.5			2	9RL.1.3			2	9RL.1.5			3	9RL.1.5			2	9RL.1.5			
30	2	9RL.1.3			3	9RL.1.2			2	9RL.1.2			3	9RL.1.3			3	9RL.1.2			3	9RL.1.2			3	9RL.1.2			
31	2	9RL.1.4			2	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			
32	2	9RL.1.2			2	9RL.1.2			3	9RL.1.7			2	9RL.1.5			3	9RL.1.5			3	9RL.1.5			3	9RL.1.2			
33	2	9RL.1.1			2	9RL.1.3			2	9RL.1.1			2	9RL.1.3			3	9RL.1.3			2	9RL.1.1			3	9RL.1.1			
34	2	9RL.1.1			2	9RL.1.3			2	9RL.1.1			2	9RL.1.3			3	9RL.1.8			3	9RL.1.3			3	9RL.1.3			
35	2	9RI.1.1			2	9RI.1.2			2	9RI.1.2			2	9RI.1.2			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			
36	2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			2	9RI.1.4			
37	2	9RI.1.1			2	9RI.1.8			2	9RI.1.5			3	9RI.1.5			2	9RI.1.5			3	9RI.1.6			2	9RI.1.5			
38	2	9RI.1.6			2	9RI.1.6			2	9RI.1.6			3	9RI.1.6			2	9RI.1.6			2	9RI.1.6			2	9RI.1.6			
39	3	9RI.1.6			2	9RI.1.6			2	9RI.1.6			2	9RI.1.6			3	9RI.1.6			2	9RI.1.6			2	9RI.1.6			
40	2	9RI.1.1			3	9RI.1.9			2	9RI.1.5			2	9RI.1.2			3	9RI.1.9			3	9RI.1.9			2	9RI.1.9			
41	1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			2	9WL.2.1			1	9RI.2.1			
42	1	9WL.2.2			1	9WL.2.1			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			
43	1	9WL.2.2			1	9WL.2.1			1	9WL.2.2			1	9WL.2.2			1	9WL.2.1			1	9WL.2.2			1	9WL.2.2			
44	3	9WL.1.1			3	9WL.1.1			3	9WL.1.1			3	9WL.1.1	9WL.1.4	9WL.1.8	3	9WL.1.1	9WL.1.4	9WL.1.8	3	9WL.1.1			3	9WL.1.1	9WL.1.4	9WL.1.8	
Objective Pairwise Comparison: 0.66																													
Standard Pairwise Comparison: 0.98																													

Table 9.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 9 Paper*

	Low			Medium			High		
	0			33.6					56
9RL.0.0									
9RL.1.0									
9RL.1.1	4(4)	2(4)	3(5)	34(2)	33(8)				
9RL.1.2	30(5)	32(3)	3(1)	1(7)	4(2)	26(7)			
9RL.1.3	28(7)	29(1)	4(1)	2(3)	3(1)	30(2)	34(4)	33(6)	
9RL.1.4	31(7)	5(7)	29(1)	27(7)					
9RL.1.5	29(5)	32(3)							
9RL.1.6									
9RL.1.7	32(1)								
9RL.1.8	34(1)								
9RL.1.9									
9RI.0.0									
9RI.1.0									
9RI.1.1	35(4)	37(1)	40(1)	22(2)	24(3)	19(7)			
9RI.1.2	12(1)	24(1)	22(4)	6(1)	8(2)	14(1)	40(1)	35(3)	25(3)
9RI.1.3	14(1)	8(1)	12(1)	9(1)					
9RI.1.4	11(7)	20(7)	21(5)	13(7)	23(4)	36(7)			
9RI.1.5	25(4)	40(1)	37(4)	24(2)	22(1)	21(2)	12(1)	9(4)	8(4)
9RI.1.6	6(2)	7(7)	9(1)	12(4)	37(1)	38(7)	39(7)		
9RI.1.7									
9RI.1.8	37(1)	9(1)	24(1)						
9RI.1.9	10(7)	40(4)							
9RI.1.10									
9RI.2.0									
9RI.2.1	41(1)								

9RI.2.2												
9RI.2.3												
9RI.2.4												
9RI.2.5												
9RI.2.6												
9WL.0.0												
9WL.1.0												
9WL.1.1	44(56)											
9WL.1.2												
9WL.1.3												
9WL.1.4	44(24)											
9WL.1.5												
9WL.1.6												
9WL.1.7												
9WL.1.8	44(24)											
9WL.1.9												
9WL.1.10												
9WL.2.0												
9WL.2.1	43(4)	41(6)	42(2)	16(7)	17(2)							
9WL.2.2	18(7)	42(12)	43(10)	17(14)								
9WL.2.3												
9WL.2.4	23(2)											
9WL.2.5												
9WL.2.6	23(1)											

Table 9.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 9 Paper*

Low		Medium		High	
11.2		33.6		56	
1 13515	9RL.1.2:7				
2 13551	9RL.1.1:4	9RL.1.3:3			
3 13516	9RL.1.1:5	9RL.1.2:1	9RL.1.3:1		
4 13518	9RL.1.1:4	9RL.1.2:2	9RL.1.3:1		
5 13534	9RL.1.4:7				
6 8998	9RI.1.2:1	9RI.1.5:4	9RI.1.6:2		
7 8996	9RI.1.6:7				
8 8995	9RI.1.2:2	9RI.1.3:1	9RI.1.5:4		
9 9001	9RI.1.3:1	9RI.1.5:4	9RI.1.6:1	9RI.1.8:1	
10 9002	9RI.1.9:7				
11 12191	9RI.1.4:7				
12 12723	9RI.1.2:1	9RI.1.3:1	9RI.1.5:1	9RI.1.6:4	
13 12190	9RI.1.4:7				
14 12192	9RI.1.2:1	9RI.1.3:1	9RI.1.5:5		
15 12193	9RI.1.5:7				
16 9734	9WL.2.1:7				
17 9735	9WL.2.1:2	9WL.2.2:14			
18 9736	9WL.2.2:7				
19 13541	9RI.1.1:7				
20 13545	9RI.1.4:7				
21 13537	9RI.1.4:5	9RI.1.5:2			
22 13543	9RI.1.1:2	9RI.1.2:4	9RI.1.5:1		
23 13535	9RI.1.4:4	9WL.2.4:2	9WL.2.6:1		
24 13549	9RI.1.1:3	9RI.1.2:1	9RI.1.5:2	9RI.1.8:1	
25 13539	9RI.1.2:3	9RI.1.5:4			
26 12633	9RL.1.2:7				
27 12632	9RL.1.4:7				
28 12624	9RL.1.3:7				
29 12631	9RL.1.3:1	9RL.1.4:1	9RL.1.5:5		
30 12654	9RL.1.2:5	9RL.1.3:2			
31 12629	9RL.1.4:7				
32 12628	9RL.1.2:3	9RL.1.5:3	9RL.1.7:1		



33 12626	9RL.1.1:8	9RL.1.3:6		
34 12621	9RL.1.1:2	9RL.1.3:4	9RL.1.8:1	
35 11097	9RI.1.1:4	9RI.1.2:3		
36 9031	9RI.1.4:7			
37 11098	9RI.1.1:1	9RI.1.5:4	9RI.1.6:1	9RI.1.8:1
38 9038	9RI.1.6:7			
39 9033	9RI.1.6:7			
40 9034	9RI.1.1:1	9RI.1.2:1	9RI.1.5:1	9RI.1.9:4
41 13455	9RI.2.1:1	9WL.2.1:6		
42 13456	9WL.2.1:2	9WL.2.2:12		
43 13457	9WL.2.1:4	9WL.2.2:10		
44 13566(1a)	9WL.1.1:56	9WL.1.4:24	9WL.1.8:24	

Table 9.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 9 Paper*

Low DOK		Matched DOK		High DOK

9RL.0.0												
9RL.1.0												
9RL.1.1: [2]	2:(4)[2]	3:(5)[2]	4:(4)[2]	33:(8)[2]	34:(2)[2]							
9RL.1.2: [3]	1:(7)[3]	3:(1)[2]	4:(2)[2]	26:(7)[2]	30:(5)[3]	32:(3)[2]						
9RL.1.3: [3]	2:(3)[2]	3:(1)[2]	4:(1)[2]	28:(7)[2]	29:(1)[2]	30:(2)[2]	33:(6)[2]	34:(4)[2]				
9RL.1.4: [3]	5:(7)[3]	27:(7)[2]	29:(1)[2]	31:(7)[3]								
9RL.1.5: [3]	29:(5)[2]	32:(3)[3]										
9RL.1.6												
9RL.1.7: [3]	32:(1)[3]											
9RL.1.8: [3]	34:(1)[3]											
9RL.1.9												
9RI.0.0												
9RI.1.0												
9RI.1.1: [2]	19:(7)[2]	22:(2)[2]	24:(3)[2]	35:(4)[2]	37:(1)[2]	40:(1)[2]						
9RI.1.2: [3]	6:(1)[3]	8:(2)[2]	12:(1)[2]	14:(1)[2]	22:(4)[2]	24:(1)[2]	25:(3)[2]	35:(3)[2]	40:(1)[2]			
9RI.1.3: [3]	8:(1)[2]	9:(1)[3]	12:(1)[2]	14:(1)[2]								
9RI.1.4: [3]	11:(7)[2]	13:(7)[2]	20:(7)[3]	21:(5)[3]	23:(4)[2]	36:(7)[2]						
9RI.1.5: [3]	6:(4)[3]	8:(4)[2]	9:(4)[3]	12:(1)[2]	14:(5)[2]	15:(7)[2]	21:(2)[3]	22:(1)[2]	24:(2)[2]	25:(4)[2]	37:(4)[2]	40:(1)[2]
9RI.1.6: [3]	6:(2)[3]	7:(7)[3]	9:(1)[3]	12:(4)[3]	37:(1)[3]	38:(7)[2]	39:(7)[2]					
9RI.1.7												
9RI.1.8: [3]	9:(1)[2]	24:(1)[2]	37:(1)[2]									
9RI.1.9: [3]	10:(7)[2]	40:(4)[3]										
9RI.1.10												
9RI.2.0												
9RI.2.1: [3]	41:(1)[1]											
9RI.2.2												
9RI.2.3												
9RI.2.4												
9RI.2.5												

9RI.2.6												
9WL.0.0												
9WL.1.0												
9WL.1.1: [3]	44:(56)[3]											
9WL.1.2												
9WL.1.3												
9WL.1.4: [3]	44:(24)[3]											
9WL.1.5												
9WL.1.6												
9WL.1.7												
9WL.1.8: [3]	44:(24)[3]											
9WL.1.9												
9WL.1.10												
9WL.2.0												
9WL.2.1: [2]	16:(7)[1]	17:(2)[1]	41:(6)[1]	42:(2)[1]	43:(4)[1]							
9WL.2.2: [1]	17:(14)[1]	18:(7)[1]	42:(12)[1]	43:(10)[1]								
9WL.2.3												
9WL.2.4: [2]	23:(2)[2]											
9WL.2.5												
9WL.2.6: [2]	23:(1)[2]											

Table 9.1b

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 9 Online*  
*Number of Assessment Items - 44*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
9RL.0.0 Reading Standards for ...	1	10	2 3	2 7	22.22 77.78	15.71	0.76	YES
9RI.0.0 Reading, Speaking, and...	2	16	2 3	3 13	18.75 81.25	23.71	1.25	YES
9WL.0.0 Writing and Language ...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	24.43	8.7	YES
Total	5	42	1 2 3 4	1 11 28 1	2 27 68 2	63.85	9.25	

Table 9.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 9 Online*  
*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
9RL.0.0 Reading Standards for ...	1	10	15.71	0.76	55.23	22	42.73	21	2.04	5	WEAK
9RI.0.0 Reading, Speaking, and...	2	16	23.71	1.25	59.05	14	40.32	13	0.62	2	WEAK
9WL.0.0 Writing and Language ...	2	16	24.43	8.7	14.47	13	84.71	12	0.82	2	YES
Total	5	42	63.85	9.25	40.49	12.9	58.39	12.6	1.12	1.3	
NT = Not Tested											

*Table 9.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 9 Online*

*Number of Assessment Items - 44*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
9RL.0.0 Reading Standards for ...	1	10	15.71	0.76	5.86	0.9	58.57	9	YES	32	2	0.75	0.06	YES
9RI.0.0 Reading, Speaking, and...	2	16	23.71	1.25	7	1.15	43.75	7.22	WEAK	50	2	0.79	0.04	YES
9WL.0.0 Writing and Language ...	2	16	24.43	8.7	3.86	1.07	24.11	6.68	NO	18	2	0.74	0.08	YES
Total	5	42	63.85	9.25	5.6	1.59	42.14	17		33	16	0.76	0.02	

*Table 9.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 9 Online*

*Number of Assessment Items - 44*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
9RL.0.0 Reading Standards for ...	YES	WEAK	YES	YES
9RI.0.0 Reading, Speaking, and...	YES	WEAK	WEAK	YES
9WL.0.0 Writing and Language ...	YES	YES	NO	YES

Table 9.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 9 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	3	3	3	3	3	3	3
5	2	2	2	2	2	2	2
6	2	2	2	2	2	2	2
7	3	2	2	2	3	2	2
8	2	3	3	2	3	3	2
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	3	3	3	3	3
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2
18	3	2	2	2	2	3	3
19	3	2	3	2	2	2	3
20	2	2	2	2	2	3	3
21	2	2	2	2	2	3	3
22	2	2	2	2	2	2	2
23	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1
26	2	2	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	3	2	2	2
29	2	2	3	2	2	3	2
30	2	3	2	3	3	3	3
31	2	2	3	3	3	3	3
32	2	2	3	2	3	3	3
33	2	2	2	2	3	2	3
34	2	2	2	2	3	3	3
35	2	2	2	2	2	2	2
36	2	2	3	2	2	3	2
37	3	3	3	3	3	3	3
38	2	2	2	2	2	3	2
39	2	2	2	2	2	2	2
40	2	2	2	2	2	2	2
41	3	2	2	2	3	2	2
42	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1
44	1	1	1	1	1	1	1

*Intraclass correlation - .9638*

*Pairwise Comparison - 0.81*

Table 9.6b

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 9 Online*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	9WL.1.2			3	9WL.1.2			3	9WL.1.2			3	9WL.1.2	9WL.1.4	9WL.1.8	3	9WL.1.2	9WL.1.4	9WL.1.8	3	9WL.1.2			3	9WL.1.2	9WL.1.4	9WL.1.8
2	2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1		
3	3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
4	3	9RI.1.1			3	9RI.1.5			3	9RI.1.5			3	9RI.1.5			3	9RI.1.5			3	9RI.1.5			3	9RI.1.5		
5	2	9RI.1.1			2	9RI.1.2			2	9RI.1.2			2	9RI.1.2			2	9RI.1.2			2	9RI.1.1			2	9RI.1.5		
6	2	9RI.1.5			2	9RI.1.5			2	9RI.1.2			2	9RI.1.2			2	9RI.1.5			2	9RI.1.2			2	9RI.1.5		
7	3	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			3	9RI.1.5			2	9RI.1.5			2	9RI.1.5		
8	2	9RL.1.2			3	9RL.1.2			3	9RL.1.2			2	9RL.1.2			3	9RL.1.2			3	9RL.1.2			2	9RI.1.2		
9	2	9RL.1.0			2	9RL.1.0			2	9RL.1.0			2	9RL.1.0			2	9RL.1.0			2	9RL.1.0			2	9RL.1.0		
10	2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4			2	9RL.1.4		
11	2	9RL.1.1			2	9RL.1.2			2	9RL.1.1			2	9RL.1.3			2	9RL.1.1			2	9RL.1.1			2	9RL.1.1		
12	2	9RL.1.1			2	9RL.1.2			2	9RL.1.2			2	9RL.1.3			2	9RL.1.1			2	9RL.1.1			2	9RL.1.1		
13	2	9RL.1.4			2	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4			3	9RL.1.4		
14	2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3		
15	2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3			2	9RI.2.3	9RI.1.6		2	9RI.2.3			2	9RI.2.3		
16	2	9RI.1.9			2	9RI.1.7			2	9RI.1.7			2	9RI.1.5			2	9RI.2.2			2	9RI.1.7			2	9RI.1.1		
17	2	9RI.1.1			2	9RI.1.1			2	9RI.1.1			2	9RI.1.1	9WL.2.2		2	9RI.1.1	9RI.2.2		2	9RI.1.1			2	9RI.1.1		
18	3	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
19	3	9RI.1.6			2	9RI.1.3			3	9RI.1.6			2	9RI.1.2			2	9RI.1.5			2	9RI.1.6			3	9RI.1.6		
20	2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			2	9RI.1.4			3	9RI.1.4			3	9RI.1.4		
21	2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.2			2	9RI.1.3			3	9RI.1.5			3	9RI.1.5		
22	2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5			2	9RI.1.5		
23	1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1			1	9WL.2.1		
24	1	9WL.2.2			1	9WL.2.1	9WL.2.2		1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2		
25	1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2			1	9WL.2.2		
26	2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2			2	9RL.1.2		



27	2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		2	9RL.1.4		
28	2	9RL.1.3		2	9RL.1.3		2	9RL.1.3		3	9RL.1.3		2	9RL.1.3		2	9RL.1.3		2	9RL.1.3		2	9RL.1.3		
29	2	9RL.1.4		2	9RL.1.5		3	9RL.1.5		2	9RL.1.3		2	9RL.1.5		3	9RL.1.5		2	9RL.1.5		2	9RL.1.5		
30	2	9RL.1.3		3	9RL.1.2		2	9RL.1.2		3	9RL.1.3		3	9RL.1.2		3	9RL.1.2		3	9RL.1.2		3	9RL.1.2		
31	2	9RL.1.4		2	9RL.1.4		3	9RL.1.4		3	9RL.1.4		3	9RL.1.4		3	9RL.1.4		3	9RL.1.4		3	9RL.1.4		
32	2	9RL.1.2		2	9RL.1.2		3	9RL.1.7		2	9RL.1.5		3	9RL.1.5		3	9RL.1.5		3	9RL.1.2		3	9RL.1.2		
33	2	9RL.1.1		2	9RL.1.3		2	9RL.1.1		2	9RL.1.3		3	9RL.1.3		2	9RL.1.1		3	9RL.1.1		3	9RL.1.1		
34	2	9RL.1.1		2	9RL.1.3		2	9RL.1.1		2	9RL.1.3		3	9RL.1.8		3	9RL.1.3		3	9RL.1.3		3	9RL.1.3		
35	2	9RI.1.1		2	9RI.1.2		2	9RI.1.2		2	9RI.1.2		2	9RI.1.1		2	9RI.1.1		2	9RI.1.1		2	9RI.1.1		
36	2	9RI.1.4		2	9RI.1.4		3	9RI.1.4		2	9RI.1.4		2	9RI.1.4		3	9RI.1.4		2	9RI.1.4		2	9RI.1.4		
37	3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		3	9RI.1.6		
38	2	9RI.1.1		2	9RI.1.8		2	9RI.1.5		2	9RI.1.5		2	9RI.1.5		3	9RI.1.6		2	9RI.1.5		2	9RI.1.5		
39	2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		2	9RI.1.4		
40	2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		
41	3	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		3	9RI.1.6		2	9RI.1.6		2	9RI.1.6		2	9RI.1.6		
42	1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		1	9WL.2.1		
43	1	9WL.2.2		1	9WL.2.1		1	9WL.2.2		1	9WL.2.2		1	9WL.2.2		1	9WL.2.2		1	9WL.2.2		1	9WL.2.2		
44	1	9WL.2.2		1	9WL.2.1		1	9WL.2.2		1	9WL.2.2		1	9WL.2.1		1	9WL.2.2		1	9WL.2.2		1	9WL.2.2		

Objective Pairwise Comparison: 0.73

Standard Pairwise Comparison: 0.98

Table 9.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 9 Online*

Low		Medium				High			
0		33.6				56			
9RL.0.0									
9RL.1.0	9(7)								
9RL.1.1	11(4)	12(4)	33(8)	34(2)					
9RL.1.2	32(3)	30(5)	12(2)	11(1)	8(6)	26(7)			
9RL.1.3	28(7)	29(1)	11(1)	12(1)	30(2)	33(6)	34(4)		
9RL.1.4	31(7)	13(7)	10(7)	29(1)	27(7)				
9RL.1.5	29(5)	32(3)							
9RL.1.6									
9RL.1.7	32(1)								
9RL.1.8	34(1)								
9RL.1.9									
9RI.0.0									
9RI.1.0									
9RI.1.1	35(4)	38(1)	17(14)	11(1)	16(1)	5(2)	2(7)	4(1)	
9RI.1.2	5(4)	8(1)	6(3)	19(1)	21(1)	35(3)			
9RI.1.3	21(1)	19(1)							
9RI.1.4	20(7)	18(7)	3(7)	36(7)	39(7)				
9RI.1.5	38(4)	4(6)	6(4)	7(7)	5(1)	16(1)	19(1)	21(5)	22(7)
9RI.1.6	19(4)	38(1)	40(7)	41(7)	37(7)	15(1)			
9RI.1.7	16(3)								
9RI.1.8	38(1)								
9RI.1.9	16(1)								
9RI.1.10									
9RI.2.0									
9RI.2.1									

9RI.2.2	16(1)	17(2)							
9RI.2.3	14(7)	15(7)							
9RI.2.4									
9RI.2.5									
9RI.2.6									
9WL.0.0									
9WL.1.0									
9WL.1.1									
9WL.1.2	1(56)								
9WL.1.3									
9WL.1.4	1(24)								
9WL.1.5									
9WL.1.6									
9WL.1.7									
9WL.1.8	1(24)								
9WL.1.9									
9WL.1.10									
9WL.2.0									
9WL.2.1	23(7)	24(2)	44(4)	42(7)	43(2)				
9WL.2.2	43(12)	44(10)	25(7)	17(2)	24(14)				
9WL.2.3									
9WL.2.4									
9WL.2.5									
9WL.2.6									

Table 9.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 9 Online*

	Low	Medium	High	
	11.2	33.6	56	
1 13557	9WL.1.2:56	9WL.1.4:24	9WL.1.8:24	
2 13541	9RI.1.1:7			
3 13545	9RI.1.4:7			
4 13547	9RI.1.1:1	9RI.1.5:6		
5 13543	9RI.1.1:2	9RI.1.2:4	9RI.1.5:1	
6 13539	9RI.1.2:3	9RI.1.5:4		
7 13546	9RI.1.5:7			
8 13515	9RL.1.2:6	9RI.1.2:1		
9 13553	9RL.1.0:7			
10 13550	9RL.1.4:7			
11 13516	9RL.1.1:4	9RL.1.2:1	9RL.1.3:1	9RI.1.1:1
12 13518	9RL.1.1:4	9RL.1.2:2	9RL.1.3:1	
13 13534	9RL.1.4:7			
14 12118	9RI.2.3:7			
15 12119	9RI.1.6:1	9RI.2.3:7		
16 12561	9RI.1.1:1	9RI.1.5:1	9RI.1.7:3	9RI.1.9:1 9RI.2.2:1
17 12544	9RI.1.1:14	9RI.2.2:2	9WL.2.2:2	
18 12191	9RI.1.4:7			
19 12723	9RI.1.2:1	9RI.1.3:1	9RI.1.5:1	9RI.1.6:4
20 12190	9RI.1.4:7			
21 12192	9RI.1.2:1	9RI.1.3:1	9RI.1.5:5	
22 12193	9RI.1.5:7			
23 9734	9WL.2.1:7			
24 9735	9WL.2.1:2	9WL.2.2:14		
25 9736	9WL.2.2:7			
26 12633	9RL.1.2:7			
27 12632	9RL.1.4:7			
28 12624	9RL.1.3:7			
29 12631	9RL.1.3:1	9RL.1.4:1	9RL.1.5:5	
30 12654	9RL.1.2:5	9RL.1.3:2		
31 12629	9RL.1.4:7			
32 12628	9RL.1.2:3	9RL.1.5:3	9RL.1.7:1	

33 12626	9RL.1.1:8	9RL.1.3:6		
34 12621	9RL.1.1:2	9RL.1.3:4	9RL.1.8:1	
35 11097	9RI.1.1:4	9RI.1.2:3		
36 9031	9RI.1.4:7			
37 9037	9RI.1.6:7			
38 11098	9RI.1.1:1	9RI.1.5:4	9RI.1.6:1	9RI.1.8:1
39 9032	9RI.1.4:7			
40 9038	9RI.1.6:7			
41 9033	9RI.1.6:7			
42 13455	9WL.2.1:7			
43 13456	9WL.2.1:2	9WL.2.2:12		
44 13457	9WL.2.1:4	9WL.2.2:10		

Table 9.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 9 Online*

Low DOK		Matched DOK		High DOK

9RL.0.0									
9RL.1.0: [3]	9:(7)[2]								
9RL.1.1: [2]	11:(4)[2]	12:(4)[2]	33:(8)[2]	34:(2)[2]					
9RL.1.2: [3]	8:(6)[3]	11:(1)[2]	12:(2)[2]	26:(7)[2]	30:(5)[3]	32:(3)[2]			
9RL.1.3: [3]	11:(1)[2]	12:(1)[2]	28:(7)[2]	29:(1)[2]	30:(2)[2]	33:(6)[2]	34:(4)[2]		
9RL.1.4: [3]	10:(7)[2]	13:(7)[3]	27:(7)[2]	29:(1)[2]	31:(7)[3]				
9RL.1.5: [3]	29:(5)[2]	32:(3)[3]							
9RL.1.6									
9RL.1.7: [3]	32:(1)[3]								
9RL.1.8: [3]	34:(1)[3]								
9RL.1.9									
9RI.0.0									
9RI.1.0									
9RI.1.1: [2]	2:(7)[2]	4:(1)[3]	5:(2)[2]	11:(1)[2]	16:(1)[2]	17:(14)[2]	35:(4)[2]	38:(1)[2]	
9RI.1.2: [3]	5:(4)[2]	6:(3)[2]	8:(1)[2]	19:(1)[2]	21:(1)[2]	35:(3)[2]			
9RI.1.3: [3]	19:(1)[2]	21:(1)[2]							
9RI.1.4: [3]	3:(7)[3]	18:(7)[2]	20:(7)[2]	36:(7)[2]	39:(7)[2]				
9RI.1.5: [3]	4:(6)[3]	5:(1)[2]	6:(4)[2]	7:(7)[2]	16:(1)[2]	19:(1)[2]	21:(5)[2]	22:(7)[2]	38:(4)[2]
9RI.1.6: [3]	15:(1)[2]	19:(4)[3]	37:(7)[3]	38:(1)[3]	40:(7)[2]	41:(7)[2]			
9RI.1.7: [3]	16:(3)[2]								
9RI.1.8: [3]	38:(1)[2]								
9RI.1.9: [3]	16:(1)[2]								
9RI.1.10									
9RI.2.0									
9RI.2.1									
9RI.2.2: [3]	16:(1)[2]	17:(2)[2]							
9RI.2.3: [3]	14:(7)[2]	15:(7)[2]							
9RI.2.4									
9RI.2.5									

9RI.2.6									
9WL.0.0									
9WL.1.0									
9WL.1.1									
9WL.1.2: [3]	1:(56)[3]								
9WL.1.3									
9WL.1.4: [3]	1:(24)[3]								
9WL.1.5									
9WL.1.6									
9WL.1.7									
9WL.1.8: [3]	1:(24)[3]								
9WL.1.9									
9WL.1.10									
9WL.2.0									
9WL.2.1: [2]	23:(7)[1]	24:(2)[1]	42:(7)[1]	43:(2)[1]	44:(4)[1]				
9WL.2.2: [1]	17:(2)[2]	24:(14)[1]	25:(7)[1]	43:(12)[1]	44:(10)[1]				
9WL.2.3									
9WL.2.4									
9WL.2.5									
9WL.2.6									

## ELA Grade 10

Table 10.1a

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 10 Paper*

*Number of Assessment Items - 44*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
10RL.0.0 Reading Standards for...	1	9	2 3	2 7	22.22 77.78	16.14	0.38	YES
10RI.0.0 Reading, Speaking, an...	2	17	2 3	3 13	18.75 81.25	22	0	YES
10WL.0.0 Writing and Language...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	21.86	8.55	YES
Total	5	42	1 2 3 4	1 11 28 1	2 27 68 2	60	8.74	

Table 10.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 10 Paper*

*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
10RL.0.0 Reading Standards for...	1	9	16.14	0.38	70.01	12	26.52	10	3.47	6	NO
10RI.0.0 Reading, Speaking, an...	2	17	22	0	57.79	11	41.56	10	0.65	2	WEAK
10WL.0.0 Writing and Language...	2	16	21.86	8.55	21.9	28	78.1	28	0	0	YES
Total	5	42	60	8.74	49.29	11.1	49.52	11.5	1.19	1.4	
NT = Not Tested											



*Table 10.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 10 Paper*

*Number of Assessment Items - 44*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
10RL.0.0 Reading Standards for...	1	9	16.14	0.38	5.86	0.38	65.08	4.2	YES	34	1	0.74	0.06	YES
10RI.0.0 Reading, Speaking, an...	2	17	22	0	7.71	0.49	45.38	2.87	WEAK	49	1	0.74	0.04	YES
10WL.0.0 Writing and Language...	2	16	21.86	8.55	4	1	25	6.25	NO	17	2	0.72	0.08	YES
Total	5	42	60	8.74	5.9	1.86	45.15	20		33	16	0.73	0.01	

*Table 10.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 10 Paper*

*Number of Assessment Items - 44*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
10RL.0.0 Reading Standards for...	YES	NO	YES	YES
10RI.0.0 Reading, Speaking, an...	YES	WEAK	WEAK	YES
10WL.0.0 Writing and Language...	YES	YES	NO	YES

Table 10.5a *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 10 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	2	2	2	2	3	2	2
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	3	2	2
6	2	3	2	2	2	2	2
7	3	3	3	3	3	3	3
8	2	2	2	2	2	2	2
9	2	2	2	2	2	3	2
10	2	2	2	2	3	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2
14	2	3	2	2	2	2	2
15	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1
17	1	1	1	1	1	2	1
18	2	3	2	2	2	2	2
19	2	2	2	2	2	2	2
20	2	3	2	2	2	1	2
21	3	3	2	2	2	2	2
22	2	2	2	2	2	2	2
23	2	2	2	2	2	2	3
24	2	2	2	2	2	2	2
25	2	2	2	2	2	2	2
26	2	2	2	2	3	2	2
27	2	3	2	2	2	2	2
28	2	3	2	2	2	2	2
29	2	2	2	2	3	2	3
30	2	2	2	2	2	2	2
31	2	2	2	2	2	2	2
32	2	2	2	2	2	2	2
33	3	2	2	2	2	2	3
34	2	2	2	2	2	2	2
35	2	2	2	2	2	2	2
36	2	3	2	2	2	2	3
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2
39	3	3	3	3	3	3	3
40	2	2	2	2	2	2	2
41	1	1	1	1	1	1	1
42	1	1	1	1	1	2	1
43	1	1	1	1	1	1	1
44	3	3	3	3	1	3	3

*Intraclass correlation - .9491*  
*Pairwise Comparison - 0.85*

Table 10.6a

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 10 Paper*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	10RL.1.4			2	10RL.1.4			2	10RL.1.4			2	10RL.1.4			3	10RL.1.4			2	10RL.1.4			2	10RL.1.4		
2	2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1		
3	2	10RL.1.1			2	10RL.1.1			2	10RL.1.2			2	10RL.1.3			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1		
4	2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1			2	10RL.1.1		
5	2	10RL.1.3			2	10RL.1.3			2	10RL.1.3			2	10RL.1.3			3	10RL.1.3			2	10RL.1.3			2	10RL.1.3		
6	2	10RL.1.2			3	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2		
7	3	10RI.1.5			3	10RI.1.5			3	10RI.1.2			3	10RI.1.5			3	10RI.1.6			3	10RI.1.4			3	10RI.1.5		
8	2	10RI.1.3			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5		
9	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.8			2	10RI.1.3			3	10RI.1.5			2	10RI.1.5		
10	2	10RI.1.2			2	10RI.1.2			2	10RI.1.2			2	10RI.1.2			3	10RI.1.2			2	10RI.1.2			2	10RI.1.2		
11	2	10RI.1.3			2	10RI.1.1			2	10RI.1.2			2	10RI.1.2			2	10RI.1.1			2	10RI.1.1			2	10RI.1.1		
12	2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4		
13	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.2			2	10RI.1.5		
14	2	10RI.1.9			3	10RI.1.9			2	10RI.1.9			2	10RI.1.2			2	10RI.1.9			2	10RI.1.9			2	10RI.1.9		
15	1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2		
16	1	10WL.2.1			1	10WL.2.1			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.2			1	10WL.2.1		
17	1	10WL.2.1			1	10WL.2.1			1	10WL.2.1			1	10WL.2.1			2	10WL.2.1			2	10WL.1.2			1	10WL.2.1		
18	2	10RI.1.1			3	10RI.1.1			2	10RI.1.1			2	10RI.1.1			2	10RI.1.1			2	10RI.1.1			2	10RI.1.1		
19	2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4		
20	2	10RI.1.0			3	10RI.1.0			2	10RI.1.0			2	10RI.1.0			2	10RI.1.0			1	10RI.1.0			2	10RI.1.0		
21	3	10RI.1.6			3	10RI.1.6			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6		
22	2	10RI.1.1			2	10RI.1.1			2	10RI.1.2			2	10RI.1.2			2	10RI.1.5			2	10RI.1.1			2	10RI.1.1		
23	2	10RL.1.1			2	10RL.1.1			2	10RL.1.1			2	10RL.1.1			2	10RL.1.1			2	10RL.1.1			3	10RL.1.1		

		4			4			4			4			4			4			4				
24	2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3				
25	2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3				
26	2	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 1		2	10RL.1. 3		3	10RL.1. 3		2	10RL.1. 3		2	10RL.1. 3				
27	2	10RL.1. 4		3	10RL.1. 5		2	10RL.1. 5		2	10RL.1. 5		2	10RL.1. 5		2	10RL.1. 5		2	10RL.1. 5				
28	2	10RL.1. 1		3	10RL.1. 2		2	10RL.1. 2		2	10RL.1. 2		2	10RL.1. 2		2	10RL.1. 2		2	10RL.1. 2				
29	2	10RL.1. 1		2	10RL.1. 3		2	10RL.1. 1		2	10RL.1. 3		3	10RL.1. 1		2	10RL.1. 1		3	10RL.1. 1				
30	2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8				
31	2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8		2	10RL.1. 8				
32	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.5		2	10RI.1.1		2	10RI.1.1		2	10RI.1.2				
33	3	10RI.1.3		2	10RI.1.3		2	10RI.1.5		2	10RI.1.5		2	10RI.1.5	10RI.1.3	2	10RI.1.3		3	10RI.1.3				
34	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1				
35	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RL.1. 1		2	10RI.1.1		2	10RI.1.1				
36	2	10RI.1.6		3	10RI.1.6		2	10RI.1.6		2	10RI.1.6		2	10RI.1.6		2	10RI.1.6		3	10RI.1.6				
37	2	10RI.1.1		2	10RI.1.5		2	10RI.1.5		2	10RI.1.2		2	10RI.1.5		2	10RI.1.5		2	10RI.1.5				
38	2	10RI.1.4		2	10RI.1.4		2	10RI.1.4		2	10RI.1.4		2	10RI.1.4		2	10RI.1.4		2	10RI.1.4				
39	3	10RI.1.5		3	10RI.1.6		3	10RI.1.6		3	10RI.1.6		3	10RI.1.6		3	10RI.1.6		3	10RI.1.6				
40	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1				
41	1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2				
42	1	10WL.2. 2		1	10WL.2. 1		1	10WL.2. 1		1	10WL.2. 1		1	10WL.2. 1		2	10WL.2. 1		1	10WL.2. 1				
43	1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2		1	10WL.2. 2				
44	3	10WL.1. 1		3	10WL.1. 1		3	10WL.1. 1		3	10WL.1. 1	10WL.1. 4	10WL.1. 8	10WL.1. 1	10WL.1. 2	10WL.1. 4	10WL.1. 8	3	10WL.1. 1		3	10WL.1. 1	10WL.1. 4	10WL.1. 8
Objective Pairwise Comparison: 0.76																								
Standard Pairwise Comparison: 0.99																								

Table 10.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 10 Paper*

Low				Medium				High	
0				28.8				48	
10RL.0.0									
10RL.1.0									
10RL.1.1	2(5)	4(5)	3(4)	26(1)	28(1)	29(10)	35(1)		
10RL.1.2	28(6)	3(1)	6(7)						
10RL.1.3	3(2)	4(2)	5(7)	2(2)	26(6)	29(4)	24(7)	25(7)	
10RL.1.4	27(1)	23(7)	1(7)						
10RL.1.5	27(6)								
10RL.1.6									
10RL.1.7									
10RL.1.8	30(7)	31(7)							
10RL.1.9									
10RI.0.0									
10RI.1.0	20(7)								
10RI.1.1	18(7)	22(4)	32(5)	11(4)	35(6)	34(7)	40(7)	37(1)	
10RI.1.2	37(1)	11(2)	10(7)	14(1)	13(1)	7(1)	32(1)	22(2)	
10RI.1.3	8(1)	9(1)	11(1)	33(5)					
10RI.1.4	38(7)	12(7)	7(1)	19(7)					
10RI.1.5	22(1)	32(1)	7(4)	8(6)	9(5)	13(6)	39(1)	33(3)	37(5)
10RI.1.6	36(7)	39(6)	7(1)	21(7)					
10RI.1.7									
10RI.1.8	9(1)								
10RI.1.9	14(6)								
10RI.1.10									
10RI.2.0									
10RI.2.1									

10RI.2.2									
10RI.2.3									
10RI.2.4									
10RI.2.5									
10RI.2.6									
10WL.0.0									
10WL.1.0									
10WL.1.1	44(48)								
10WL.1.2	44(8)	17(1)							
10WL.1.3									
10WL.1.4	44(24)								
10WL.1.5									
10WL.1.6									
10WL.1.7									
10WL.1.8	44(24)								
10WL.1.9									
10WL.1.10									
10WL.2.0									
10WL.2.1	17(6)	16(3)	42(6)						
10WL.2.2	42(1)	43(14)	41(7)	16(4)	15(7)				
10WL.2.3									
10WL.2.4									
10WL.2.5									
10WL.2.6									

Table 10.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 10 Paper*

Low		Medium		High	
9.6		28.8		48	
1 8812	10RL.1.4:7				
2 8813	10RL.1.1:5	10RL.1.3:2			
3 8810	10RL.1.1:4	10RL.1.2:1	10RL.1.3:2		
4 10155	10RL.1.1:5	10RL.1.3:2			
5 8852	10RL.1.3:7				
6 8811	10RL.1.2:7				
7 9822	10RI.1.2:1	10RI.1.4:1	10RI.1.5:4	10RI.1.6:1	
8 9813	10RI.1.3:1	10RI.1.5:6			
9 9824	10RI.1.3:1	10RI.1.5:5	10RI.1.8:1		
10 9816	10RI.1.2:7				
11 9814	10RI.1.1:4	10RI.1.2:2	10RI.1.3:1		
12 9826	10RI.1.4:7				
13 9821	10RI.1.2:1	10RI.1.5:6			
14 9825	10RI.1.2:1	10RI.1.9:6			
15 8757	10WL.2.2:7				
16 8758	10WL.2.1:3	10WL.2.2:4			
17 8763	10WL.1.2:1	10WL.2.1:6			
18 13586	10RI.1.1:7				
19 13588	10RI.1.4:7				
20 13592	10RI.1.0:7				
21 13594	10RI.1.6:7				
22 13593	10RI.1.1:4	10RI.1.2:2	10RI.1.5:1		
23 12446	10RL.1.4:7				
24 12863	10RL.1.3:7				
25 12478	10RL.1.3:7				
26 12482	10RL.1.1:1	10RL.1.3:6			
27 12449	10RL.1.4:1	10RL.1.5:6			
28 12477	10RL.1.1:1	10RL.1.2:6			
29 12480	10RL.1.1:10	10RL.1.3:4			
30 12473	10RL.1.8:7				
31 12474	10RL.1.8:7				
32 12692	10RI.1.1:5	10RI.1.2:1	10RI.1.5:1		



33 12807	10RI.1.3:5	10RI.1.5:3		
34 12912	10RI.1.1:7			
35 12923	10RI.1.1:1	10RI.1.1:6		
36 12928	10RI.1.6:7			
37 13603	10RI.1.1:1	10RI.1.2:1	10RI.1.5:5	
38 13605	10RI.1.4:7			
39 13609	10RI.1.5:1	10RI.1.6:6		
40 13604	10RI.1.1:7			
41 13571	10WL.2.2:7			
42 13572	10WL.2.1:6	10WL.2.2:1		
43 13573	10WL.2.2:14			
44 13640(1a)	10WL.1.1:48	10WL.1.2:8	10WL.1.4:24	10WL.1.8:24

Table 10.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*  
*AzMERIT 2017 ELA Grade 10 Paper*

Low DOK		Matched DOK		High DOK

10RL.0.0									
10RL.1.0									
10RL.1.1: [2]	2:(5)[2]	3:(4)[2]	4:(5)[2]	26:(1)[2]	28:(1)[2]	29:(10)[2]	35:(1)[2]		
10RL.1.2: [3]	3:(1)[2]	6:(7)[2]	28:(6)[2]						
10RL.1.3: [3]	2:(2)[2]	3:(2)[2]	4:(2)[2]	5:(7)[2]	24:(7)[2]	25:(7)[2]	26:(6)[2]	29:(4)[2]	
10RL.1.4: [3]	1:(7)[2]	23:(7)[2]	27:(1)[2]						
10RL.1.5: [3]	27:(6)[2]								
10RL.1.6									
10RL.1.7									
10RL.1.8: [3]	30:(7)[2]	31:(7)[2]							
10RL.1.9									
10RI.0.0									
10RI.1.0: [3]	20:(7)[2]								
10RI.1.1: [2]	11:(4)[2]	18:(7)[2]	22:(4)[2]	32:(5)[2]	34:(7)[2]	35:(6)[2]	37:(1)[2]	40:(7)[2]	
10RI.1.2: [3]	7:(1)[3]	10:(7)[2]	11:(2)[2]	13:(1)[2]	14:(1)[2]	22:(2)[2]	32:(1)[2]	37:(1)[2]	
10RI.1.3: [3]	8:(1)[2]	9:(1)[2]	11:(1)[2]	33:(5)[2]					
10RI.1.4: [3]	7:(1)[3]	12:(7)[2]	19:(7)[2]	38:(7)[2]					
10RI.1.5: [3]	7:(4)[3]	8:(6)[2]	9:(5)[2]	13:(6)[2]	22:(1)[2]	32:(1)[2]	33:(3)[2]	37:(5)[2]	39:(1)[3]
10RI.1.6: [3]	7:(1)[3]	21:(7)[2]	36:(7)[2]	39:(6)[3]					
10RI.1.7									
10RI.1.8: [3]	9:(1)[2]								
10RI.1.9: [3]	14:(6)[2]								
10RI.1.10									
10RI.2.0									
10RI.2.1									
10RI.2.2									
10RI.2.3									
10RI.2.4									
10RI.2.5									
10RI.2.6									
10WL.0.0									
10WL.1.0									
10WL.1.1: [3]	44:(48)[3]								
10WL.1.2: [3]	17:(1)[2]	44:(8)[1]							
10WL.1.3									
10WL.1.4: [3]	44:(24)[2]								
10WL.1.5									
10WL.1.6									
10WL.1.7									
10WL.1.8: [3]	44:(24)[2]								
10WL.1.9									
10WL.1.10									
10WL.2.0									
10WL.2.1: [2]	16:(3)[1]	17:(6)[1]	42:(6)[1]						

10WL.2.2: [1]	15:(7)[1]	16:(4)[1]	41:(7)[1]	42:(1)[1]	43:(14)[1]				
10WL.2.3									
10WL.2.4									
10WL.2.5									
10WL.2.6									

Table 10.1b

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 10 Online*  
*Number of Assessment Items - 44*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
10RL.0.0 Reading Standards for...	1	9	2 3	2 7	22.22 77.78	15.14	0.38	YES
10RI.0.0 Reading, Speaking, an...	2	17	2 3	3 13	18.75 81.25	23	0	YES
10WL.0.0 Writing and Language...	2	16	1 2 3 4	1 6 8 1	6.25 37.5 50 6.25	21.71	8.69	YES
Total	5	42	1 2 3 4	1 11 28 1	2 27 68 2	59.85	8.55	

Table 10.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 10 Online*  
*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
10RL.0.0 Reading Standards for...	1	9	15.14	0.38	71.79	13	24.4	11	3.81	7	NO
10RI.0.0 Reading, Speaking, an...	2	17	23	0	74.53	11	25.47	11	0	0	NO
10WL.0.0 Writing and Language...	2	16	21.71	8.69	10.98	8	89.02	8	0	0	YES
Total	5	42	59.85	8.55	50.36	7.7	48.69	6.5	0.95	1.4	
NT = Not Tested											

Table 10.3b

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 10 Online

Number of Assessment Items - 44

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
10RL.0.0 Reading Standards for...	1	9	15.14	0.38	5.86	0.38	65.08	4.2	YES	32	1	0.72	0.07	YES
10RI.0.0 Reading, Speaking, an...	2	17	23	0	10.29	0.76	60.5	4.45	YES	51	1	0.73	0.03	YES
10WL.0.0 Writing and Language...	2	16	21.71	8.69	3.86	1.07	24.11	6.68	NO	17	2	0.73	0.06	YES
Total	5	42	59.85	8.55	6.7	3.29	49.9	22		33	17	0.73	0	

Table 10.4b

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers

AzMERIT 2017 ELA Grade 10 Online

Number of Assessment Items - 44

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
10RL.0.0 Reading Standards for...	YES	NO	YES	YES
10RI.0.0 Reading, Speaking, an...	YES	NO	YES	YES
10WL.0.0 Writing and Language...	YES	YES	NO	YES

Table 10.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 10 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	3	2	2	2	2	2
6	2	2	2	2	2	2	2
7	2	2	2	2	3	2	2
8	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	2	2	2	2	3	2	2
12	2	3	2	2	2	2	2
13	2	3	2	2	3	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	3	3	2	3	3	3	3
17	2	2	2	2	2	2	2
18	2	2	2	2	2	3	2
19	2	2	2	2	3	2	2
20	2	2	2	2	2	2	2
21	2	2	2	2	2	2	2
22	2	2	2	2	2	2	2
23	2	2	2	2	2	2	2
24	2	2	2	2	2	2	2
25	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1
28	2	2	2	2	2	2	2
29	2	2	2	2	2	2	2
30	2	2	2	2	2	2	2
31	2	2	2	2	2	1	2
32	3	3	2	2	2	2	2
33	2	2	2	2	2	2	2
34	2	2	2	2	2	2	2
35	2	2	2	2	2	2	2
36	2	2	2	2	2	2	2
37	2	2	2	2	3	2	2
38	2	2	2	2	2	2	2
39	2	2	2	2	2	2	2
40	2	2	2	2	3	2	3
41	2	2	2	2	2	2	2
42	2	1	1	1	1	1	1
43	1	1	1	1	1	2	1
44	1	1	1	1	1	1	1

*Intraclass correlation - .9649*

*Pairwise Comparison - 0.9*

Table 10.6b

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 ELA Grade 10 Online*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	3	10WL.1.2			3	10WL.1.2			3	10WL.1.2			3	10WL.1.2	10WL.1.4	10WL.1.8	3	10WL.1.2	10WL.1.4	10WL.1.8	3	10WL.1.2			3	10WL.1.2	10WL.1.4	10WL.1.8
2	2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4		
3	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5		
4	2	10RI.1.1			2	10RI.1.1			2	10RI.1.1			2	10RI.1.2			2	10RI.1.1			2	10RI.1.1			2	10RI.1.5		
5	2	10RI.1.6			3	10RI.1.2			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6			2	10RI.1.6		
6	2	10RI.1.3			2	10RI.1.3			2	10RI.1.3			2	10RI.1.3			2	10RI.1.3			2	10RI.1.3			2	10RI.1.3		
7	2	10RL.1.4			2	10RL.1.4			2	10RL.1.4			2	10RL.1.4			3	10RL.1.4			2	10RL.1.4			2	10RL.1.4		
8	2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1		
9	2	10RL.1.1			2	10RL.1.1			2	10RL.1.2			2	10RL.1.3			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1		
10	2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.3			2	10RL.1.1			2	10RL.1.1			2	10RL.1.1		
11	2	10RL.1.3			2	10RL.1.3			2	10RL.1.3			2	10RL.1.3			3	10RL.1.3			2	10RL.1.3			2	10RL.1.3		
12	2	10RL.1.2			3	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2			2	10RL.1.2		
13	2	10RI.1.6			3	10RI.1.6			2	10RI.2.3			2	10RI.2.3			3	10RI.1.6			2	10RI.1.6			2	10RI.2.3		
14	2	10RI.2.3			2	10RI.2.3			2	10RI.2.3			2	10RI.2.3			2	10RI.2.3			2	10RI.2.3			2	10RI.2.3		
15	2	10RI.1.7			2	10RI.1.7			2	10RI.1.7			2	10RI.1.7			2	10RI.1.7			2	10RI.1.7			2	10RI.1.7		
16	3	10RI.1.5			3	10RI.1.5			2	10RI.1.2			3	10RI.1.5			3	10RI.1.6			3	10RI.1.4			3	10RI.1.5		
17	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5		
18	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.8			2	10RI.1.3			3	10RI.1.5			2	10RI.1.5		
19	2	10RI.1.2			2	10RI.1.2			2	10RI.1.2			2	10RI.1.2			3	10RI.1.2			2	10RI.1.2			2	10RI.1.2		
20	2	10RI.1.3			2	10RI.1.1			2	10RI.1.2			2	10RI.1.2			2	10RI.1.1			2	10RI.1.1			2	10RI.1.1		
21	2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4			2	10RI.1.4		
22	2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.5			2	10RI.1.4			2	10RI.1.5		
23	2	10RI.1.1			2	10RI.1.9			2	10RI.1.9			2	10RI.2.2			2	10RI.1.9			2	10RI.1.7			2	10RI.1.1		
24	2	10RI.1.9			2	10RI.1.9			2	10RI.1.9			2	10RI.1.9			2	10RI.1.9			2	10RI.1.9			2	10RI.1.9		
25	1	10WL.2.			1	10WL.2.			1	10WL.2.			1	10WL.2.			1	10WL.2.			1	10WL.2.			1	10WL.2.		

		2			2			2			2			2			2			2				
26	1	10WL.2.1		1	10WL.2.1		1	10WL.2.2		1	10WL.2.2			1	10WL.2.2			1	10WL.2.2		1	10WL.2.1		
27	1	10WL.2.1		1	10WL.2.1		1	10WL.2.1		1	10WL.2.1			1	10WL.2.1			1	10WL.2.2		1	10WL.2.1		
28	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.1			2	10RI.1.1			2	10RI.1.1		2	10RI.1.1		
29	2	10RI.1.1		2	10RI.1.1		2	10RI.1.1		2	10RI.1.5			2	10RI.1.1			2	10RI.1.1		2	10RI.1.1		
30	2	10RI.1.4		2	10RI.1.4		2	10RI.1.4		2	10RI.1.4			2	10RI.1.4			2	10RI.1.4		2	10RI.1.4		
31	2	10RI.1.0		2	10RI.1.0		2	10RI.1.0		2	10RI.1.0			2	10RI.1.0			1	10RI.1.0		2	10RI.0.0		
32	3	10RI.1.6		3	10RI.1.6		2	10RI.1.6		2	10RI.1.6			2	10RI.1.6			2	10RI.1.6		2	10RI.1.6		
33	2	10RI.1.1		2	10RI.1.1		2	10RI.1.2		2	10RI.1.2			2	10RI.1.5			2	10RI.1.1		2	10RI.1.1		
34	2	10RL.1.4		2	10RL.1.4		2	10RL.1.4		2	10RL.1.4			2	10RL.1.4			2	10RL.1.4		2	10RL.1.4		
35	2	10RL.1.3		2	10RL.1.3		2	10RL.1.3		2	10RL.1.3			2	10RL.1.3			2	10RL.1.3		2	10RL.1.3		
36	2	10RL.1.3		2	10RL.1.3		2	10RL.1.3		2	10RL.1.3			2	10RL.1.3			2	10RL.1.3		2	10RL.1.3		
37	2	10RL.1.3		2	10RL.1.3		2	10RL.1.1		2	10RL.1.3			3	10RL.1.3			2	10RL.1.5		2	10RL.1.3		
38	2	10RL.1.4		2	10RL.1.5		2	10RL.1.5		2	10RL.1.5			2	10RL.1.5			2	10RL.1.5		2	10RL.1.5		
39	2	10RL.1.1		2	10RL.1.2		2	10RL.1.2		2	10RL.1.2			2	10RL.1.2			2	10RL.1.2		2	10RL.1.2		
40	2	10RL.1.1		2	10RL.1.3		2	10RL.1.1		2	10RL.1.3			3	10RL.1.1			2	10RL.1.1		3	10RL.1.1		
41	2	10RL.1.8		2	10RL.1.8		2	10RL.1.8		2	10RL.1.8			2	10RL.1.8			2	10RL.1.8		2	10RL.1.8		
42	2	10RL.1.8		1	10WL.2.1		1	10WL.2.2		1	10WL.2.2			1	10WL.2.2			1	10WL.2.2		1	10WL.2.2		
43	1	10WL.2.2		1	10WL.2.1		1	10WL.2.1		1	10WL.2.1			1	10WL.2.1			2	10WL.2.1		1	10WL.2.1		
44	1	10WL.2.2		1	10WL.2.2		1	10WL.2.2		1	10WL.2.2			1	10WL.2.2			1	10WL.2.2		1	10WL.2.2		
Objective Pairwise Comparison: 0.75																								
Standard Pairwise Comparison: 0.99																								

Table 10.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 10 Online*

Low		Medium		High			
0		33.6		56			
10RL.0.0							
10RL.1.0							
10RL.1.1	8(5)	10(5)	9(4)	37(1)	40(10)	39(1)	
10RL.1.2	39(6)	9(1)	12(7)				
10RL.1.3	9(2)	10(2)	11(7)	8(2)	40(4)	37(5)	35(7)
10RL.1.4	38(1)	34(7)	7(7)				
10RL.1.5	38(6)	37(1)					
10RL.1.6							
10RL.1.7							
10RL.1.8	41(7)	42(1)					
10RL.1.9							
10RI.0.0	31(1)						
10RI.1.0	31(6)						
10RI.1.1	33(4)	4(5)	20(4)	23(2)	28(7)	29(6)	
10RI.1.2	20(2)	16(1)	19(7)	4(1)	5(1)	33(2)	
10RI.1.3	6(7)	18(1)	20(1)				
10RI.1.4	21(7)	22(1)	16(1)	30(7)	2(7)		
10RI.1.5	3(7)	4(1)	29(1)	16(4)	17(7)	18(5)	22(6)
10RI.1.6	32(7)	16(1)	5(6)	13(4)			
10RI.1.7	15(7)	23(1)					
10RI.1.8	18(1)						
10RI.1.9	23(3)	24(7)					
10RI.1.10							
10RI.2.0							
10RI.2.1							



10RI.2.2	23(1)							
10RI.2.3	13(3)	14(7)						
10RI.2.4								
10RI.2.5								
10RI.2.6								
10WL.0.0								
10WL.1.0								
10WL.1.1								
10WL.1.2	1(56)							
10WL.1.3								
10WL.1.4	1(24)							
10WL.1.5								
10WL.1.6								
10WL.1.7								
10WL.1.8	1(24)							
10WL.1.9								
10WL.1.10								
10WL.2.0								
10WL.2.1	26(3)	27(6)	42(1)	43(6)				
10WL.2.2	43(1)	44(14)	42(5)	27(1)	26(4)	25(7)		
10WL.2.3								
10WL.2.4								
10WL.2.5								
10WL.2.6								

Table 10.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 10 Online*

	Low	Medium	High
	11.2	33.6	56
1 13639	10WL.1.2:56	10WL.1.4:24	10WL.1.8:24
2 12507	10RI.1.4:7		
3 12908	10RI.1.5:7		
4 12530	10RI.1.1:5	10RI.1.2:1	10RI.1.5:1
5 12534	10RI.1.2:1	10RI.1.6:6	
6 12504	10RI.1.3:7		
7 8812	10RL.1.4:7		
8 8813	10RL.1.1:5	10RL.1.3:2	
9 8810	10RL.1.1:4	10RL.1.2:1	10RL.1.3:2
10 10155	10RL.1.1:5	10RL.1.3:2	
11 8852	10RL.1.3:7		
12 8811	10RL.1.2:7		
13 12003	10RI.1.6:4	10RI.2.3:3	
14 12506	10RI.2.3:7		
15 12443	10RI.1.7:7		
16 9822	10RI.1.2:1	10RI.1.4:1	10RI.1.5:4
17 9813	10RI.1.5:7		
18 9824	10RI.1.3:1	10RI.1.5:5	10RI.1.8:1
19 9816	10RI.1.2:7		
20 9814	10RI.1.1:4	10RI.1.2:2	10RI.1.3:1
21 9826	10RI.1.4:7		
22 9821	10RI.1.4:1	10RI.1.5:6	
23 9888	10RI.1.1:2	10RI.1.7:1	10RI.1.9:3
24 9825	10RI.1.9:7		
25 8757	10WL.2.2:7		
26 8758	10WL.2.1:3	10WL.2.2:4	
27 8763	10WL.2.1:6	10WL.2.2:1	
28 13586	10RI.1.1:7		
29 13590	10RI.1.1:6	10RI.1.5:1	
30 13588	10RI.1.4:7		
31 13592	10RI.0.0:1	10RI.1.0:6	
32 13594	10RI.1.6:7		

33 13593	10RI.1.1:4	10RI.1.2:2	10RI.1.5:1
34 12446	10RL.1.4:7		
35 12863	10RL.1.3:7		
36 12478	10RL.1.3:7		
37 12482	10RL.1.1:1	10RL.1.3:5	10RL.1.5:1
38 12449	10RL.1.4:1	10RL.1.5:6	
39 12477	10RL.1.1:1	10RL.1.2:6	
40 12480	10RL.1.1:10	10RL.1.3:4	
41 12473	10RL.1.8:7		
42 13571	10RL.1.8:1	10WL.2.1:1	10WL.2.2:5
43 13572	10WL.2.1:6	10WL.2.2:1	
44 13573	10WL.2.2:14		

Table 10.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 10 Online*

Low DOK		Matched DOK		High DOK

10RL0.0								
10RL1.0								
10RL1.1: [2]	8:(5)[2]	9:(4)[2]	10:(5)[2]	37:(1)[2]	39:(1)[2]	40:(10)[2]		
10RL1.2: [3]	9:(1)[2]	12:(7)[2]	39:(6)[2]					
10RL1.3: [3]	8:(2)[2]	9:(2)[2]	10:(2)[2]	11:(7)[2]	35:(7)[2]	36:(7)[2]	37:(5)[2]	40:(4)[2]
10RL1.4: [3]	7:(7)[2]	34:(7)[2]	38:(1)[2]					
10RL1.5: [3]	37:(1)[2]	38:(6)[2]						
10RL1.6								
10RL1.7								
10RL1.8: [3]	41:(7)[2]	42:(1)[2]						
10RL1.9								
10RL0.0: [3]	31:(1)[2]							
10RL1.0: [3]	31:(6)[2]							
10RL1.1: [2]	4:(5)[2]	20:(4)[2]	23:(2)[2]	28:(7)[2]	29:(6)[2]	33:(4)[2]		
10RL1.2: [3]	4:(1)[2]	5:(1)[3]	16:(1)[2]	19:(7)[2]	20:(2)[2]	33:(2)[2]		
10RL1.3: [3]	6:(7)[2]	18:(1)[2]	20:(1)[2]					
10RL1.4: [3]	2:(7)[2]	16:(1)[3]	21:(7)[2]	22:(1)[2]	30:(7)[2]			
10RL1.5: [3]	3:(7)[2]	4:(1)[2]	16:(4)[3]	17:(7)[2]	18:(5)[2]	22:(6)[2]	29:(1)[2]	33:(1)[2]
10RL1.6: [3]	5:(6)[2]	13:(4)[2]	16:(1)[3]	32:(7)[2]				
10RL1.7: [3]	15:(7)[2]	23:(1)[2]						
10RL1.8: [3]	18:(1)[2]							
10RL1.9: [3]	23:(3)[2]	24:(7)[2]						
10RL1.10								
10RL2.0								
10RL2.1								
10RL2.2: [3]	23:(1)[2]							
10RL2.3: [3]	13:(3)[2]	14:(7)[2]						
10RL2.4								
10RL2.5								

10RI.2.6								
10WL.0.0								
10WL.1.0								
10WL.1.1								
10WL.1.2: [3]	1:(56)[3]							
10WL.1.3								
10WL.1.4: [3]	1:(24)[3]							
10WL.1.5								
10WL.1.6								
10WL.1.7								
10WL.1.8: [3]	1:(24)[3]							
10WL.1.9								
10WL.1.10								
10WL.2.0								
10WL.2.1: [2]	26:(3)[1]	27:(6)[1]	42:(1)[1]	43:(6)[1]				
10WL.2.2: [1]	25:(7)[1]	26:(4)[1]	27:(1)[1]	42:(5)[1]	43:(1)[1]	44:(14)[1]		
10WL.2.3								
10WL.2.4								
10WL.2.5								
10WL.2.6								

## ELA Grade 11

Table 11.1a

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Paper*

*Number of Assessment Items - 44*

Reporting Category			Level by Standards			Objective Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
11RL.0.0 Reading Standards for...	1	9	2 3	1 8	11.11 88.89	16.14	0.38	YES
11RI.0.0 Reading, Speaking, an...	2	16.86	2 3	3 13	18.75 81.25	21.14	0.38	YES
11WL.0.0 Writing and Language...	2	16	1 2 3 4	1 5 9 1	6.25 31.25 56.25 6.25	25.57	4.43	YES
Total	5	41.86	1 2 3 4	1 9 30 1	2 22 73 2	62.85	4.91	

Table 11.2a

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Paper*

*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
11RL.0.0 Reading Standards for...	1	9	16.14	0.38	69.8	9	30.2	9	0	0	NO
11RI.0.0 Reading, Speaking, an...	2	16.86	21.14	0.38	73.04	8	25.6	7	1.36	2	NO
11WL.0.0 Writing and Language...	2	16	25.57	4.43	17.92	4	82.08	4	0	0	YES
Total	5	41.86	62.85	4.91	49.77	5.3	49.77	5.2	0.45	0.8	

*Table 11.3a*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Paper*

*Number of Assessment Items - 44*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% ofTotal							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
11RL.0.0 Reading Standards for...	1	9	16.14	0.38	5.43	0.53	60.32	5.94	YES	35	1	0.82	0.05	YES
11RI.0.0 Reading, Speaking, an...	2	16.86	21.14	0.38	8.43	0.53	50	2.94	YES	46	1	0.74	0.04	YES
11WL.0.0 Writing and Language...	2	16	25.57	4.43	4.43	0.79	27.68	4.92	NO	19	2	0.78	0.05	YES
Total	5	41.86	62.85	4.91	6.1	2.08	46	17		33	14	0.78	0.04	

*Table 11.4a*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Paper*

*Number of Assessment Items - 44*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
11RL.0.0 Reading Standards for...	YES	NO	YES	YES
11RI.0.0 Reading, Speaking, an...	YES	NO	YES	YES
11WL.0.0 Writing and Language...	YES	YES	NO	YES

*Levels by Item and Reviewers Intraclass Correlation*

*AzMERIT 2017 ELA Grade Table 11.5a Depth-of-Knowledge 11 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	1	2	2	2	2	2	2
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	2	2	2	2	2	2	2
7	2	2	2	2	3	2	2
8	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	3	3	2	2	2	3	2
12	3	3	3	3	3	3	3
13	3	2	2	2	2	3	2
14	3	3	2	2	3	2	2
15	2	2	3	2	2	2	2
16	3	3	3	3	2	3	3
17	2	2	2	2	3	2	2
18	3	2	2	2	3	3	2
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	2	2	2	2	2	2	2
23	2	3	2	2	3	2	2
24	3	3	2	3	3	3	2
25	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	3	2	2	3	2	2
29	3	3	3	3	3	3	3
30	2	2	2	2	2	2	2
31	2	2	2	2	2	2	2
32	2	2	2	2	2	2	2
33	3	2	2	2	3	2	2
34	3	3	3	3	3	3	3
35	2	2	2	2	2	2	2
36	3	3	3	3	3	3	3
37	2	2	2	2	2	2	2
38	2	3	3	3	3	3	3
39	2	2	2	2	2	2	2
40	2	2	2	2	2	2	2
41	1	1	1	1	1	1	1
42	1	1	1	1	1	2	1
43	1	1	1	1	1	2	1
44	3	3	3	3	3	3	3

*Intraclass correlation - .9715*

*Pairwise Comparison - 0.85*



Table 11.6a  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 11 Paper*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	1	11RI.1.0			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4		
2	2	11RI.1.1			2	11RI.1.2			2	11RI.1.1			2	11RI.1.1			2	11RI.1.2			2	11RI.1.2		
3	2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4		
4	2	11RI.1.1			2	11RI.1.1			2	11RI.1.6			2	11RI.1.1			2	11RI.1.1			2	11RI.1.2		
5	2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6		
6	2	11RI.1.1			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2		
7	2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			3	11RI.1.4			2	11RI.1.4			2	11RI.1.4		
8	2	11RI.1.1			2	11RI.1.1			2	11RI.1.1			2	11RI.1.1			2	11RI.1.1			2	11RI.1.1		
9	2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6		
10	2	11RI.1.2			2	11RI.1.3			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2		
11	3	11RI.1.8			3	11RI.1.4			2	11RI.1.4			2	11RI.1.9			3	11RI.1.6			2	11RI.1.4		
12	3	11RI.1.3			3	11RI.1.6			3	11RI.1.9			3	11RI.1.6			3	11RI.1.3			3	11RI.1.6		
13	3	11RI.1.0			2	11RI.1.0			2	11RI.1.0			2	11RI.1.1			3	11RI.1.0			2	11RI.1.0		
14	3	11RI.1.2			3	11RI.1.2			2	11RI.1.2			3	11RI.1.2			2	11RI.1.2			2	11RI.1.2		
15	2	11RI.1.5			2	11RI.1.3			3	11RI.1.3			2	11RI.1.3			2	11RI.1.5			2	11RI.1.3		
16	3	11RI.1.5			3	11RI.1.4			3	11RI.1.4			2	11RI.1.4			3	11RI.1.4			3	11RI.1.4		
17	2	11RI.1.1			2	11RI.1.1			2	11RI.1.8			3	11RI.1.1			2	11RI.1.1			2	11RI.1.1		
18	3	11RI.1.1			2	11RI.1.1			2	11RI.1.1			3	11RI.1.1			3	11RI.1.1			2	11RI.1.1		

		2			2			8			8			2			8			2		
19	1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.2		
20	1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		1	11WL.2.1		
21	1	11WL.2.2		1	11WL.2.2		1	11WL.2.2		1	11WL.2.2		1	11WL.2.2		1	11WL.2.1		1	11WL.2.2		
22	2	11RL.1.1		2	11RL.1.2		2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		2	11RL.1.3		2	11RL.1.1		
23	2	11RL.1.1		3	11RL.1.4		2	11RL.1.4		2	11RL.1.3		3	11RL.1.4		2	11RL.1.1		2	11RL.1.4		
24	3	11RL.1.4		3	11RL.1.3		2	11RL.1.5		3	11RL.1.3		3	11RL.1.5		3	11RL.1.4		2	11RL.1.4		
25	2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		2	11RL.1.1		
26	2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		
27	2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		
28	2	11RL.1.1		3	11RL.1.1		2	11RL.1.1		2	11RL.1.1		3	11RL.1.1		2	11RL.1.1		2	11RL.1.1		
29	3	11RL.1.6		3	11RL.1.6		3	11RL.1.6		3	11RL.1.6		3	11RL.1.6		3	11RL.1.6		3	11RL.1.6		
30	2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		
31	2	11RL.1.1		2	11RL.1.6		2	11RL.1.6		2	11RL.1.6		2	11RL.1.6		2	11RL.1.1		2	11RL.1.0	11RL.1.6	
32	2	11RL.1.5		2	11RL.1.5		2	11RL.1.5		2	11RL.1.5		2	11RL.1.5		2	11RL.1.5		2	11RL.1.5		
33	3	11RL.1.5		2	11RL.1.5		2	11RL.1.8		2	11RL.1.8		3	11RL.1.5		2	11RL.1.9		2	11RL.1.5		
34	3	11RL.1.8		3	11RL.1.8		3	11RL.1.8		3	11RL.1.8		3	11RL.1.8	11RL.1.9	3	11RL.1.8		3	11RL.1.8		
35	2	11RL.1.4		2	11RL.1.3		2	11RL.1.1		2	11RL.1.3		2	11RL.1.3		2	11RL.1.3		2	11RL.1.4		
36	3	11RL.1.5		3	11RL.1.6		3	11RL.1.3		3	11RL.1.5		3	11RL.1.5		3	11RL.1.5		3	11RL.1.3		
37	2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		2	11RL.1.2		
38	2	11RL.1.3		3	11RL.1.3		3	11RL.1.4		3	11RL.1.5		3	11RL.1.3		3	11RL.1.3		3	11RL.1.2		
39	2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		2	11RL.1.4		

40	2	11RL.1. 2		2	11RL.1. 2		2	11RL.1. 2		2	11RL.1. 2		2	11RL.1. 2		2	11RL.1. 2		2	11RL.1. 2			
41	1	11WL. 2.2		1	11WL. 2.2		1	11WL.2 .2		1	11WL.2 .2		1	11WL.2 .2		1	11WL.2 .2		1	11WL.2 .2			
42	1	11WL. 2.2		1	11WL. 2.1		1	11WL.2 .1		1	11WL.2 .1		1	11WL.2 .3	11WL.2 .1	2	11WL.2 .1		1	11WL.2 .1			
43	1	11WL. 2.2		1	11WL. 2.2		1	11WL.2 .1		1	11WL.2 .1		1	11WL.2 .3	11WL.2 .1	2	11WL.2 .1		1	11WL.2 .1			
44	3	11WL. 1.2	11WL. 1.8	3	11WL. 1.2	11WL. 1.8	3	11WL.1 .2	11WL.1 .8	3	11WL.1 .2	11WL.1 .8	3	11WL.1 .2	11WL.1 .8	11WL.1 .4	3	11WL.1 .2	11WL.1 .8	3	11WL.1 .2	11WL.1 .4	11WL.1 .8
Objective Pairwise Comparison: 0.69																							
Standard Pairwise Comparison: 0.99																							

Table 11.7a

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 11 Paper*

Low		Medium		High			
0		33.6				56	
11RL.0.0							
11RL.1.0							
11RL.1.1	17(6)	22(5)	23(2)	25(7)	35(1)		
11RL.1.2	37(7)	38(1)	40(7)	26(7)	22(1)	18(4)	14(7)
11RL.1.3	15(4)	22(1)	23(1)	24(2)	38(4)	36(2)	35(4)
11RL.1.4	35(2)	39(7)	38(1)	24(3)	23(4)	16(6)	
11RL.1.5	16(1)	15(3)	24(2)	38(1)	36(4)		
11RL.1.6	36(1)	9(1)					
11RL.1.7							
11RL.1.8	17(1)	18(3)					
11RL.1.9							
11RI.0.0							
11RI.1.0	31(1)	13(6)	1(1)				
11RI.1.1	8(7)	6(2)	2(3)	4(5)	13(1)	31(2)	28(7)
11RI.1.2	10(6)	4(1)	2(4)	6(5)			
11RI.1.3	10(1)	12(2)	30(7)				
11RI.1.4	27(7)	11(4)	7(7)	1(6)	3(7)		
11RI.1.5	32(7)	33(4)					
11RI.1.6	4(1)	5(7)	11(1)	12(4)	9(6)	29(7)	31(5)
11RI.1.7							
11RI.1.8	11(1)	33(2)	34(7)				
11RI.1.9	33(1)	11(1)	12(1)	34(1)			
11RI.1.10							
11RI.2.0							
11RI.2.1							

11RI.2.2							
11RI.2.3							
11RI.2.4							
11RI.2.5							
11RI.2.6							
11WL.0.0							
11WL.1.0							
11WL.1.1							
11WL.1.2	44(56)						
11WL.1.3							
11WL.1.4	44(16)						
11WL.1.5							
11WL.1.6							
11WL.1.7							
11WL.1.8	44(56)						
11WL.1.9							
11WL.1.10							
11WL.2.0							
11WL.2.1	19(6)	20(14)	21(1)	42(6)	43(5)		
11WL.2.2	21(6)	19(1)	43(2)	42(1)	41(7)		
11WL.2.3	42(1)	43(1)					
11WL.2.4							
11WL.2.5							
11WL.2.6							

Table 11.8a

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 11 Paper*

Low		Medium		High	
11.2		33.6		56	
1 9855	11RI.1.0:1	11RI.1.4:6			
2 9853	11RI.1.1:3	11RI.1.2:4			
3 9862	11RI.1.4:7				
4 9851	11RI.1.1:5	11RI.1.2:1	11RI.1.6:1		
5 9858	11RI.1.6:7				
6 9852	11RI.1.1:2	11RI.1.2:5			
7 8858	11RI.1.4:7				
8 8859	11RI.1.1:7				
9 8864	11RL.1.6:1	11RI.1.6:6			
10 8861	11RI.1.2:6	11RI.1.3:1			
11 8867	11RI.1.4:4	11RI.1.6:1	11RI.1.8:1	11RI.1.9:1	
12 8869	11RI.1.3:2	11RI.1.6:4	11RI.1.9:1		
13 8871	11RI.1.0:6	11RI.1.1:1			
14 8806	11RL.1.2:7				
15 8807	11RL.1.3:4	11RL.1.5:3			
16 8808	11RL.1.4:6	11RL.1.5:1			
17 8809	11RL.1.1:6	11RL.1.8:1			
18 8846	11RL.1.2:4	11RL.1.8:3			
19 8778	11WL.2.1:6	11WL.2.2:1			
20 8779	11WL.2.1:14				
21 8780	11WL.2.1:1	11WL.2.2:6			
22 8794	11RL.1.1:5	11RL.1.2:1	11RL.1.3:1		
23 8792	11RL.1.1:2	11RL.1.3:1	11RL.1.4:4		
24 8784	11RL.1.3:2	11RL.1.4:3	11RL.1.5:2		
25 8781	11RL.1.1:7				
26 8791	11RL.1.2:7				
27 12821	11RI.1.4:7				
28 12814	11RI.1.1:7				
29 12823	11RI.1.6:7				
30 12825	11RI.1.3:7				
31 12819	11RI.1.0:1	11RI.1.1:2	11RI.1.6:5		
32 12844	11RI.1.5:7				

33 12842	11RI.1.5:4	11RI.1.8:2	11RI.1.9:1	
34 12845	11RI.1.8:7	11RI.1.9:1		
35 11926	11RL.1.1:1	11RL.1.3:4	11RL.1.4:2	
36 11922	11RL.1.3:2	11RL.1.5:4	11RL.1.6:1	
37 11917	11RL.1.2:7			
38 11931	11RL.1.2:1	11RL.1.3:4	11RL.1.4:1	11RL.1.5:1
39 11932	11RL.1.4:7			
40 11929	11RL.1.2:7			
41 13644	11WL.2.2:7			
42 13646	11WL.2.1:6	11WL.2.2:1	11WL.2.3:1	
43 13647	11WL.2.1:5	11WL.2.2:2	11WL.2.3:1	
44 13724(1a)	11WL.1.2:56	11WL.1.4:16	11WL.1.8:56	

Table 11.9a

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 11 Paper*

Low DOK		Matched DOK		High DOK

11RL.0.0							
11RL.1.0							
11RL.1.1: [3]	17:(6)[2]	22:(5)[2]	23:(2)[2]	25:(7)[2]	35:(1)[2]		
11RL.1.2: [3]	14:(7)[2]	18:(4)[2]	22:(1)[2]	26:(7)[2]	37:(7)[2]	38:(1)[3]	40:(7)[2]
11RL.1.3: [3]	15:(4)[2]	22:(1)[2]	23:(1)[2]	24:(2)[3]	35:(4)[2]	36:(2)[3]	38:(4)[3]
11RL.1.4: [3]	16:(6)[3]	23:(4)[2]	24:(3)[3]	35:(2)[2]	38:(1)[3]	39:(7)[2]	
11RL.1.5: [3]	15:(3)[2]	16:(1)[3]	24:(2)[2]	36:(4)[3]	38:(1)[3]		
11RL.1.6: [3]	9:(1)[2]	36:(1)[3]					
11RL.1.7							
11RL.1.8: [3]	17:(1)[2]	18:(3)[2]					
11RL.1.9							
11RI.0.0							
11RI.1.0: [3]	1:(1)[1]	13:(6)[2]	31:(1)[2]				
11RI.1.1: [3]	2:(3)[2]	4:(5)[2]	6:(2)[2]	8:(7)[2]	13:(1)[2]	28:(7)[2]	31:(2)[2]
11RI.1.2: [3]	2:(4)[2]	4:(1)[2]	6:(5)[2]	10:(6)[2]			
11RI.1.3: [2]	10:(1)[2]	12:(2)[3]	30:(7)[2]				
11RI.1.4: [3]	1:(6)[2]	3:(7)[2]	7:(7)[2]	11:(4)[2]	27:(7)[2]		
11RI.1.5: [3]	32:(7)[2]	33:(4)[2]					
11RI.1.6: [3]	4:(1)[2]	5:(7)[2]	9:(6)[2]	11:(1)[3]	12:(4)[3]	29:(7)[3]	31:(5)[2]
11RI.1.7							
11RI.1.8: [3]	11:(1)[3]	33:(2)[2]	34:(7)[3]				
11RI.1.9: [3]	11:(1)[2]	12:(1)[3]	33:(1)[2]	34:(1)[3]			
11RI.1.10							
11RI.2.0							
11RI.2.1							
11RI.2.2							
11RI.2.3							
11RI.2.4							
11RI.2.5							



11RI.2.6							
11WL.0.0							
11WL.1.0							
11WL.1.1							
11WL.1.2: [3]	44:(56)[3]						
11WL.1.3							
11WL.1.4: [3]	44:(16)[3]						
11WL.1.5							
11WL.1.6							
11WL.1.7							
11WL.1.8: [3]	44:(56)[3]						
11WL.1.9							
11WL.1.10							
11WL.2.0							
11WL.2.1: [2]	19:(6)[1]	20:(14)[1]	21:(1)[1]	42:(6)[1]	43:(5)[1]		
11WL.2.2: [1]	19:(1)[1]	21:(6)[1]	41:(7)[1]	42:(1)[1]	43:(2)[1]		
11WL.2.3: [2]	42:(1)[1]	43:(1)[1]					
11WL.2.4							
11WL.2.5							
11WL.2.6							

Table 11.1b

*Categorical Concurrence between Standards and Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 11 Online*  
*Number of Assessment Items - 44*

Reporting Category			Level by Standard			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
11RL.0.0 Reading Standards for...	1	9.14	2 3	1 8	11.11 88.89	14.43	1.13	YES
11RI.0.0 Reading, Speaking, an...	2	16.71	2 3	3 13	18.75 81.25	22.71	1.25	YES
11WL.0.0 Writing and Language...	2	16	1 2 3 4	1 5 9 1	6.25 31.25 56.25 6.25	23.29	5.22	YES
Total	5	41.85	1 2 3 4	1 9 30 1	2 22 73 2	60.43	5.53	

Table 11.2b

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Eight Reviewers*  
*AzMERIT 2017 ELA Grade 11 Online*  
*Number of Assessment Items - 44*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	%Under	SD	%At	SD	%Above	SD	
11RL.0.0 Reading Standards for...	1	9.14	14.43	1.13	73.17	10	26.83	10	0	0	NO
11RI.0.0 Reading, Speaking, an...	2	16.71	22.71	1.25	61.46	9	37.2	8	1.34	2	NO
11WL.0.0 Writing and Language...	2	16	23.29	5.22	19.88	4	80.12	4	0	0	YES
Total	5	41.85	60.43	5.53	48.23	5.6	51.3	5.4	0.47	0.9	

*Table 11.3b*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Online*

*Number of Assessment Items - 44*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
11RL.0.0 Reading Standards for...	1	9.14	14.43	1.13	5.29	0.49	57.78	4.26	YES	32	3	0.84	0.08	YES
11RI.0.0 Reading, Speaking, an...	2	16.71	22.71	1.25	10.71	0.76	64.08	3.56	YES	50	3	0.79	0.02	YES
11WL.0.0 Writing and Language...	2	16	23.29	5.22	4.14	0.9	25.89	5.62	NO	18	2	0.79	0.03	YES
Total	5	41.85	60.43	5.53	6.7	3.51	49.25	20		33	16	0.81	0.03	

*Table 11.4b*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Eight Reviewers*

*AzMERIT 2017 ELA Grade 11 Online*

*Number of Assessment Items - 44*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
11RL.0.0 Reading Standards for...	YES	NO	YES	YES
11RI.0.0 Reading, Speaking, an...	YES	NO	YES	YES
11WL.0.0 Writing and Language...	YES	YES	NO	YES

Table 11.5b *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 ELA Grade 11 Online Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7
1	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	2	2	2	2	2	2	2
7	2	2	2	2	2	3	2
8	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2
10	3	2	2	2	3	2	2
11	3	3	3	3	3	3	3
12	2	2	2	2	2	3	2
13	3	3	3	3	3	3	3
14	2	2	2	2	2	3	2
15	2	2	2	2	3	3	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2
18	3	3	3	3	3	3	3
19	3	3	2	2	2	3	2
20	3	2	2	2	2	3	2
21	2	2	2	2	2	2	2
22	3	3	3	3	3	3	3
23	3	3	3	3	3	3	3
24	2	2	2	2	2	2	2
25	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1
28	2	2	2	2	2	2	2
29	2	2	3	2	2	2	2
30	2	3	2	2	3	2	2
31	3	3	2	3	3	3	2
32	2	2	2	2	2	2	2
33	2	2	2	2	2	2	2
34	2	3	2	2	2	2	2
35	2	3	2	2	3	2	2
36	3	2	3	3	3	3	3
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2
39	3	2	2	2	3	2	2
40	3	3	2	3	3	3	3
41	3	3	3	3	3	3	3
42	1	1	1	1	1	1	1
43	1	1	1	1	1	2	1
44	1	1	1	1	1	2	1

*Intraclass correlation - .9744*

*Pairwise Comparison - 0.85*

Table 11.6b  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 ELA Grade 11 Online*

Number of Reviewers: Eight

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj					
1	3	11WL.1.2	11WL.1.8		3	11WL.1.2	11WL.1.8		3	11WL.1.2	11WL.1.8		3	11WL.1.2	11WL.1.8		3	11WL.1.2	11WL.1.4	11WL.1.8	3	11WL.1.2			3	11WL.1.2	11WL.1.8		
2	2	11RL.1.0			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			
3	2	11RL.1.1			2	11RI.1.2			2	11RI.1.1			2	11RI.1.2			2	11RI.1.1			2	11RI.1.2			2	11RI.1.2			
4	2	11RI.1.1			2	11RI.1.1			2	11RI.1.6			2	11RI.1.1			2	11RI.1.1			2	11RI.1.2			2	11RI.1.2			
5	2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			
6	2	11RI.1.1			2	11RI.1.2			2	11RI.1.2			2	11RI.1.1			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			
7	2	11RL.1.4			2	11RL.1.3			2	11RL.1.1			2	11RL.1.3			2	11RL.1.3			3	11RL.1.3			2	11RL.1.4			
8	2	11RL.1.5			2	11RL.1.2			2	11RL.1.3			2	11RL.1.3			2	11RL.1.3			2	11RL.1.3			2	11RL.1.3			
9	2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			
10	3	11RL.1.5			2	11RL.1.5			2	11RL.1.5			2	11RL.1.5			3	11RL.1.5			2	11RL.1.5			2	11RL.1.5			
11	3	11RL.1.3			3	11RL.1.3			3	11RL.1.4			3	11RL.1.5			3	11RL.1.3			3	11RL.1.3			3	11RL.1.2			
12	2	11RL.1.4			2	11RL.1.4			2	11RL.1.4			2	11RL.1.4			2	11RL.1.4			3	11RL.1.4			2	11RL.1.4			
13	3	11RL.1.5			3	11RL.1.6			3	11RL.1.3			3	11RL.1.5			3	11RL.1.5			3	11RL.1.5			3	11RL.1.3			
14	2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			3	11RL.1.2			2	11RL.1.2			
15	2	11RI.1.1			2	11RI.1.1			2	11RI.1.1			2	11RI.1.1			3	11RI.1.1			3	11RI.1.1			2	11RI.1.1			
16	2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			2	11RI.1.6			
17	2	11RI.1.2			2	11RI.1.3			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			2	11RI.1.2			
18	3	11RI.1.3			3	11RI.1.6			3	11RI.1.9			3	11RI.1.6			3	11RI.1.6			3	11RI.1.3			3	11RI.1.6			
19	3	11RI.1.8			3	11RI.1.4			2	11RI.1.4			2	11RI.1.9			2	11RI.1.4			3	11RI.1.6			2	11RI.1.4			
20	3	11RI.1.0			2	11RI.1.0			2	11RI.1.8			2	11RI.1.5			2	11RI.1.0			3	11RI.1.0			2	11RI.1.0			
21	2	11RI.2.3			2	11RI.2.3			2	11RI.2.3			2	11RI.2.3			2	11RI.2.3			2	11RI.2.3			2	11RI.2.3			
22	3	11RI.2.3			3	11RI.2.3			3	11RI.2.3			3	11RI.2.3			3	11RI.2.3			3	11RI.2.3			3	11RI.2.3			
23	3	11RI.1.7			3	11RI.1.7			3	11RI.1.7			3	11RI.1.7			3	11RI.1.7			3	11RI.1.7			3	11RI.1.7			

24	2	11RI.1.1			2	11RI.2.2			2	11RI.1.1			2	11RI.1.2			2	11RI.2.3			2	11RI.1.1			2	11RI.1.1		
25	1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.2		
26	1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1		
27	1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.1			1	11WL.2.2		
28	2	11RL.1.1			2	11RL.1.2			2	11RL.1.1			2	11RL.1.1			2	11RL.1.1			2	11RL.1.3			2	11RL.1.1		
29	2	11RL.1.4			2	11RL.1.3			3	11RL.1.4			2	11RL.1.4			2	11RL.1.4			2	11RL.1.1			2	11RL.1.3		
30	2	11RL.1.1			3	11RL.1.4			2	11RL.1.4			2	11RL.1.3			3	11RL.1.4			2	11RL.1.1			2	11RL.1.4		
31	3	11RL.1.4			3	11RL.1.3			2	11RL.1.5			3	11RL.1.3			3	11RL.1.5			3	11RL.1.4			2	11RL.1.4		
32	2	11RL.1.1			2	11RL.1.1			2	11RL.1.1			2	11RL.1.1			2	11RL.1.1			2	11RL.1.1			2	11RL.1.1		
33	2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2			2	11RL.1.2		
34	2	11RL.1.4			3	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4			2	11RI.1.4		
35	2	11RI.1.1			3	11RI.1.1			2	11RI.1.1			2	11RI.1.1			3	11RI.1.1			2	11RI.1.1			2	11RI.1.1		
36	3	11RI.1.6			2	11RI.1.6			3	11RI.1.6			3	11RI.1.6			3	11RI.1.6			3	11RI.1.6			3	11RI.1.6		
37	2	11RI.1.3			2	11RI.1.3			2	11RI.1.3			2	11RI.1.3			2	11RI.1.3			2	11RI.1.3			2	11RI.1.3		
38	2	11RI.1.5			2	11RI.1.5			2	11RI.1.5			2	11RI.1.5			2	11RI.1.5			2	11RI.1.5			2	11RI.1.5		
39	3	11RI.1.5			2	11RI.1.5			2	11RI.1.8			2	11RI.1.8			3	11RI.1.5			2	11RI.1.9			2	11RI.1.5		
40	3	11RI.1.8			3	11RI.1.8			2	11RI.1.8			3	11RI.1.8			3	11RI.1.8	11RI.1.9		3	11RI.1.8			3	11RI.1.8		
41	3	11RI.1.9			3	11RI.1.9			3	11RI.1.9			3	11RI.1.9			3	11RI.1.9			3	11RI.1.9			3	11RI.1.9		
42	1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2			1	11WL.2.2		
43	1	11WL.2.2			1	11WL.2.1			1	11WL.2.1			1	11WL.2.1			1	11WL.2.3	11WL.2.1		2	11WL.2.1			1	11WL.2.1		
44	1	11WL.2.2			1	11WL.2.2			1	11WL.2.1			1	11WL.2.1			1	11WL.2.3	11WL.2.1		2	11WL.2.1			1	11WL.2.1		
Objective Pairwise Comparison: 0.69																												
Standard Pairwise Comparison: 0.98																												

Table 11.7b

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 ELA Grade 11 Online*

Low		Medium				High	
0		33.6				56	
11RL.0.0							
11RL.1.0	2(1)						
11RL.1.1	3(1)	7(1)	28(5)	29(1)	30(2)	32(7)	
11RL.1.2	33(7)	28(1)	8(1)	9(7)	11(1)	14(7)	
11RL.1.3	11(4)	8(5)	7(4)	28(1)	30(1)	29(2)	13(2)
11RL.1.4	31(3)	34(1)	29(4)	30(4)	7(2)	11(1)	12(7)
11RL.1.5	11(1)	10(7)	8(1)	13(4)	31(2)		
11RL.1.6	13(1)						
11RL.1.7							
11RL.1.8							
11RL.1.9							
11RI.0.0							
11RI.1.0	20(5)						
11RI.1.1	24(4)	3(2)	6(2)	4(4)	15(7)	35(7)	
11RI.1.2	4(2)	6(5)	3(4)	24(1)	17(6)		
11RI.1.3	17(1)	18(2)	37(7)				
11RI.1.4	34(6)	19(4)	2(6)				
11RI.1.5	20(1)	38(7)	39(4)				
11RI.1.6	36(7)	19(1)	18(4)	4(1)	5(7)	16(7)	
11RI.1.7	23(7)						
11RI.1.8	19(1)	20(1)	40(7)	39(2)			
11RI.1.9	39(1)	41(7)	19(1)	18(1)	40(1)		
11RI.1.10							
11RI.2.0							
11RI.2.1							
11RI.2.2	24(1)						

11RI.2.3	24(1)	21(7)	22(7)					
11RI.2.4								
11RI.2.5								
11RI.2.6								
11WL.0.0								
11WL.1.0								
11WL.1.1								
11WL.1.2	1(56)							
11WL.1.3								
11WL.1.4	1(8)							
11WL.1.5								
11WL.1.6								
11WL.1.7								
11WL.1.8	1(48)							
11WL.1.9								
11WL.1.10								
11WL.2.0								
11WL.2.1	25(6)	26(14)	27(1)	43(6)	44(5)			
11WL.2.2	44(2)	43(1)	42(7)	27(6)	25(1)			
11WL.2.3	43(1)	44(1)						
11WL.2.4								
11WL.2.5								
11WL.2.6								



Table 11.8b

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 ELA Grade 11 Online*

	Low	Medium	High	
	11.2	33.6	56	
1 13724	11WL.1.2:56	11WL.1.4:8	11WL.1.8:48	
2 9855	11RL.1.0:1	11RI.1.4:6		
3 9853	11RL.1.1:1	11RI.1.1:2	11RI.1.2:4	
4 9851	11RI.1.1:4	11RI.1.2:2	11RI.1.6:1	
5 9858	11RI.1.6:7			
6 9852	11RI.1.1:2	11RI.1.2:5		
7 11926	11RL.1.1:1	11RL.1.3:4	11RL.1.4:2	
8 11919	11RL.1.2:1	11RL.1.3:5	11RL.1.5:1	
9 11917	11RL.1.2:7			
10 11924	11RL.1.5:7			
11 11931	11RL.1.2:1	11RL.1.3:4	11RL.1.4:1	11RL.1.5:1
12 11932	11RL.1.4:7			
13 11922	11RL.1.3:2	11RL.1.5:4	11RL.1.6:1	
14 11929	11RL.1.2:7			
15 8860	11RI.1.1:7			
16 8864	11RI.1.6:7			
17 8861	11RI.1.2:6	11RI.1.3:1		
18 8869	11RI.1.3:2	11RI.1.6:4	11RI.1.9:1	
19 8867	11RI.1.4:4	11RI.1.6:1	11RI.1.8:1	11RI.1.9:1
20 8871	11RI.1.0:5	11RI.1.5:1	11RI.1.8:1	
21 12838	11RI.2.3:7			
22 12829	11RI.2.3:7			
23 12837	11RI.1.7:7			
24 12822	11RI.1.1:4	11RI.1.2:1	11RI.2.2:1	11RI.2.3:1
25 8778	11WL.2.1:6	11WL.2.2:1		
26 8779	11WL.2.1:14			
27 8780	11WL.2.1:1	11WL.2.2:6		
28 8794	11RL.1.1:5	11RL.1.2:1	11RL.1.3:1	
29 8783	11RL.1.1:1	11RL.1.3:2	11RL.1.4:4	
30 8792	11RL.1.1:2	11RL.1.3:1	11RL.1.4:4	
31 8784	11RL.1.3:2	11RL.1.4:3	11RL.1.5:2	
32 8781	11RL.1.1:7			
33 8791	11RL.1.2:7			

34 12821	11RL.1.4:1	11RI.1.4:6	
35 12814	11RI.1.1:7		
36 12823	11RI.1.6:7		
37 12825	11RI.1.3:7		
38 12844	11RI.1.5:7		
39 12842	11RI.1.5:4	11RI.1.8:2	11RI.1.9:1
40 12845	11RI.1.8:7	11RI.1.9:1	
41 12839	11RI.1.9:7		
42 13644	11WL.2.2:7		
43 13646	11WL.2.1:6	11WL.2.2:1	11WL.2.3:1
44 13647	11WL.2.1:5	11WL.2.2:2	11WL.2.3:1

Table 11.9b

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 ELA Grade 11 Online*

Low DOK		Matched DOK		High DOK

11RL0.0								
11RL1.0: [3]	2:(1)[2]							
11RL1.1: [3]	3:(1)[2]	7:(1)[2]	28:(5)[2]	29:(1)[2]	30:(2)[2]	32:(7)[2]		
11RL1.2: [3]	8:(1)[2]	9:(7)[2]	11:(1)[3]	14:(7)[2]	28:(1)[2]	33:(7)[2]		
11RL1.3: [3]	7:(4)[2]	8:(5)[2]	11:(4)[3]	13:(2)[3]	28:(1)[2]	29:(2)[2]	30:(1)[2]	31:(2)[3]
11RL1.4: [3]	7:(2)[2]	11:(1)[3]	12:(7)[2]	29:(4)[2]	30:(4)[2]	31:(3)[3]	34:(1)[2]	
11RL1.5: [3]	8:(1)[2]	10:(7)[2]	11:(1)[3]	13:(4)[3]	31:(2)[2]			
11RL1.6: [3]	13:(1)[3]							
11RL1.7								
11RL1.8								
11RL1.9								
11RI0.0								
11RI1.0: [3]	20:(5)[2]							
11RI1.1: [3]	3:(2)[2]	4:(4)[2]	6:(2)[2]	15:(7)[2]	24:(4)[2]	35:(7)[2]		
11RI1.2: [3]	3:(4)[2]	4:(2)[2]	6:(5)[2]	17:(6)[2]	24:(1)[2]			
11RI1.3: [2]	17:(1)[2]	18:(2)[3]	37:(7)[2]					
11RI1.4: [3]	2:(6)[2]	19:(4)[2]	34:(6)[2]					
11RI1.5: [3]	20:(1)[2]	38:(7)[2]	39:(4)[2]					
11RI1.6: [3]	4:(1)[2]	5:(7)[2]	16:(7)[2]	18:(4)[3]	19:(1)[3]	36:(7)[3]		
11RI1.7: [3]	23:(7)[3]							
11RI1.8: [3]	19:(1)[3]	20:(1)[2]	39:(2)[2]	40:(7)[3]				
11RI1.9: [3]	18:(1)[3]	19:(1)[2]	39:(1)[2]	40:(1)[3]	41:(7)[3]			
11RI1.10								
11RI2.0								
11RI2.1								
11RI2.2: [3]	24:(1)[2]							
11RI2.3: [3]	21:(7)[2]	22:(7)[3]	24:(1)[2]					
11RI2.4								
11RI2.5								
11RI2.6								

11WL.0.0								
11WL.1.0								
11WL.1.1								
11WL.1.2: [3]	1:(56)[3]							
11WL.1.3								
11WL.1.4: [3]	1:(8)[3]							
11WL.1.5								
11WL.1.6								
11WL.1.7								
11WL.1.8: [3]	1:(48)[3]							
11WL.1.9								
11WL.1.10								
11WL.2.0								
11WL.2.1: [2]	25:(6)[1]	26:(14)[1]	27:(1)[1]	43:(6)[1]	44:(5)[1]			
11WL.2.2: [1]	25:(1)[1]	27:(6)[1]	42:(7)[1]	43:(1)[1]	44:(2)[1]			
11WL.2.3: [2]	43:(1)[1]	44:(1)[1]						
11WL.2.4								
11WL.2.5								
11WL.2.6								

## Mathematics Grade 3

Table 3.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 3 Paper*

*Number of Assessment Items - 45*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Stds #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
3OBT.0.0 Operations, Algebraic...	2	13	1 2	8 5	61.54 38.46	23.25	0.46	YES
3NF.0.0 Number and Operations ...	1	3.12	1 2	1 2	33.33 66.67	8.88	0.35	YES
3MDG.0.0 Measurement, Data, an...	2	11	1 2	2 9	18.18 81.82	12.88	0.35	YES
Total	5	27.12	1 2	11 16	41 59	45.01	0	

Table 3.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 3 Paper*

*Number of Assessment Items - 45*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	% Under	SD	% At	SD	% Above	SD	
3OBT.0.0 Operations, Algebraic...	2	13	23.25	0.46	24.8	10	67.12	9	8.08	7	YES
3NF.0.0 Number and Operations ...	1	3.12	8.88	0.35	25.17	19	52.43	22	22.4	14	YES
3MDG.0.0 Measurement, Data, an...	2	11	12.88	0.35	55.29	8	41.83	9	2.88	4	WEAK
Total	5	27.12	45.01	0	33.61	7.6	56.94	6.3	9.44	6.5	

Table 3.3

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 3 Paper

Number of Assessment Items - 45

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
3OBT.0.0 Operations, Algebraic...	2	13	23.25	0.46	8.88	1.13	68.27	8.66	YES	52	1	0.73	0.05	YES
3NF.0.0 Number and Operations ...	1	3.12	8.88	0.35	3.12	0.35	100	0	YES	20	1	0.89	0.06	YES
3MDG.0.0 Measurement, Data, an...	2	11	12.88	0.35	8.75	0.46	79.55	4.21	YES	29	1	0.75	0.03	YES
Total	5	27.12	45.01	0	6.9	3.28	82.61	16		34	16	0.79	0.08	

Table 3.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 3 Paper

Number of Assessment Items - 45

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
3OBT.0.0 Operations, Algebraic...	YES	YES	YES	YES
3NF.0.0 Number and Operations ...	YES	YES	YES	YES
3MDG.0.0 Measurement, Data, an...	YES	WEAK	YES	YES

Table 3.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 Math Grade 3 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8
1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1
3	1	2	2	2	2	2	2	2
4	1	1	1	1	1	1	1	1
5	1	2	2	2	2	2	2	1
6	1	1	1	1	1	1	1	1
7	1	1	1	1	1	2	1	1
8	1	2	1	2	1	2	1	1
9	1	1	1	1	1	1	1	1
10	2	1	2	2	2	2	2	1
11	1	1	1	1	1	2	1	1
15	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1
17	1	2	2	1	1	1	1	2
18	1	1	2	2	1	1	1	1
19	1	1	1	2	1	1	1	1
20	1	2	1	1	1	2	1	1
21	1	1	1	1	1	1	1	1
22	2	2	2	2	2	2	2	2
23	1	1	1	1	1	1	1	1
24	2	2	2	2	2	2	2	1
25	2	2	1	2	2	2	2	2
26	2	2	2	2	2	2	2	2
27	1	1	1	1	1	2	1	1
28	1	1	1	1	1	1	1	1
29	2	2	2	2	2	2	2	1
30	1	1	2	2	2	1	1	1
31	1	1	1	1	1	1	1	1
32	1	1	2	1	1	1	1	1
33	1	1	1	1	1	1	1	1
34	2	1	1	2	2	1	1	1
35	1	2	2	2	1	1	1	2
36	1	1	1	1	1	1	1	1
37	1	1	1	1	1	2	1	1
42	2	2	2	2	2	1	2	2
43	1	1	1	2	1	1	1	1
44	2	2	2	2	2	2	1	2
45	2	2	2	2	2	2	2	2
46	1	2	1	2	2	1	1	1
47	1	1	1	1	1	1	1	1
48	2	2	2	2	2	1	1	1
49	1	1	2	1	1	1	1	1
50	1	1	1	1	1	1	1	1
51	1	1	1	1	1	1	1	1
52	1	1	1	2	1	1	1	1

*Intraclass correlation - .9373*

*Pairwise Comparison - 0.79*

Item	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j
1	1	3OBT.1. 5			1	3OBT.1. 5			1	3OBT.1. 5			1	3OBT.1. 4			1	3OBT.1. 5			1	3OBT.1. 5			1	3OBT.1. 5		
2	1	3MDG.1. 5			1	3MDG.1. 5			1	3MDG.1. 5			1	3MDG.1. 5			1	3MDG.1. 5			1	3MDG.1. 5			1	3MDG.1. 5		
3	2	3NF.1.2			2	3NF.1.2			1	3NF.1.2			2	3NF.1.2			2	3NF.1.2			2	3NF.1.2			2	3NF.1.2		
4	1	3OBT.1. 7			1	3OBT.1. 6			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7		
5	2	3NF.1.1			2	3NF.1.1			1	3NF.0.0			2	3OBT.1. 1			2	3NF.1.1			1	3NF.1.1			2	3NF.1.1		
6	1	3MDG.1. 3			1	3MDG.1. 3			1	3MDG.1. 3			1	3MDG.1. 3			1	3MDG.1. 3			1	3MDG.1. 3			1	3MDG.1. 3		
7	1	3OBT.1. 3			2	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 1			1	3OBT.1. 7		
8	1	3MDG.1. 6			2	3MDG.1. 6			1	3MDG.1. 6			2	3MDG.1. 6			1	3MDG.1. 6			1	3MDG.1. 6			1	3MDG.1. 6		
9	1	3OBT.2. 3			1	3OBT.2. 3			1	3OBT.2. 3			1	3OBT.2. 3			1	3OBT.2. 3			1	3OBT.2. 3			1	3OBT.2. 3		
10	2	3NF.1.2			2	3NF.1.2			2	3NF.1.3			1	3NF.1.1			2	3NF.1.1			1	3NF.1.1			2	3NF.1.2		
11	1	3OBT.1. 3			2	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 1			1	3OBT.1. 7		
15	1	3OBT.2. 2			1	3OBT.2. 2			1	3OBT.2. 2			1	3OBT.2. 2			1	3OBT.2. 2			1	3OBT.2. 2			1	3OBT.2. 2		
16	1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 4			1	3OBT.1. 4			1	3OBT.1. 7		
17	1	3NF.1.3			1	3NF.1.3			1	3NF.1.3			2	3NF.1.3			1	3NF.1.1			2	3NF.1.3			2	3NF.1.3		
18	1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 7			1	3OBT.1. 5			2	3OBT.1. 5			1	3OBT.1. 5			2	3OBT.1. 5		
19	1	3OBT.1. 4			1	3OBT.1. 4			1	3OBT.1. 4			1	3OBT.1. 4			2	3OBT.1. 4			1	3OBT.1. 4			1	3OBT.1. 4		
20	1	3OBT.1. 3			2	3OBT.1. 3			1	3OBT.1. 3			2	3OBT.1. 3			1	3OBT.1. 3			1	3OBT.1. 2			1	3OBT.1. 3		
21	1	3MDG.1. 8			1	3MDG.1. 8			1	3MDG.1. 8			1	3MDG.1. 8			1	3MDG.1. 8			1	3OBT.1. 8			1	3MDG.1. 8		
22	2	3OBT.1. 8			2	3OBT.1. 8			2	3OBT.1. 8			2	3OBT.1. 8			2	3OBT.2. 2			2	3OBT.2. 2			2	3OBT.1. 8		
23																												



25	2	3MDG.1.3		2	3MDG.1.3		2	3MDG.1.3		2	3MDG.1.3		2	3MDG.1.3		1	3MDG.1.3		2	3MDG.1.3		
26	2	3MDG.1.1		2	3MDG.1.1		2	3MDG.1.1		2	3MDG.1.1		2	3MDG.1.1		2	3MDG.1.1		2	3MDG.1.1		
27	1	3OBT.1.3		2	3OBT.1.4		1	3OBT.1.3		1	3OBT.1.3		1	3OBT.1.3		1	3OBT.1.3		1	3OBT.1.2		
28	1	3MDG.1.3		1	3MDG.1.3		1	3MDG.1.3		1	3MDG.1.3		1	3MDG.1.3		1	3MDG.1.3		1	3MDG.1.3		
29	2	3NF.1.1		2	3NF.1.1		2	3NF.0.0		2	3NF.1.1		2	3NF.1.1		1	3NF.1.1		2	3NF.1.1		
30	2	3MDG.1.9		1	3MDG.1.9		1	3MDG.1.9		1	3MDG.1.9		2	3MDG.1.8		1	3MDG.1.8		2	3MDG.1.9		
31	1	3OBT.1.7		1	3OBT.1.7		1	3OBT.1.3		1	3OBT.1.7		1	3OBT.1.7		1	3OBT.1.7		1	3OBT.1.7		
32	1	3OBT.2.2		1	3OBT.2.2		1	3OBT.2.2		1	3OBT.2.2		1	3OBT.2.2		1	3OBT.2.2		2	3OBT.2.2		
33	1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		
34	2	3NF.1.1		1	3NF.1.1		2	3NF.1.1		1	3NF.1.1		2	3NF.1.1		1	3NF.1.1		1	3NF.1.1		
35	1	3NF.1.3		1	3NF.1.3		1	3NF.1.3		2	3NF.1.3		2	3NF.1.3		2	3NF.1.3		2	3NF.1.3		
36	1	3OBT.1.7		1	3OBT.1.4		1	3OBT.1.7		1	3OBT.1.7		1	3OBT.1.4		1	3OBT.1.7		1	3OBT.1.4		
37	1	3OBT.2.3		2	3OBT.2.3		1	3OBT.2.3		1	3OBT.2.3		1	3OBT.2.3		1	3OBT.2.3		1	3OBT.2.3		
42	2	3NF.1.3		1	3NF.1.2		2	3NF.1.2		2	3NF.1.2		2	3NF.1.2		2	3NF.1.3		2	3NF.1.2		
43	1	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.4		2	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.7		
44	2	3MDG.1.4		2	3MDG.1.4		2	3MDG.1.4		2	3MDG.1.4		2	3MDG.1.4		2	3MDG.1.4		2	3MDG.1.4		
45	2	3OBT.1.8		2	3OBT.1.8		2	3OBT.1.8		2	3OBT.1.8		2	3OBT.1.8		2	3OBT.1.3		2	3OBT.1.8		
46	2	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.4		2	3OBT.1.4		2	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.4		
47	1	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.7		1	3OBT.1.4		1	3OBT.1.4		1	3OBT.1.7		1	3OBT.1.4		
48	2	3.G.A.1		1	3.G.A.1		2	3.G.A.1		2	3.G.A.1		2	3.G.A.1		1	3.G.A.1		2	3.G.A.1		
49	1	3OBT.1.9		1	3OBT.1.9		1	3OBT.1.9		1	3OBT.1.9		1	3OBT.1.9		1	3OBT.1.9		2	3OBT.1.9		
50	1	3MDG.1.7		1	3MDG.1.7		1	3MDG.1.7		1	3MDG.1.7		1	3MDG.1.7		1	3MDG.1.7		1	3MDG.1.7		
51	1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		1	3MDG.1.8		
52	1	3NF.1.2		1	3NF.1.2		1	3NF.1.2		1	3NF.1.2		2	3NF.1.2		1	3NF.1.2		1	3NF.1.2		

Objective Pairwise Comparison: 0.78

Standard Pairwise Comparison: 0.98

Table 3.7

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

AzMERIT 2017 Math Grade 3 Paper

	Low			Medium				High				
	0			4.8				8				
3OBT.0.0												
3OBT.1.0												
3OBT.1.1	5(1)	7(1)	11(1)	23(1)	24(2)							
3OBT.1.2	24(1)	27(1)	20(1)									
3OBT.1.3	20(7)	23(6)	27(6)	24(5)	31(1)	11(6)	7(6)	45(1)				
3OBT.1.4	43(7)	46(8)	47(6)	1(2)	16(2)	19(8)	36(4)	27(1)				
3OBT.1.5	18(5)	1(6)										
3OBT.1.6	4(1)											
3OBT.1.7	4(7)	7(1)	18(3)	16(6)	11(1)	9(1)	23(1)	36(4)	31(7)	47(2)	43(1)	45(1)
3OBT.1.8	45(6)	22(6)	21(1)									
3OBT.1.9	49(8)											
3OBT.1.10												
3OBT.2.0												
3OBT.2.1												
3OBT.2.2	22(2)	32(8)	15(8)									
3OBT.2.3	9(7)	37(8)										
3NF.0.0	29(1)	5(1)										
3NF.1.0												
3NF.1.1	5(6)	10(4)	17(1)	29(7)	34(8)							
3NF.1.2	42(6)	10(3)	3(8)	52(8)								
3NF.1.3	10(1)	17(7)	42(2)	35(8)								
3MDG.0.0												
3MDG.1.0												
3MDG.1.1	26(8)											
3MDG.1.2												

3MDG.1.3	28(8)	25(8)	6(8)									
3MDG.1.4	44(8)											
3MDG.1.5	2(8)											
3MDG.1.6	8(8)											
3MDG.1.7	50(8)											
3MDG.1.8	51(8)	21(7)	30(2)	33(8)								
3MDG.1.9	30(6)											
3MDG.2.0												
3.G.A.1	48(8)											
3.G.A.2												

Table 3.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 3 Paper*

	Low	Medium	High
	1.6	4.8	8
1 10409	3OBT.1.4:2	3OBT.1.5:6	
2 10395	3MDG.1.5:8		
3 10462	3NF.1.2:8		
4 12902	3OBT.1.6:1	3OBT.1.7:7	
5 10687	3OBT.1.1:1	3NF.0.0:1	3NF.1.1:6
6 13747	3MDG.1.3:8		
7 12281	3OBT.1.1:1	3OBT.1.3:6	3OBT.1.7:1
8 13751	3MDG.1.6:8		
9 10389	3OBT.1.7:1	3OBT.2.3:7	
10 10683	3NF.1.1:4	3NF.1.2:3	3NF.1.3:1
11 12054	3OBT.1.1:1	3OBT.1.3:6	3OBT.1.7:1
15 10421	3OBT.2.2:8		
16 10404	3OBT.1.4:2	3OBT.1.7:6	
17 13767	3NF.1.1:1	3NF.1.3:7	
18 12941	3OBT.1.5:5	3OBT.1.7:3	
19 12296	3OBT.1.4:8		
20 13765	3OBT.1.2:1	3OBT.1.3:7	
21 11966	3OBT.1.8:1	3MDG.1.8:7	
22 12421	3OBT.1.8:6	3OBT.2.2:2	
23 10679	3OBT.1.1:1	3OBT.1.3:6	3OBT.1.7:1
24 10677	3OBT.1.1:2	3OBT.1.2:1	3OBT.1.3:5
25 10434	3MDG.1.3:8		
26 11588	3MDG.1.1:8		
27 10396	3OBT.1.2:1	3OBT.1.3:6	3OBT.1.4:1
28 13748	3MDG.1.3:8		
29 10685	3NF.0.0:1	3NF.1.1:7	
30 10415	3MDG.1.8:2	3MDG.1.9:6	
31 10438	3OBT.1.3:1	3OBT.1.7:7	
32 10427	3OBT.2.2:8		
33 10399	3MDG.1.8:8		
34 10477	3NF.1.1:8		
35 13773	3NF.1.3:8		

36 13740	3OBT.1.4:4	3OBT.1.7:4	
37 10671	3OBT.2.3:8		
42 10460	3NF.1.2:6	3NF.1.3:2	
43 12085	3OBT.1.4:7	3OBT.1.7:1	
44 10430	3MDG.1.4:8		
45 9464	3OBT.1.3:1	3OBT.1.7:1	3OBT.1.8:6
46 10408	3OBT.1.4:8		
47 9455	3OBT.1.4:6	3OBT.1.7:2	
48 12569	3.G.A.1:8		
49 10469	3OBT.1.9:8		
50 13749	3MDG.1.7:8		
51 10398	3MDG.1.8:8		
52 10448	3NF.1.2:8		

Table 3.9 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK]) AzMERIT 2017 Math Grade 3 Paper

Low DOK		Matched DOK		High DOK								
3OBT.0.0												
3OBT.1.0												
3OBT.1.1: [1]	5:(1)[2]	7:(1)[1]	11:(1)[1]	23:(1)[1]	24:(2)[2]							
3OBT.1.2: [1]	20:(1)[1]	24:(1)[2]	27:(1)[1]									
3OBT.1.3: [2]	7:(6)[1]	11:(6)[1]	20:(7)[1]	23:(6)[1]	24:(5)[2]	27:(6)[1]	31:(1)[1]	45:(1)[2]				
3OBT.1.4: [1]	1:(2)[1]	16:(2)[1]	19:(8)[1]	27:(1)[2]	36:(4)[1]	43:(7)[1]	46:(8)[1]	47:(6)[1]				
3OBT.1.5: [2]	1:(6)[1]	18:(5)[1]										
3OBT.1.6: [1]	4:(1)[1]											
3OBT.1.7: [1]	4:(7)[1]	7:(1)[1]	9:(1)[1]	11:(1)[1]	16:(6)[1]	18:(3)[1]	23:(1)[1]	31:(7)[1]	36:(4)[1]	43:(1)[1]	45:(1)[2]	47:(2)[1]
3OBT.1.8: [2]	21:(1)[1]	22:(6)[2]	45:(6)[2]									
3OBT.1.9: [2]	49:(8)[1]											
3OBT.1.10												
3OBT.2.0												
3OBT.2.1												
3OBT.2.2: [1]	15:(8)[1]	22:(2)[2]	32:(8)[1]									
3OBT.2.3: [1]	9:(7)[1]	37:(8)[1]										
3NF.0.0: [2]	5:(1)[1]	29:(1)[2]										
3NF.1.0												
3NF.1.1: [1]	5:(6)[2]	10:(4)[2]	17:(1)[1]	29:(7)[2]	34:(8)[1]							
3NF.1.2: [2]	3:(8)[2]	10:(3)[2]	42:(6)[2]	52:(8)[1]								
3NF.1.3: [2]	10:(1)[2]	17:(7)[1]	35:(8)[2]	42:(2)[2]								
3MDG.0.0												
3MDG.1.0												
3MDG.1.1: [2]	26:(8)[2]											
3MDG.1.2												
3MDG.1.3: [2]	6:(8)[1]	25:(8)[2]	28:(8)[1]									
3MDG.1.4: [2]	44:(8)[2]											
3MDG.1.5: [2]	2:(8)[1]											
3MDG.1.6: [1]	8:(8)[1]											
3MDG.1.7: [1]	50:(8)[1]											
3MDG.1.8: [2]	21:(7)[1]	30:(2)[2]	33:(8)[1]	51:(8)[1]								
3MDG.1.9: [2]	30:(6)[1]											
3MDG.2.0												
3.G.A.1: [2]	48:(8)[2]											
3.G.A.2												

## Mathematics Grade 4

Table 4.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 4 Paper*

*Number of Assessment Items - 45*

Reporting Category			Level by Standard			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
4OBT.0.0 Operations, Algebraic...	2	12	1 2	6 6	50 50	22.62	0.52	YES
4NF.0.0 Number and Operations ...	1	7	1 2	2 5	28.57 71.43	15.62	0.52	YES
4MDG.0.0 Measurement, Data, an...	2	10	1 2	6 4	60 40	8.25	0.71	YES
Total	5	29	1 2	14 15	48 52	46.49	0.53	

Table 4.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 4 Paper*

*Number of Assessment Items - 45*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
4OBT.0.0 Operations, Algebraic...	2	12	22.62	0.52	34.63	12	53.11	10	12.25	7	YES
4NF.0.0 Number and Operations ...	1	7	15.62	0.52	54.48	8	39.95	10	5.57	8	WEAK
4MDG.0.0 Measurement, Data, an...	2	10	8.25	0.71	21.5	17	72.59	18	5.9	9	YES
Total	5	29	46.49	0.53	38.98	9.2	52.15	8.1	8.87	5.7	

Table 4.3

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 4 Paper

Number of Assessment Items - 45

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
4OBT.0.0 Operations, Algebraic...	2	12	22.62	0.52	10.38	0.52	86.46	4.31	YES	50	1	0.79	0.03	YES
4NF.0.0 Number and Operations ...	1	7	15.62	0.52	6.12	0.64	87.5	9.16	YES	32	1	0.72	0.03	YES
4MDG.0.0 Measurement, Data, an...	2	10	8.25	0.71	5.38	0.92	53.75	9.16	YES	18	1	0.79	0.02	YES
Total	5	29	46.49	0.53	7.3	2.7	75.9	19		33	16	0.77	0.04	

Table 4.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 4 Paper

Number of Assessment Items - 45

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
4OBT.0.0 Operations, Algebraic...	YES	YES	YES	YES
4NF.0.0 Number and Operations ...	YES	WEAK	YES	YES
4MDG.0.0 Measurement, Data, an...	YES	YES	YES	YES



Table 4.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 Math Grade 4 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8
1	2	1	2	1	1	1	1	1
2	1	2	1	1	2	2	1	1
3	2	2	2	2	2	1	1	1
4	1	1	1	1	1	1	1	1
5	1	1	1	1	1	2	1	1
6	2	1	1	2	2	2	1	1
7	1	2	2	2	2	2	2	2
8	1	1	1	1	1	1	1	1
9	1	2	1	2	1	1	1	1
10	1	2	2	2	2	2	2	2
11	1	2	2	2	1	2	1	1
15	2	2	2	2	2	2	1	1
16	1	2	1	1	1	1	1	1
17	2	2	2	2	2	2	2	2
18	1	1	1	1	1	1	1	1
19	2	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2	2
21	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1
23	2	2	2	2	2	2	2	2
24	1	1	1	1	1	1	1	1
25	1	2	2	2	2	2	1	1
26	1	1	1	1	1	2	1	1
27	1	1	1	1	1	1	1	1
28	2	2	2	1	2	2	2	1
29	2	2	2	2	2	2	2	1
30	2	2	1	2	1	2	1	1
31	1	2	2	1	1	2	1	1
32	2	3	2	2	2	2	2	2
33	1	1	2	1	1	1	1	1
34	1	1	2	2	1	1	1	1
35	2	1	2	1	2	2	2	1
36	1	1	2	1	1	1	1	1
37	1	1	1	2	2	2	1	1
42	1	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1	1
44	1	2	1	2	1	2	1	1
45	1	1	1	1	1	1	1	1
46	1	1	1	1	1	1	1	1
47	1	1	1	1	2	1	1	1
48	2	2	2	1	1	1	1	1
49	1	1	1	1	1	1	1	1
50	1	1	2	1	1	1	1	1
51	2	1	1	1	2	1	1	1
52	1	1	1	1	1	1	1	1

*Intraclass correlation - .9038*

*Pairwise Comparison - 0.75*

Table 4.6 *DOK Levels and Objectives Code by Each Reviewer AzMERIT 2017 Math Grade 4 Paper*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	1	4NF.1.3			1	4NF.1.3			2	4NF.1.3			1	4NF.1.3			1	4NF.1.3			2	4NF.1.3			1	4NF.1.3		
2	2	4OBT.1.2			2	4OBT.1.2			1	4OBT.1.2			2	4OBT.1.2			1	4OBT.1.2			1	4OBT.1.2			1	4OBT.1.1		
3	2	4OBT.1.1			1	4OBT.1.1			2	4OBT.1.1			2	4OBT.1.1			2	4OBT.1.1			1	4OBT.1.2			1	4OBT.1.1		
4	1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3		
5	1	4OBT.1.1			2	4OBT.1.2			1	4OBT.1.2			1	4OBT.1.2			1	4OBT.1.2			1	4OBT.1.1			1	4OBT.1.2		
6	2	4MDG.1.7			2	4MDG.1.7			2	4MDG.1.7			1	4MDG.1.7			2	4MDG.1.7			1	4MDG.1.7			1	4MDG.1.7		
7	2	4NF.1.1			2	4NF.1.1			1	4NF.1.2			2	4NF.1.1			2	4NF.1.1			2	4NF.1.1			2	4NF.1.1		
8	1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5		
9	1	4MDG.2.1			1	4MDG.2.1			1	4MDG.2.2			2	4MDG.2.1			2	4MDG.2.1			1	4MDG.2.1			1	4MDG.2.1		
10	2	4NF.1.4			2	4NF.1.4			1	4NF.1.4			2	4NF.1.4			2	4NF.1.4			2	4NF.1.4			2	4NF.1.4		
11	1	4OBT.1.1			2	4OBT.1.1			1	4OBT.1.1			2	4OBT.1.1			2	4OBT.1.2			1	4OBT.1.1			2	4OBT.1.1		
15	2	4OBT.1.3			2	4OBT.1.3			2	4OBT.1.3			2	4OBT.1.3			2	4OBT.2.4			1	4OBT.1.3			2	4OBT.1.3		
16	1	4MDG.2.2			1	4MDG.2.1			1	4MDG.2.2			2	4MDG.2.2			1	4MDG.2.1			1	4MDG.2.1			1	4MDG.2.1		
17	2	4OBT.1.3			2	4MDG.1.2			2	4OBT.1.3			2	4MDG.1.2			2	4OBT.1.3			2	4OBT.1.3			2	4MDG.1.2		
18	1	4MDG.1.6			1	4MDG.1.6			1	4MDG.1.6			1	4MDG.1.6			1	4MDG.1.6			1	4MDG.1.6			1	4MDG.1.6		
19	2	4MDG.1.4			2	4MDG.1.4			2	4MDG.1.4			2	4MDG.1.4			2	4NF.1.3			2	4MDG.1.4			2	4MDG.1.4		
20	2	4OBT.1.4			2	4OBT.1.4			2	4OBT.1.4			2	4OBT.1.4			2	4OBT.1.4			2	4OBT.1.4			2	4OBT.1.4		
21	1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5			1	4OBT.2.5		
22	1	4NF.1.4			1	4NF.1.4			1	4NF.1.4			1	4NF.1.4			1	4NF.1.3			1	4NF.1.4			1	4NF.1.4		
23	2	4OBT.1.5			2	4OBT.1.5			2	4OBT.1.5			2	4OBT.1.5			2	4OBT.1.5			2	4OBT.1.5			2	4OBT.1.5		
24	1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3			1	4NF.1.3		
25	2	4NF.1.2			2	4NF.1.2			1	4NF.1.2			2	4NF.1.2			2	4NF.1.2			2	4NF.1.2			1	4NF.1.2		

26	1	4OBT.1.1		2	4OBT.1.1		1	4OBT.1.2		1	4OBT.1.2		1	4OBT.1.2		1	4OBT.1.1		1	4OBT.1.2		1	4OBT.1.2		
27	1	4NF.1.4		1	4NF.1.2		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		
28	2	4OBT.2.4		2	4OBT.2.4		2	4OBT.2.4		2	4OBT.2.4		1	4OBT.2.4		1	4OBT.2.4		2	4OBT.2.4		2	4OBT.2.4		
29	2	4OBT.1.3		2	4OBT.1.3		2	4OBT.1.2		2	4OBT.1.3		2	4OBT.1.3		1	4OBT.1.3		2	4OBT.1.3		2	4OBT.1.3		
30	1	4NF.1.7		2	4NF.1.7		2	4NF.1.7		2	4NF.1.7		2	4NF.1.6		1	4NF.1.6		1	4NF.1.7		1	4NF.1.7		
31	1	4OBT.2.4		2	4OBT.2.4		1	4OBT.2.4		2	4OBT.2.4		1	4OBT.2.4		1	4OBT.2.4		2	4OBT.2.4		1	4OBT.2.4		
32	2	4NF.1.2		2	4NF.1.2		2	4NF.1.2		3	4NF.1.2		2	4NF.1.2		2	4NF.1.2		2	4NF.1.2		2	4NF.1.2		
33	1	4OBT.2.6		1	4OBT.2.6		1	4OBT.1.2		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		2	4OBT.2.6		1	4OBT.1.2		
34	1	4NF.1.1		1	4NF.1.2		1	4NF.1.2		1	4NF.1.1		2	4NF.1.2		1	4NF.1.1		2	4NF.1.2		1	4NF.1.2		
35	2	4MDG.1.7		2	4MDG.1.7		2	4MDG.1.7		1	4MDG.1.7		1	4MDG.1.7		1	4MDG.1.7		2	4MDG.1.7		2	4MDG.1.7		
36	1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		2	4OBT.2.6		1	4OBT.1.2		
37	2	4MDG.1.7		2	4MDG.1.7		1	4MDG.1.7		1	4MDG.1.7		2	4MDG.1.7		1	4MDG.1.7		1	4MDG.1.7		1	4MDG.1.7		
42	1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.1		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		
43	1	4OBT.2.5		1	4OBT.2.5		1	4OBT.2.5		1	4OBT.2.5		1	4OBT.1.2		1	4OBT.2.5		1	4OBT.2.5		1	4OBT.2.5		
44	1	4OBT.1.2		2	4OBT.1.2		1	4OBT.1.2		2	4OBT.1.2		2	4OBT.1.2		1	4OBT.1.2		1	4OBT.1.2		1	4OBT.1.2		
45	1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.1.2		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		
46	1	4OBT.2.3		1	4OBT.2.3		1	4OBT.2.3		1	4OBT.2.3		1	4OBT.1.6		1	4OBT.2.3		1	4OBT.2.3		1	4OBT.2.3		
47	2	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		1	4OBT.2.2		
48	1	4NF.1.6		1	4NF.1.6	4NF.1.5	2	4NF.1.5		2	4NF.1.5	4NF.1.6	1	4NF.1.5	4NF.1.6	1	4NF.1.5		2	4NF.1.6		1	4NF.1.6	4NF.1.5	
49	1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		1	4NF.1.4		
50	1	4OBT.2.6		1	4OBT.2.1		1	4OBT.2.1		1	4OBT.2.6		1	4OBT.2.6		1	4OBT.2.6		2	4OBT.2.6		1	4OBT.2.6		
51	2	4MDG.1.1		1	4MDG.1.1		2	4MDG.1.2		1	4MDG.1.1		1	4MDG.1.1		1	4MDG.1.1		1	4MDG.1.2		1	4MDG.1.2		
52	1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		1	4NF.1.3		

Objective Pairwise Comparison: 0.8

Standard Pairwise Comparison: 0.98

Table 4.7

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

AzMERIT 2017 Math Grade 4 Paper

Low				Medium				High			
0				9.6				16			
4OBT.0.0											
4OBT.1.0											
4OBT.1.1	2(1)	3(7)	5(2)	11(7)	26(3)						
4OBT.1.2	26(5)	29(1)	33(2)	36(1)	11(1)	5(6)	3(1)	2(7)	44(8)	45(1)	43(1)
4OBT.1.3	15(7)	17(5)	29(7)								
4OBT.1.4	20(8)										
4OBT.1.5	23(8)										
4OBT.1.6	46(1)										
4OBT.2.0											
4OBT.2.1	50(2)	42(1)									
4OBT.2.2	42(7)	47(8)									
4OBT.2.3	46(7)										
4OBT.2.4	31(8)	28(8)	15(1)								
4OBT.2.5	21(8)	8(8)	43(7)								
4OBT.2.6	45(7)	50(6)	33(6)	36(7)							
4NF.0.0											
4NF.1.0											
4NF.1.1	34(3)	7(6)									
4.NF.1.2	7(2)	34(5)	32(16)	27(1)	25(8)						
4NF.1.3	22(1)	1(8)	4(8)	19(1)	24(8)	52(8)					
4NF.1.4	49(8)	27(7)	22(7)	10(8)							
4NF.1.5	48(6)										
4NF.1.6	30(2)	48(6)									
4NF.1.7	30(6)										
4MDG.0.0											

4MDG.1.0											
4MDG.1.1	51(5)										
4MDG.1.2	51(3)	17(3)									
4MDG.1.3											
4MDG.1.4	19(7)										
4MDG.1.5											
4MDG.1.6	18(8)										
4MDG.1.7	6(8)	37(8)	35(8)								
4MDG.2.0											
4MDG.2.1	9(7)	16(5)									
4MDG.2.2	16(3)	9(1)									
4MDG.2.3											

Table 4.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 4 Paper*

Low		Medium		High	
3.2		9.6		16	
1 10766	4NF.1.3:8				
2 11675	4OBT.1.1:1			4OBT.1.2:7	
3 13762	4OBT.1.1:7			4OBT.1.2:1	
4 12266	4NF.1.3:8				
5 13760	4OBT.1.1:2			4OBT.1.2:6	
6 10779	4MDG.1.7:8				
7 13780	4NF.1.1:6			4.NF.1.2:2	
8 13769	4OBT.2.5:8				
9 10705	4MDG.2.1:7			4MDG.2.2:1	
10 10748	4NF.1.4:8				
11 10781	4OBT.1.1:7			4OBT.1.2:1	
15 13320	4OBT.1.3:7			4OBT.2.4:1	
16 10713	4MDG.2.1:5			4MDG.2.2:3	
17 10774	4OBT.1.3:5			4MDG.1.2:3	
18 13779	4MDG.1.6:8				
19 11345	4NF.1.3:1			4MDG.1.4:7	
20 10784	4OBT.1.4:8				
21 10731	4OBT.2.5:8				
22 9474	4NF.1.3:1			4NF.1.4:7	
23 10741	4OBT.1.5:8				
24 12263	4NF.1.3:8				
25 10768	4.NF.1.2:8				
26 13772	4OBT.1.1:3			4OBT.1.2:5	
27 10744	4NF.1.4:7			4.NF.1.2:1	
28 10756	4OBT.2.4:8				
29 11105	4OBT.1.2:1			4OBT.1.3:7	
30 10735	4NF.1.6:2			4NF.1.7:6	
31 13777	4OBT.2.4:8				
32 9482	4.NF.1.2:16				
33 10720	4OBT.1.2:2			4OBT.2.6:6	
34 10758	4NF.1.1:3			4.NF.1.2:5	
35 10769	4MDG.1.7:8				

36 13757	4OBT.1.2:1	4OBT.2.6:7
37 11331	4MDG.1.7:8	
42 13733	4OBT.2.1:1	4OBT.2.2:7
43 13738	4OBT.1.2:1	4OBT.2.5:7
44 10728	4OBT.1.2:8	
45 11608	4OBT.1.2:1	4OBT.2.6:7
46 10710	4OBT.1.6:1	4OBT.2.3:7
47 10709	4OBT.2.2:8	
48 13776	4NF.1.5:6	4NF.1.6:6
49 12276	4NF.1.4:8	
50 10725	4OBT.2.1:2	4OBT.2.6:6
51 13782	4MDG.1.1:5	4MDG.1.2:3
52 10772	4NF.1.3:8	

Table 4.9 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK]) AzMERIT 2017 Math Grade 4 Paper

Low DOK		Matched DOK		High DOK								
4OBT.0.0												
4OBT.1.0												
4OBT.1.1: [2]	2:(1)[1]	3:(7)[2]	5:(2)[1]	11:(7)[1]	26:(3)[1]							
4OBT.1.2: [2]	2:(7)[1]	3:(1)[2]	5:(6)[1]	11:(1)[2]	26:(5)[1]	29:(1)[2]	33:(2)[1]	36:(1)[1]	43:(1)[1]	44:(8)[1]	45:(1)[1]	
4OBT.1.3: [2]	15:(7)[2]	17:(5)[2]	29:(7)[2]									
4OBT.1.4: [1]	20:(8)[2]											
4OBT.1.5: [2]	23:(8)[2]											
4OBT.1.6: [2]	46:(1)[1]											
4OBT.2.0												
4OBT.2.1: [1]	42:(1)[1]	50:(2)[1]										
4OBT.2.2: [1]	42:(7)[1]	47:(8)[1]										
4OBT.2.3: [1]	46:(7)[1]											
4OBT.2.4: [1]	15:(1)[2]	28:(8)[2]	31:(8)[1]									
4OBT.2.5: [2]	8:(8)[1]	21:(8)[1]	43:(7)[1]									
4OBT.2.6: [1]	33:(6)[1]	36:(7)[1]	45:(7)[1]	50:(6)[1]								
4NF.0.0												
4NF.1.0												
4NF.1.1: [2]	7:(6)[2]	34:(3)[1]										
4NF.1.2: [2]	7:(2)[2]	25:(8)[2]	27:(1)[1]	32:(16)[2]	34:(5)[1]							
4NF.1.3: [2]	1:(8)[1]	4:(8)[1]	19:(1)[2]	22:(1)[1]	24:(8)[1]	52:(8)[1]						
4NF.1.4: [2]	10:(8)[2]	22:(7)[1]	27:(7)[1]	49:(8)[1]								
4NF.1.5: [1]	48:(6)[1]											
4NF.1.6: [1]	30:(2)[2]	48:(6)[1]										
4NF.1.7: [2]	30:(6)[2]											
4MDG.0.0												
4MDG.1.0												
4MDG.1.1: [1]	51:(5)[1]											
4MDG.1.2: [2]	17:(3)[2]	51:(3)[1]										
4MDG.1.3												
4MDG.1.4: [2]	19:(7)[2]											
4MDG.1.5												
4MDG.1.6: [1]	18:(8)[1]											
4MDG.1.7: [2]	6:(8)[2]	35:(8)[2]	37:(8)[1]									
4MDG.2.0												
4MDG.2.1: [1]	9:(7)[1]	16:(5)[1]										
4MDG.2.2: [1]	9:(1)[1]	16:(3)[1]										
4MDG.2.3												



## Mathematics Grade 5

Table 5.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 5 Paper*

*Number of Assessment Items - 45*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
5OBT.0.0 Operations, Algebraic...	2	11	1 2	9 2	81.82 18.18	19.38	1.06	YES
5NF.0.0 Number and Operations ...	1	7	1 2	1 6	14.29 85.71	13.88	1.13	YES
5MDG.0.0 Measurement, Data, an...	2	9	1 2	3 6	33.33 66.67	11.75	0.46	YES
Total	5	27	1 2	13 14	48 52	45.01	0	

Table 5.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 5 Paper*

*Number of Assessment Items - 45*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	% Under	SD	% At	SD	% Above	SD	
5OBT.0.0 Operations, Algebraic...	2	11	19.38	1.06	12.89	4	71.7	6	15.42	4	YES
5NF.0.0 Number and Operations ...	1	7	13.88	1.13	57.91	12	36.56	11	5.52	5	WEAK
5MDG.0.0 Measurement, Data, an...	2	9	11.75	0.46	35.89	21	57.86	20	6.25	7	YES
Total	5	27	45.01	0	32.78	8.4	57.22	8.2	10	3.1	

Table 5.3

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 5 Paper

Number of Assessment Items - 45

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster#	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
5OBT.0.0 Operations, Algebraic...	2	11	19.38	1.06	8.5	0.76	77.27	6.87	YES	43	2	0.76	0.05	YES
5NF.0.0 Number and Operations ...	1	7	13.88	1.13	6.62	0.52	94.64	7.39	YES	31	3	0.82	0.04	YES
5MDG.0.0 Measurement, Data, an...	2	9	11.75	0.46	7.12	0.64	79.17	7.12	YES	26	1	0.81	0.03	YES
Total	5	27	45.01	0	7.4	0.97	83.69	10		33	9	0.8	0.03	

Table 5.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 5 Paper

Number of Assessment Items - 45

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5OBT.0.0 Operations, Algebraic...	YES	YES	YES	YES
5NF.0.0 Number and Operations ...	YES	WEAK	YES	YES
5MDG.0.0 Measurement, Data, an...	YES	YES	YES	YES

Table 5.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 Math Grade 5 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8
1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1
3	1	1	1	1	2	1	1	1
4	2	2	1	2	2	2	1	2
5	1	2	1	1	2	1	1	1
6	2	2	1	2	2	2	2	1
7	1	2	2	2	2	2	1	1
8	1	1	1	2	1	1	1	1
9	2	1	2	1	1	2	1	1
10	2	2	1	2	1	1	2	1
11	1	1	1	2	1	2	1	1
16	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1
20	2	2	2	1	1	1	1	2
21	1	1	1	1	1	1	1	1
22	1	1	1	2	1	2	1	1
23	1	2	2	2	2	2	2	1
24	1	1	2	1	1	1	1	1
25	1	1	1	1	1	1	1	1
26	2	1	2	1	2	2	1	1
27	2	2	1	2	2	2	2	1
28	1	1	1	1	2	2	1	1
29	1	2	1	2	1	1	1	1
30	1	1	1	1	1	1	1	1
31	1	2	1	2	2	1	2	1
32	1	1	1	2	1	2	1	1
33	1	1	2	2	1	1	1	1
34	1	2	1	2	2	1	2	1
35	2	2	2	2	1	2	2	2
36	2	2	1	2	2	2	2	1
37	2	2	2	2	2	2	2	2
41	1	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1	1
44	1	1	2	1	1	1	1	1
45	1	1	1	2	1	1	1	1
46	1	1	1	1	1	1	1	1
47	2	2	2	1	2	2	2	2
48	1	1	1	1	1	1	1	1
49	1	1	1	1	1	1	1	1
50	2	1	2	2	1	2	2	1
51	2	2	2	2	2	2	2	2
52	1	1	1	1	1	1	1	1

*Intraclass correlation - .9087*

*Pairwise Comparison - 0.75*

Number of Reviewers: Nine

Item	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j
1	1	5OBT.1.1			1	5OBT.1.1			1	5OBT.1.1			1	5OBT.1.1			1	5OBT.1.1			1	5OBT.1.2			1	5OBT.1.1			1	5OBT.1.1		
2	1	5NF.1.5			1	5NF.1.5			1	5NF.1.5			1	5NF.1.5			1	5NF.1.5			1	5NF.1.5			1	5NF.1.5			1	5NF.1.5		
3	2	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3			1	5OBT.2.3		
4	2	5NF.1.6			2	5NF.1.6			2	5NF.1.6			2	5NF.1.6			2	5NF.1.4			1	5NF.1.6			1	5NF.1.6			1	5NF.1.6		
5	2	5MDG.2.1			1	5MDG.2.2			1	5MDG.2.2			2	5MDG.2.2			1	5MDG.2.2			1	5MDG.2.2			1	5MDG.2.2			1	5MDG.2.2		
6	2	5MDG.1.5			2	5MDG.1.5			2	5MDG.1.5			2	5MDG.1.5			2	5MDG.2.2			1	5MDG.1.5			1	5MDG.1.5			2	5MDG.1.5		
7	2	5MDG.1.3			2	5MDG.1.3			1	5MDG.1.3			2	5MDG.1.3			2	5MDG.1.5			1	5MDG.1.3			2	5MDG.1.5			1	5MDG.1.3		
8	1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5			2	5OBT.2.1			1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5		
9	1	5NF.1.2			2	5NF.1.2			2	5NF.1.2			1	5NF.1.2			1	5NF.1.1			1	5NF.1.2			2	5NF.1.1			1	5NF.1.1		
10	1	5MDG.1.4			1	5MDG.1.4			2	5MDG.1.4			2	5MDG.1.3			2	5MDG.1.4			1	5MDG.1.4			1	5MDG.1.4			2	5MDG.1.4		
11	1	5OBT.2.7			2	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			2	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.5		
16	1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6		
17	1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6		
18	1	5NF.1.4			1	5NF.1.4			1	5NF.1.4			1	5NF.1.4			1	5NF.1.4			1	5NF.1.4			1	5NF.1.4			1	5NF.1.4		
19	1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.6		
20	1	5MDG.2.3			1	5MDG.2.3			2	5MDG.2.3			2	5MDG.2.3			1	5MDG.2.3			2	5MDG.2.3			2	5MDG.2.4			1	5MDG.2.3		
21	1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.5			1	5OBT.2.6			1	5OBT.2.6			1	5OBT.2.5		
22	1	5NF.1.3			2	5NF.1.7			1	5NF.1.6			1	5NF.1.6			2	5NF.1.3			1	5NF.1.6			1	5NF.1.7			1	5NF.1.7		
23	2	5NF.1.6			2	5NF.1.6			1	5NF.1.6			2	5NF.1.6			2	5NF.1.6			1	5NF.1.6			2	5NF.1.3			2	5NF.1.6		
24	1	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			1	5OBT.2.7			2	5OBT.2.7			1	5OBT.2.7		
25	1	5NF.1.1			1	5NF.1.1			1	5NF.1.1			1	5NF.1.1			1	5NF.1.1			1	5NF.1.1			1	5NF.1.1			1	5NF.1.1		
26	2	5OBT.2.6			2	5NF.1.3			2	5OBT.2.6			1	5NF.1.3			1	5NF.1.3			1	5NF.1.3			2	5OBT.2.7			1	5NF.1.3		

27	2	5MDG.2.2		2	5MDG.2.2		2	5MDG.2.2		2	5MDG.2.2		2	5MDG.2.2		1	5MDG.2.2		1	5MDG.2.2		2	5MDG.2.2		
28	2	5OBT.2.7		2	5OBT.2.7		1	5OBT.2.7		1	5OBT.2.7		1	5OBT.2.7		1	5OBT.2.7		1	5OBT.2.7		1	5OBT.2.7		
29	1	5NF.1.5		1	5NF.1.4		1	5OBT.2.5		2	5OBT.2.5		2	5NF.1.4		1	5NF.1.4		1	5NF.1.5		1	5NF.1.4		
30	1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.6		1	5OBT.2.5		
31	2	5MDG.2.2		1	5MDG.2.1		1	5MDG.2.2		2	5MDG.2.2		2	5MDG.2.2		1	5MDG.2.2		1	5MDG.2.2		2	5OBT.2.2		
32	1	5OBT.2.6		2	5NF.1.3		1	5OBT.2.6		1	5NF.1.3		2	5NF.1.3		1	5NF.1.3		1	5OBT.2.7		1	5OBT.2.6		
33	1	5OBT.2.2		1	5OBT.2.2		1	5OBT.2.2		1	5OBT.2.2		2	5OBT.2.2		1	5OBT.2.2		2	5OBT.2.2		1	5OBT.2.2		
34	2	5MDG.1.2		1	5MDG.1.2		1	5MDG.1.2		2	5MDG.1.2		2	5MDG.1.2		1	5MDG.1.2		1	5MDG.1.2		2	5MDG.1.2		
35	1	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		2	5OBT.2.4		
36	2	5MDG.1.4		2	5MDG.1.4		2	5MDG.1.4		2	5MDG.1.4		2	5MDG.1.4		1	5MDG.1.4		1	5MDG.1.4		2	5MDG.1.4		
37	2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		2	5OBT.1.1		
41	1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		1	5MDG.1.3		
42	1	5NF.1.7		1	5NF.1.7		1	5NF.1.7		1	5NF.1.7		1	5NF.1.4		1	5NF.1.4		1	5NF.1.7		1	5NF.1.7		
43	1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		1	5NF.1.1		
44	1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		2	5OBT.2.3		1	5OBT.2.3		
45	1	5MDG.1.5		1	5MDG.1.5		1	5MDG.1.5		1	5MDG.1.5		2	5MDG.1.5		1	5MDG.1.5		1	5MDG.1.5		1	5MDG.1.5		
46	1	5OBT.2.3		1	5OBT.2.1		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		1	5OBT.2.3		
47	2	5MDG.1.1		2	5MDG.1.1		2	5MDG.1.1		2	5MDG.1.1		1	5OBT.2.7		2	5MDG.1.1		2	5MDG.1.1		2	5MDG.1.1		
48	1	5OBT.2.5		1	5OBT.2.1		1	5OBT.2.5		1	5OBT.2.5		1	5OBT.2.1		1	5OBT.2.5		1	5OBT.2.1		1	5OBT.2.2		
49	1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		1	5NF.1.4		
50	1	5NF.1.1		2	5NF.1.1		2	5NF.1.1		1	5NF.1.1		2	5NF.1.1		1	5NF.1.1		2	5NF.1.1		2	5NF.1.1		
51	2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		2	5OBT.1.3		
52	1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		1	5NF.1.2		
Objective Pairwise Comparison: 0.81																									
Standard Pairwise Comparison: 0.95																									

Table 5.7

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 Math Grade 5 Paper*

	Low		Medium		High		
	0		4.8			8	
5OBT.0.0							
5OBT.1.0							
5OBT.1.1	1(7)	37(8)					
5OBT.1.2	1(1)						
5OBT.1.3	51(8)						
5OBT.1.4							
5OBT.2.0							
5OBT.2.1	46(1)	48(3)	8(1)				
5OBT.2.2	33(8)	31(1)	48(1)				
5OBT.2.3	46(7)	44(8)	3(8)				
5OBT.2.4	35(8)						
5OBT.2.5	30(1)	29(2)	8(7)	21(7)	11(1)	48(4)	
5OBT.2.6	21(1)	16(8)	17(8)	19(8)	30(7)	26(2)	32(3)
5OBT.2.7	32(1)	26(1)	24(8)	28(8)	11(7)	47(1)	
5NF.0.0							
5NF.1.0							
5NF.1.1	43(8)	50(8)	9(3)	25(8)			
5NF.1.2	9(5)	52(8)					
5NF.1.3	23(1)	22(2)	26(5)	32(4)			
5NF.1.4	42(2)	29(4)	18(8)	4(1)	49(8)		
5NF.1.5	2(8)	29(2)					
5NF.1.6	4(7)	22(3)	23(7)				
5NF.1.7	22(3)	42(6)					
5MDG.0.0							
5MDG.1.0							

5MDG.1.1	47(7)						
5MDG.1.2	34(8)						
5MDG.1.3	41(8)	10(1)	7(6)				
5MDG.1.4	10(7)	36(8)					
5MDG.1.5	7(2)	6(7)	45(8)				
5MDG.2.0							
5MDG.2.1	5(1)	31(1)					
5MDG.2.2	31(6)	27(8)	5(7)	6(1)			
5MDG.2.3	20(7)						
5MDG.2.4	20(1)						

Table 5.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 5 Paper*

	Low	Medium	High
	1.6	4.8	8
1 10793	5OBT.1.1:7	5OBT.1.2:1	
2 10844	5NF.1.5:8		
3 10792	5OBT.2.3:8		
4 10863	5NF.1.4:1	5NF.1.6:7	
5 11526	5MDG.2.1:1	5MDG.2.2:7	
6 12223	5MDG.1.5:7	5MDG.2.2:1	
7 11106	5MDG.1.3:6	5MDG.1.5:2	
8 13324	5OBT.2.1:1	5OBT.2.5:7	
9 10849	5NF.1.1:3	5NF.1.2:5	
10 12221	5MDG.1.3:1	5MDG.1.4:7	
11 10795	5OBT.2.5:1	5OBT.2.7:7	
16 10803	5OBT.2.6:8		
17 10805	5OBT.2.6:8		
18 12090	5NF.1.4:8		
19 13059	5OBT.2.6:8		
20 10820	5MDG.2.3:7	5MDG.2.4:1	
21 13326	5OBT.2.5:7	5OBT.2.6:1	
22 11893	5NF.1.3:2	5NF.1.6:3	5NF.1.7:3
23 10858	5NF.1.3:1	5NF.1.6:7	
24 13068	5OBT.2.7:8		
25 10850	5NF.1.1:8		
26 11764	5OBT.2.6:2	5OBT.2.7:1	5NF.1.3:5
27 10823	5MDG.2.2:8		
28 10796	5OBT.2.7:8		
29 10869	5OBT.2.5:2	5NF.1.4:4	5NF.1.5:2
30 13055	5OBT.2.5:1	5OBT.2.6:7	
31 10798	5OBT.2.2:1	5MDG.2.1:1	5MDG.2.2:6
32 11710	5OBT.2.6:3	5OBT.2.7:1	5NF.1.3:4
33 13045	5OBT.2.2:8		
34 10811	5MDG.1.2:8		
35 13065	5OBT.2.4:8		
36 12198	5MDG.1.4:8		



37 10875	5OBT.1.1:8		
41 13067	5MDG.1.3:8		
42 13088	5NF.1.4:2	5NF.1.7:6	
43 13089	5NF.1.1:8		
44 13064	5OBT.2.3:8		
45 10833	5MDG.1.5:8		
46 13062	5OBT.2.1:1	5OBT.2.3:7	
47 10814	5OBT.2.7:1	5MDG.1.1:7	
48 13047	5OBT.2.1:3	5OBT.2.2:1	5OBT.2.5:4
49 12088	5NF.1.4:8		
50 10861	5NF.1.1:8		
51 10804	5OBT.1.3:8		
52 13329	5NF.1.2:8		

Table 5.9 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK]) AzMERIT 2017 Math Grade 5 Paper

Low DOK		Matched DOK		High DOK			
5OBT.0.0							
5OBT.1.0							
5OBT.1.1: [1]	1:(7)[1]	37:(8)[2]					
5OBT.1.2: [1]	1:(1)[1]						
5OBT.1.3: [2]	51:(8)[2]						
5OBT.1.4							
5OBT.2.0							
5OBT.2.1: [1]	8:(1)[2]	46:(1)[1]	48:(3)[1]				
5OBT.2.2: [1]	31:(1)[2]	33:(8)[1]	48:(1)[1]				
5OBT.2.3: [1]	3:(8)[1]	44:(8)[1]	46:(7)[1]				
5OBT.2.4: [1]	35:(8)[2]						
5OBT.2.5: [1]	8:(7)[1]	11:(1)[1]	21:(7)[1]	29:(2)[2]	30:(1)[1]	48:(4)[1]	
5OBT.2.6: [1]	16:(8)[1]	17:(8)[1]	19:(8)[1]	21:(1)[1]	26:(2)[2]	30:(7)[1]	32:(3)[1]
5OBT.2.7: [2]	11:(7)[1]	24:(8)[1]	26:(1)[2]	28:(8)[1]	32:(1)[1]	47:(1)[1]	
5NF.0.0							
5NF.1.0							
5NF.1.1: [1]	9:(3)[1]	25:(8)[1]	43:(8)[1]	50:(8)[2]			
5NF.1.2: [2]	9:(5)[1]	52:(8)[1]					
5NF.1.3: [2]	22:(2)[2]	23:(1)[2]	26:(5)[1]	32:(4)[2]			
5NF.1.4: [2]	4:(1)[2]	18:(8)[1]	29:(4)[1]	42:(2)[1]	49:(8)[1]		
5NF.1.5: [2]	2:(8)[1]	29:(2)[1]					
5NF.1.6: [2]	4:(7)[2]	22:(3)[1]	23:(7)[2]				
5NF.1.7: [2]	22:(3)[1]	42:(6)[1]					
5MDG.0.0							
5MDG.1.0							
5MDG.1.1: [2]	47:(7)[2]						
5MDG.1.2: [2]	34:(8)[2]						
5MDG.1.3: [1]	7:(6)[2]	10:(1)[2]	41:(8)[1]				
5MDG.1.4: [2]	10:(7)[1]	36:(8)[2]					
5MDG.1.5: [2]	6:(7)[2]	7:(2)[2]	45:(8)[1]				
5MDG.2.0							
5MDG.2.1: [1]	5:(1)[2]	31:(1)[1]					
5MDG.2.2: [2]	5:(7)[1]	6:(1)[2]	27:(8)[2]	31:(6)[2]			
5MDG.2.3: [2]	20:(7)[1]						
5MDG.2.4: [1]	20:(1)[2]						

## Mathematics Grade 6

Table 6.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 6 Paper*

*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
6RP.0.0 Ratio and Proportion	1	3.12	2	3	100	10.5	0.93	YES
6NS.0.0 The Number System	1	8	1 2	3 5	37.5 62.5	13.88	1.81	YES
6EE.0.0 Expressions and Equati...	1	9	1 2 3	5 3 1	55.56 33.33 11.11	14	1.31	YES
6GS.0.0 Geometry, Statistics a...	2	9	1 2	3 6	33.33 66.67	9	0.53	YES
Total	5	29.12	1 2 3	11 17 1	38 59 3	47.38	0.74	

Table 6.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 6 Paper*

*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds#	M	S.D	%Under	SD	%At	SD	%Above	SD	
6RP.0.0 Ratio and Proportion	1	3.12	10.5	0.93	65.42	7	34.58	7	0	0	NO
6NS.0.0 The Number System	1	8	13.88	1.81	39.58	11	58.12	8	2.3	4	YES
6EE.0.0 Expressions and Equati...	1	9	14	1.31	27.23	18	58.03	18	14.74	13	YES
6GS.0.0 Geometry, Statistics a...	2	9	9	0.53	51.49	18	48.51	18	0	0	WEAK
Total	5	29.12	47.38	0.74	43.8	7.2	51.19	5.3	5.01	4.2	

Table 6.3

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers

AzMERIT 2017 Math Grade 6 Paper

Number of Assessment Items - 47

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
6RP.0.0 Ratio and Proportion	1	3.12	10.5	0.93	2.62	0.92	83.33	25.2	YES	22	2	0.68	0.16	WEAK
6NS.0.0 The Number System	1	8	13.88	1.81	7.62	0.52	95.31	6.47	YES	29	4	0.85	0.03	YES
6EE.0.0 Expressions and Equati...	1	9	14	1.31	6.62	0.74	73.61	8.27	YES	30	3	0.77	0.05	YES
6GS.0.0 Geometry, Statistics a...	2	9	9	0.53	5.5	0.76	61.11	8.4	YES	19	1	0.82	0.04	YES
Total	5	29.12	47.38	0.74	5.6	2.16	78.34	15		25	5	0.78	0.07	

Table 6.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers AzMERIT 2017 Math Grade 6 Paper

Number of Assessment Items - 47

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
6RP.0.0 Ratio and Proportion	YES	NO	YES	WEAK
6NS.0.0 The Number System	YES	YES	YES	YES
6EE.0.0 Expressions and Equati...	YES	YES	YES	YES
6GS.0.0 Geometry, Statistics a...	YES	WEAK	YES	YES

Table 6.5  
*Depth-of-Knowledge Levels by Item and Reviewers*  
*Intraclass Correlation*  
*AzMERIT 2017 Math Grade 6 Paper*  
*Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8
1	1	1	1	1	2	2	2	1
2	1	1	1	1	1	1	1	1
3	1	1	2	1	1	1	1	1
4	1	2	2	2	1	1	1	1
5	1	1	1	1	2	1	2	1
6	1	1	2	1	1	1	1	1
7	1	2	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1
9	2	1	2	1	1	1	1	2
10	1	1	1	1	1	1	1	1
11	1	1	2	1	1	1	1	1
16	1	2	1	2	2	1	2	2
17	1	2	2	1	1	1	2	1
18	2	2	2	2	2	2	2	2
19	1	1	1	2	1	1	1	2
20	1	1	1	1	2	1	1	1
21	2	2	2	2	2	2	2	2
22	2	1	2	1	2	1	1	2
23	1	2	1	1	1	2	1	1
24	1	2	2	2	2	2	2	1
25	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1
28	1	1	1	1	2	1	1	1
29	1	2	1	2	2	2	2	1
30	1	1	2	1	2	1	2	1
31	1	1	1	1	2	1	1	2
32	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1
35	1	1	2	1	1	1	1	1
36	1	1	1	1	2	1	1	1
37	1	2	2	2	1	1	2	1
38	1	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1	1
43	1	2	1	1	1	1	2	1

44	2	2	1	2	1	1	1	1
45	1	2	1	1	1	1	1	1
46	2	2	2	2	2	2	2	2
47	1	1	1	1	1	1	1	1
48	1	2	2	2	2	1	1	2
49	1	2	1	2	1	1	2	2
50	1	1	1	1	1	1	1	1
51	2	2	2	2	2	2	2	2
52	1	1	1	1	1	1	1	1
53	1	2	2	2	1	1	1	2
54	2	2	1	2	2	2	1	2

*Intraclass correlation - .8552*

*Pairwise Comparison - 0.74*

Table 6.6  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 Math Grade 6 Paper*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	6RP.1.3			2	6RP.1.3			1	6RP.0.0			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3		
2	1	6RP.1.2			1	6RP.1.3			1	6RP.1.3			1	6NS.1.3			1	6RP.1.3			1	6RP.1.3			1	6NS.1.3		
3	1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			2	6GS.1.2		
4	1	6NS.1.4			1	6NS.1.4			1	6EE.1.3			2	6NS.1.4			2	6NS.1.4			1	6NS.1.4			2	6NS.1.4		
5	2	6GS.2.4			1	6GS.2.4			1	6GS.2.4			1	6GS.2.4			1	6GS.2.4			1	6GS.2.4			1	6GS.2.4		
6	1	6RP.1.2			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			2	6RP.1.3		
7	1	6EE.1.3			1	6EE.1.3			1	6EE.1.3			2	6EE.1.3			1	6EE.1.3			1	6EE.1.3			1	6EE.1.3		
8	1	6NS.1.1			1	6NS.1.1			1	6NS.1.1			1	6NS.1.1			1	6NS.1.1			1	6NS.1.1			1	6NS.1.1		
9	1	6NS.1.1			1	6RP.1.3			2	6NS.1.1			1	6NS.1.1			1	6NS.1.1			2	6NS.1.1			2	6NS.1.1		
10	1	6RP.1.2			1	6NS.1.2			1	6RP.1.3			1	6NS.1.2			1	6NS.1.2			1	6NS.1.3			1	6NS.1.2		
11	1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			1	6GS.1.2			2	6NS.1.2		
16	2	6EE.1.9			1	6EE.1.2	6EE.1.9		1	6EE.1.2			2	6RP.1.2			2	6RP.1.2			2	6EE.1.2			1	6RP.1.2		
17	1	6EE.1.3			1	6EE.1.4			1	6EE.1.3			2	6EE.1.1			1	6EE.1.1			1	6EE.1.3			2	6EE.1.4		
18	2	6RP.1.3			2	6RP.1.3			2	6RP.1.3			2	6RP.1.3			2	6RP.1.3			2	6RP.1.3			2	6RP.1.2		
19	1	6NS.1.5			1	6NS.1.5			1	6NS.1.5			1	6NS.1.5			2	6NS.1.6			2	6NS.1.5			1	6NS.1.5		
20	2	6RP.1.2			1	6RP.1.3	6RP.1.2		1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3			1	6RP.1.3		
21	2	6NS.1.7			2	6NS.1.7			2	6NS.1.7			2	6NS.1.7			2	6NS.1.7			2	6NS.1.7			2	6NS.1.7		
22	2	6EE.1.8			1	6EE.1.8			2	6EE.1.5			1	6EE.1.8			1	6EE.1.5			2	6NS.1.7			2	6EE.1.8		
23	1	6GS.2.5			2	6GS.2.5			1	6GS.2.5			2	6GS.2.5			1	6GS.2.5			1	6GS.2.5			1	6GS.2.5		
24	2	6GS.2.4			2	6GS.2.4			1	6GS.2.4			2	6GS.2.4			2	6GS.2.4			1	6GS.2.4			2	6GS.2.4		

25	1	6EE.1.8		1	6EE.1.8		1	6EE.1.8		1	6EE.1.8		1	6EE.1.8		1	6NS.1.6		1	6EE.1.8		1	6EE.1.8		
26	1	6EE.1.6		1	6NS.1.6		1	6NS.1.6		1	6NS.1.6		1	6NS.1.6		1	6EE.1.5		1	6NS.1.6		1	6NS.1.6		
27	1	6EE.1.2		1	6EE.1.2		1	6EE.1.1		1	6EE.1.2		1	6EE.1.1		1	6EE.1.1		1	6EE.1.2		1	6EE.1.2		
28	2	6NS.1.8		1	6NS.1.8		1	6NS.1.8		1	6NS.1.8		1	6NS.1.8		1	6NS.1.8		1	6NS.1.8		1	6NS.1.8		
29	2	6GS.2.4		2	6GS.2.4		1	6GS.2.5		2	6GS.2.5		2	6GS.2.4		1	6GS.2.5		1	6GS.2.4		2	6GS.2.5	6GS.2.4	
30	2	6NS.1.5		1	6NS.1.6		1	6NS.1.6		1	6EE.1.5		1	6EE.1.5		1	6EE.1.5		2	6NS.1.6		2	6NS.1.5		
31	2	6EE.1.9		1	6EE.1.2		1	6EE.1.2		1	6EE.1.6		1	6EE.1.6		2	6EE.1.2		1	6EE.1.2		1	6EE.1.6		
32	1	6RP.1.1		1	6RP.1.2		1	6RP.1.1		1	6RP.1.1		1	6RP.1.1		1	6RP.1.3		1	6RP.1.1		1	6RP.1.2		
33	1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		1	6NS.1.3		
34	1	6EE.1.9		1	6EE.1.2		1	6EE.1.2		1	6EE.1.6		1	6EE.1.6		1	6EE.1.2		1	6EE.1.2		1	6NS.1.6		
35	1	6NS.1.1		1	6NS.1.3		1	6NS.1.1		1	6NS.1.1		1	6NS.1.1		1	6NS.1.1		2	6NS.1.1		1	6NS.1.3		
36	2	6GS.2.5		1	6GS.2.3		1	6GS.2.2		1	6GS.2.5		1	6GS.2.5		1	6GS.2.3		1	6GS.2.3		1	6GS.2.3		
37	1	6GS.1.1		1	6GS.1.1		1	6GS.1.1		2	6GS.1.1		2	6GS.1.1		1	6GS.1.1		2	6GS.1.1		2	6GS.1.1		
38	1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6NS.1.3		1	6RP.1.3		
39	1	6NS.1.7		1	6NS.1.7		1	6NS.1.5		1	6NS.1.6		1	6NS.1.6		1	6NS.1.5		1	6NS.1.7		1	6NS.1.7		
43	1	6EE.1.2		1	6EE.1.2		1	6EE.1.5		2	6EE.1.2		1	6EE.1.2		1	6EE.1.2		1	6EE.1.2		2	6EE.1.2		
44	1	6EE.1.4		1	6EE.1.3		2	6EE.1.3		2	6EE.1.4		2	6EE.1.4		1	6EE.1.4		1	6EE.1.4		1	6EE.1.3		
45	1	6EE.1.8		1	6EE.1.5		1	6EE.1.5		2	6EE.1.5		1	6EE.1.5		1	6EE.1.5		1	6EE.1.6		1	6EE.1.5		
46	2	6GS.1.4		2	6GS.1.4		2	6GS.1.4		2	6GS.1.4		2	6NS.1.4		2	6GS.1.4		2	6GS.1.4		2	6GS.1.4		
47	1	6EE.1.7		1	6EE.1.5		1	6EE.1.5		1	6EE.1.2		1	6EE.1.2		1	6EE.1.2		1	6EE.1.2		1	6EE.1.7		
48	2	6NS.1.8		1	6EE.1.8		1	6NS.1.8		2	6NS.1.8		2	6NS.1.8		2	6NS.1.8		2	6NS.1.8		1	6NS.1.8		
49	1	6EE.1.9		1	6EE.1.9		1	6EE.1.9		2	6EE.1.2		2	6EE.1.2		2	6EE.1.7		1	6EE.1.2		2	6EE.1.7		
50	1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		1	6NS.1.2		
51	2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		
52	1	6RP.1.2		1	6RP.1.3		1	6RP.1.2		1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6RP.1.3		1	6RP.1.2		
53	1	6EE.1.6		1	6EE.1.6		1	6EE.1.6		2	6EE.1.6		2	6GS.1.1		2	6EE.1.6		2	6EE.1.3		1	6EE.1.6		



54	2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		2	6RP.1.3		1	6RP.1.3		1	6RP.1.3		
Objective Pairwise Comparison: 0.64																									
Standard Pairwise Comparison: 0.88																									

Table 6.7

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

AzMERIT 2017 Math Grade 6 Paper

	Low			Medium					High			
	0				4.8					8		
6RP.0.0	1(1)											
6RP.1.0												
6RP.1.1	32(5)											
6RP.1.2	32(2)	18(1)	6(2)	2(1)	10(1)	16(3)	52(3)	20(2)				
6RP.1.3	52(5)	51(8)	54(8)	38(7)	20(7)	10(2)	9(1)	2(4)	6(6)	1(7)	18(7)	32(1)
6NS.0.0												
6NS.1.0												
6NS.1.1	35(6)	8(8)	9(7)									
6NS.1.2	10(4)	11(1)	50(8)									
6NS.1.3	38(1)	10(1)	2(3)	35(2)	33(8)							
6NS.1.4	4(7)	46(1)										
6NS.1.5	39(2)	30(2)	19(7)									
6NS.1.6	19(1)	25(1)	26(6)	30(3)	34(1)	39(2)						
6NS.1.7	39(4)	21(8)	22(2)									
6NS.1.8	28(8)	48(7)										
6EE.0.0												
6EE.1.0												
6EE.1.1	17(2)	27(3)										
6EE.1.2	27(5)	34(4)	31(4)	16(3)	49(3)	47(4)	43(7)					
6EE.1.3	44(3)	53(1)	4(1)	7(8)	17(4)							
6EE.1.4	17(2)	44(5)										
6EE.1.5	45(6)	43(1)	47(2)	26(1)	30(3)	22(2)						
6EE.1.6	16(1)	34(2)	31(3)	26(1)	45(1)	53(6)						
6EE.1.7	47(2)	49(2)										
6EE.1.8	48(1)	45(1)	25(7)	22(4)								

6EE.1.9	31(1)	34(1)	49(3)	16(2)								
6GS.0.0												
6GS.1.0												
6GS.1.1	53(1)	37(8)										
6GS.1.2	11(7)	3(8)										
6GS.1.3												
6GS.1.4	46(7)											
6GS.2.0												
6GS.2.1												
6GS.2.2	36(1)											
6GS.2.3	36(4)											
6GS.2.4	24(8)	5(8)	29(5)									
6GS.2.5	23(8)	29(4)	36(3)									

Table 6.8

Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)  
 AzMERIT 2017 Math Grade 6 Paper

	Low	Medium	High
	1.6	4.8	8
1 9492	6RP.0.0:1	6RP.1.3:7	
2 11643	6RP.1.2:1	6RP.1.3:4	6NS.1.3:3
3 12055	6GS.1.2:8		
4 10136	6NS.1.4:7	6EE.1.3:1	
5 10047	6GS.2.4:8		
6 10107	6RP.1.2:2	6RP.1.3:6	
7 11774	6EE.1.3:8		
8 10050	6NS.1.1:8		
9 11375	6RP.1.3:1	6NS.1.1:7	
10 11728	6RP.1.2:1	6RP.1.3:2	6NS.1.2:4 6NS.1.3:1
11 10123	6NS.1.2:1	6GS.1.2:7	
16 10108	6RP.1.2:3	6EE.1.2:3	6EE.1.6:1 6EE.1.9:2
17 13795	6EE.1.1:2	6EE.1.3:4	6EE.1.4:2
18 10078	6RP.1.2:1	6RP.1.3:7	
19 10064	6NS.1.5:7	6NS.1.6:1	
20 13330	6RP.1.2:2	6RP.1.3:7	
21 10149	6NS.1.7:8		
22 12345	6NS.1.7:2	6EE.1.5:2	6EE.1.8:4
23 11531	6GS.2.5:8		
24 10142	6GS.2.4:8		
25 10115	6NS.1.6:1	6EE.1.8:7	
26 11904	6NS.1.6:6	6EE.1.5:1	6EE.1.6:1
27 10100	6EE.1.1:3	6EE.1.2:5	
28 10144	6NS.1.8:8		
29 11525	6GS.2.4:5	6GS.2.5:4	
30 10139	6NS.1.5:2	6NS.1.6:3	6EE.1.5:3
31 13117	6EE.1.2:4	6EE.1.6:3	6EE.1.9:1
32 10054	6RP.1.1:5	6RP.1.2:2	6RP.1.3:1
33 13111	6NS.1.3:8		
34 12050	6NS.1.6:1	6EE.1.2:4	6EE.1.6:2 6EE.1.9:1
35 11376	6NS.1.1:6	6NS.1.3:2	
36 10127	6GS.2.2:1	6GS.2.3:4	6GS.2.5:3

37 10122	6GS.1.1:8		
38 10087	6RP.1.3:7	6NS.1.3:1	
39 10148	6NS.1.5:2	6NS.1.6:2	6NS.1.7:4
43 11903	6EE.1.2:7	6EE.1.5:1	
44 10048	6EE.1.3:3	6EE.1.4:5	
45 10093	6EE.1.5:6	6EE.1.6:1	6EE.1.8:1
46 10113	6NS.1.4:1	6GS.1.4:7	
47 10082	6EE.1.2:4	6EE.1.5:2	6EE.1.7:2
48 10143	6NS.1.8:7	6EE.1.8:1	
49 10095	6EE.1.2:3	6EE.1.7:2	6EE.1.9:3
50 13110	6NS.1.2:8		
51 12082	6RP.1.3:8		
52 13331	6RP.1.2:3	6RP.1.3:5	
53 9718	6EE.1.3:1	6EE.1.6:6	6GS.1.1:1
54 10062	6RP.1.3:8		

Table 6.9

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*  
*AzMERIT 2017 Math Grade 6 Paper*

Low DOK		Matched DOK		High DOK

6RP.0.0 : [2]	1:(1)[1]											
6RP.1.0												
6RP.1.1 : [2]	32:(5)[1]											
6RP.1.2 : [2]	2:(1)[1]	6:(2)[1]	10:(1)[1]	16:(3)[2]	18:(1)[2]	20:(2)[2]	32:(2)[1]	52:(3)[1]				
6RP.1.3 : [2]	1:(7)[1]	2:(4)[1]	6:(6)[1]	9:(1)[1]	10:(2)[1]	18:(7)[2]	20:(7)[1]	32:(1)[1]	38:(7)[1]	51:(8)[2]	52:(5)[1]	54:(8)[2]
6NS.0.0												
6NS.1.0												
6NS.1.1 : [2]	8:(8)[1]	9:(7)[1]	35:(6)[1]									
6NS.1.2 : [1]	10:(4)[1]	11:(1)[2]	50:(8)[1]									
6NS.1.3 : [1]	2:(3)[1]	10:(1)[1]	33:(8)[1]	35:(2)[1]	38:(1)[1]							
6NS.1.4 : [2]	4:(7)[1]	46:(1)[2]										
6NS.1.5 : [2]	19:(7)[1]	30:(2)[2]	39:(2)[1]									
6NS.1.6 : [1]	19:(1)[2]	25:(1)[1]	26:(6)[1]	30:(3)[1]	34:(1)[1]	39:(2)[1]						
6NS.1.7 : [2]	21:(8)[2]	22:(2)[2]	39:(4)[1]									
6NS.1.8 : [2]	28:(8)[1]	48:(7)[2]										
6EE.0.0												
6EE.1.0												
6EE.1.1 : [1]	17:(2)[2]	27:(3)[1]										
6EE.1.2 : [1]	16:(3)[1]	27:(5)[1]	31:(4)[1]	34:(4)[1]	43:(7)[1]	47:(4)[1]	49:(3)[2]					
6EE.1.3 : [1]	4:(1)[1]	7:(8)[1]	17:(4)[1]	44:(3)[1]	53:(1)[2]							
6EE.1.4 : [1]	17:(2)[2]	44:(5)[1]										
6EE.1.5 : [1]	22:(2)[2]	26:(1)[1]	30:(3)[1]	43:(1)[1]	45:(6)[1]	47:(2)[1]						
6EE.1.6 : [2]	16:(1)[2]	26:(1)[1]	31:(3)[1]	34:(2)[1]	45:(1)[1]	53:(6)[1]						
6EE.1.7 : [2]	47:(2)[1]	49:(2)[2]										
6EE.1.8 : [2]	22:(4)[2]	25:(7)[1]	45:(1)[1]	48:(1)[1]								
6EE.1.9 : [3]	16:(2)[2]	31:(1)[2]	34:(1)[1]	49:(3)[1]								
6GS.0.0												
6GS.1.0												
6GS.1.1 : [2]	37:(8)[2]	53:(1)[2]										

6GS.1.2 : [2]	3:(8)[1]	11:(7)[1]										
6GS.1.3												
6GS.1.4 : [2]	46:(7)[2]											
6GS.2.0												
6GS.2.1												
6GS.2.2 : [1]	36:(1)[1]											
6GS.2.3 : [1]	36:(4)[1]											
6GS.2.4 : [2]	5:(8)[1]	24:(8)[2]	29:(5)[2]									
6GS.2.5 : [2]	23:(8)[1]	29:(4)[2]	36:(3)[1]									

## Mathematics Grade 7

Table 7.1-1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 7 Paper*  
*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
7RP.0.0 Ratio and Proportion	1	3	1 2	1 2	33.33 66.67	9.88	1.55	YES
7NS.0.0 The Number System	1	3.88	2	3	100	12.38	1.6	YES
7EE.0.0 Expressions and Equati...	1	4.12	1 2	1 3	25 75	8.88	1.89	YES
7GS.0.0 Geometry, Statistics a...	2	13.38	1 2 3	1 9 3	7.69 69.23 23.08	15.88	0.35	YES
Total	5	24.38	1 2 3	3 17 3	13 74 13	47.02	0	

Table 7.2-1

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 7 Paper*  
*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
7RP.0.0 Ratio and Proportion	1	3	9.88	1.55	24.05	20	73.68	19	2.27	4	YES
7NS.0.0 The Number System	1	3.88	12.38	1.6	69.18	11	30.82	11	0	0	NO
7EE.0.0 Expressions and Equati...	1	4.12	8.88	1.89	28.93	11	67.94	16	3.12	9	YES
7GS.0.0 Geometry, Statistics a...	2	13.38	15.88	0.35	43.28	6	55.16	6	1.56	3	YES
Total	5	24.38	47.02	0	43.09	8.2	55.32	7.2	1.6	2.2	



*Table 7.3-1*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 7 Paper*

*Number of Assessment Items - 47*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
7RP.0.0 Ratio and Proportion	1	3	9.88	1.55	2.88	0.35	95.83	11.79	YES	21	3	0.79	0.05	YES
7NS.0.0 The Number System	1	3.88	12.38	1.6	3.88	0.35	100	0	YES	26	3	0.8	0.05	YES
7EE.0.0 Expressions and Equati...	1	4.12	8.88	1.89	4	0.53	96.88	8.84	YES	19	4	0.83	0.08	YES
7GS.0.0 Geometry, Statistics a...	2	13.38	15.88	0.35	10.62	0.92	79.4	5.49	YES	34	1	0.8	0.02	YES
Total	5	24.38	47.02	0	5.3	3.56	93.03	9		25	7	0.8	0.02	

*Table 7.4-1*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 7 Paper*

*Number of Assessment Items - 47*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7RP.0.0 Ratio and Proportion	YES	YES	YES	YES
7NS.0.0 The Number System	YES	NO	YES	YES
7EE.0.0 Expressions and Equati...	YES	YES	YES	YES
7GS.0.0 Geometry, Statistics a...	YES	YES	YES	YES

Table 7.5-1 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation AzMERIT 2017 Math Grade 7 Paper Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8
1	1	1	1	1	1	1	1	1
2	1	1	2	1	1	1	1	1
3	2	2	2	2	2	2	2	2
4	1	1	1	1	1	1	1	1
5	2	2	2	2	2	2	2	2
6	2	2	2	2	2	2	1	1
7	2	2	2	2	2	2	1	2
8	1	1	2	1	1	1	1	1
9	1	1	1	1	1	1	1	1
10	2	2	2	1	2	2	2	2
11	2	2	2	2	2	2	2	2
16	1	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2	2
18	2	2	2	2	2	2	2	2
19	1	1	2	1	1	1	1	1
20	2	2	2	2	2	2	2	2
21	1	2	2	2	2	2	1	2
22	2	2	2	2	2	1	1	2
23	1	1	1	1	1	2	1	2
24	2	2	2	2	2	2	2	2
25	1	2	2	2	2	2	1	2
26	1	1	1	2	2	1	1	1
27	2	2	1	1	2	2	1	2
28	1	1	1	1	1	1	1	1
29	2	2	2	2	2	2	1	1
30	1	2	2	2	2	2	2	2
31	1	1	1	1	1	1	1	1
32	1	2	2	2	2	2	2	2
33	2	2	2	2	2	2	2	2
34	1	1	1	1	1	1	1	1
35	1	1	2	1	1	1	1	1
36	1	2	1	1	1	1	1	1
37	1	1	1	1	1	1	1	1
38	2	2	2	2	2	2	2	2
39	1	2	2	2	2	2	1	2
43	1	1	2	1	1	1	1	1
44	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1
46	1	1	1	1	2	1	1	2
47	2	2	2	1	2	2	2	2
48	1	1	2	1	1	1	1	1
49	1	2	2	2	2	2	2	2
50	1	1	1	1	2	1	1	1
51	1	2	2	2	2	1	1	2
52	2	2	2	2	2	2	2	2
53	1	1	1	1	1	1	1	1
54	1	2	2	2	1	1	2	2

Intraclass correlation - .963

Pairwise Comparison - 0.8

Table 7.6-1

*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 Math Grade 7 Paper*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3		
2	1	7RP.1.1			1	7RP.1.1			1	7RP.1.1			1	7RP.1.1			1	7RP.1.2			1	7RP.1.1			2	7RP.1.1			1	7RP.1.1		
3	2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3		
4	1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1		
5	2	7NS.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3		
6	2	7NS.1.3			2	7NS.1.3			2	7NS.1.3			2	7EE.1.3			2	7EE.1.3			1	7NS.1.1			2	7NS.1.3			1	7NS.1.3		
7	2	7RP.1.3			2	7RP.1.3			2	7EE.1.3			2	7EE.1.3			2	7RP.1.3			2	7NS.1.3			2	7RP.1.3			1	7RP.1.3		
8	1	7EE.1.1			1	7EE.1.1			1	7EE.1.1			1	7EE.1.1			1	7EE.1.1			1	7EE.1.1			2	7EE.1.1			1	7EE.1.1		
9	1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5		
10	2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			1	7NS.1.3			2	7NS.1.3			2	7EE.1.4			2	7NS.1.3		
11	2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3		
16	2	7RP.1.2			2	7RP.1.1			1	7NS.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2		
17	2	7GS.1.6			2	7GS.1.6			2	7GS.1.6			2	7GS.1.6			2	7GS.1.4			2	7GS.1.6			2	7GS.1.6			2	7GS.1.6		
18	2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2		
19	1	7NS.1.3			1	7NS.1.3			1	7NS.1.3			1	7NS.1.3			1	7NS.1.3			1	7NS.1.3			2	7NS.1.3			1	7NS.1.3		
20	2	7GS.1.1			2	7GS.1.1			2	7GS.1.2			2	7GS.1.1			2	7GS.1.1			2	7RP.1.3			2	7GS.1.1			2	7GS.1.1		
21	2	7RP.1.3			2	7RP.1.3			1	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7NS.1.3			2	7RP.1.3			1	7RP.1.3		
22	2	7RP.1.2			1	7RP.1.2			2	7EE.1.4			2	7RP.1.2			2	7RP.1.2			2	7EE.1.4			2	7RP.1.2			1	7EE.1.4		
23	1	7GS.1.4			2	7GS.1.4			1	7GS.1.4			1	7GS.1.4			1	7GS.1.4			2	7GS.1.4			1	7GS.1.4			1	7GS.1.4		
24	2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4		
25	2	7RP.1.2			2	7RP.1.2			1	7EE.1.4			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			1	7RP.1.2		
26	2	7GS.2.7			1	7GS.2.7			1	7GS.2.0			1	7GS.2.0			2	7GS.2.5			1	7GS.2.0			1	7GS.2.7			1	7GS.2.7		
27	2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			1	7EE.1.1			2	7EE.1.4			1	7EE.1.4			1	7EE.1.4		
28	1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7EE.1.2			1	7NS.1.2		
29	2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			1	7RP.1.2			2	7RP.1.2			1	7RP.1.2		
30	2	7GS.2.7			2	7GS.2.7			1	7GS.2.7			2	7GS.2.7			2	7GS.2.7			2	7GS.2.7			2	7GS.2.7			2	7GS.2.7		
31	1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2		
32	2	7GS.1.5			2	7GS.1.5			1	7GS.1.5			2	7GS.1.5			2	7GS.1.5			2	7GS.1.5			2	7GS.1.5			2	7GS.1.5		
33	2	7GS.2.1			2	7GS.2.1			2	7GS.2.1			2	7GS.2.1			2	7GS.2.1			2	7GS.2.1			2	7GS.2.1			2	7GS.2.1		
34	1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2		
35	1	7GS.1.6			1	7GS.1.6			1	7GS.1.6			1	7GS.1.4			1	7GS.1.4			1	7GS.1.6			2	7GS.1.6			1	7GS.1.6		
36	1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			2	7GS.2.5			1	7GS.2.5			1	7GS.2.2			1	7GS.2.5			1	7GS.2.5		
37	1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2			1	7NS.1.2		
38	2	7GS.2.4			2	7GS.2.4			2	7GS.2.4			2	7GS.2.4			2	7GS.2.4			2	7GS.2.4			2	7GS.2.4			2	7GS.2.4		

39	2	7NS.1.1		2	7NS.1.1		1	7NS.1.1		2	7NS.1.1		2	7NS.1.1		2	7NS.1.1		2	7NS.1.1		1	7NS.1.1	
43	1	7RP.1.2		1	7RP.1.2		1	7RP.1.2		1	7RP.1.2		1	7RP.1.2		1	7RP.1.2		2	7RP.1.2		1	7RP.1.2	
44	1	7NS.1.2		1	7NS.1.2		1	7NS.1.2		1	7NS.1.2		1	7NS.1.2		1	7NS.1.2		1	7NS.1.2		1	7NS.1.2	
45	1	7EE.1.2		1	7EE.1.2		1	7EE.1.2		1	7EE.1.2		1	7EE.1.2		1	7NS.1.2		1	7NS.1.2		1	7EE.1.2	
46	2	7GS.1.6		1	7GS.1.6		1	7GS.1.6		1	7GS.1.6		1	7GS.1.6		2	7GS.1.6		1	7GS.1.6		1	7GS.1.6	
47	2	7NS.0.0		2	7NS.0.0		2	7NS.0.0		2	7NS.0.0		1	7NS.0.0		2	7NS.0.0		2	7NS.0.0		2	7EE.1.2	
48	1	7EE.1.1		1	7EE.1.1		1	7EE.1.1		1	7EE.1.1		1	7EE.1.1		1	7EE.1.1		2	7EE.1.1		1	7EE.1.1	
49	2	7GS.2.7		2	7GS.2.7		1	7GS.2.0		2	7GS.2.7		2	7GS.2.6		2	7GS.2.0		2	7GS.2.6		2	7GS.2.7	
50	2	7NS.1.1		1	7NS.1.1		1	7EE.1.3		1	7NS.1.1		1	7NS.1.1		1	7NS.1.1		1	7NS.1.1		1	7NS.1.3	
51	2	7RP.1.2		1	7RP.1.2		1	7RP.1.2		2	7RP.1.2		2	7RP.1.2		2	7EE.1.3		2	7RP.1.2		1	7RP.1.2	
52	2	7NS.1.3		2	7NS.1.3		2	7NS.1.3		2	7NS.1.3		2	7NS.1.3		2	7NS.1.3		2	7NS.1.3		2	7NS.1.3	
53	1	7NS.1.1		1	7NS.1.1		1	7EE.0.0		1	7NS.1.1		1	7NS.1.1		1	7NS.1.1		1	7NS.1.1		1	7NS.1.1	
54	1	7GS.2.3		1	7GS.2.4		1	7GS.2.3		2	7GS.2.3		2	7GS.2.3		2	7GS.2.3		2	7GS.2.3		2	7GS.2.3	

Objective Pairwise Comparison: 0.81

Standard Pairwise Comparison: 0.89

Table 7.7-1 *Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers) AzMERIT 2017 Math Grade 7 Paper*

	Low		Medium			High		
	0		4.8				8	
7RP.0.0								
7RP.1.0								
7RP.1.1	2(7)	16(1)						
7RP.1.2	16(6)	2(1)	22(5)	25(7)	29(8)	43(8)	51(7)	
7RP.1.3	3(8)	7(5)	11(8)	20(1)	21(7)			
7NS.0.0	47(7)							
7NS.1.0								
7NS.1.1	50(6)	53(7)	6(1)	39(8)				
7NS.1.2	28(7)	37(8)	31(8)	34(8)	16(1)	44(8)	45(2)	
7NS.1.3	50(1)	52(8)	10(3)	21(1)	19(8)	6(5)	7(1)	5(1)
7EE.0.0	53(1)							
7EE.1.0								
7EE.1.1	48(8)	8(8)	27(1)					
7EE.1.2	28(1)	47(1)	45(6)					
7EE.1.3	50(1)	51(1)	7(2)	6(2)	5(7)	1(8)		
7EE.1.4	10(5)	27(7)	24(8)	25(1)	22(3)			
7GS.0.0								
7GS.1.0								
7GS.1.1	20(6)	4(8)						
7GS.1.2	20(1)	18(8)						
7GS.1.3								
7GS.1.4	17(1)	23(8)	35(2)					
7GS.1.5	32(8)							
7GS.1.6	35(6)	17(7)	46(8)					
7GS.2.0	49(2)	26(3)						
7GS.2.1	33(8)							
7GS.2.2	36(1)							
7GS.2.3	54(7)							
7GS.2.4	54(1)	38(8)						
7GS.2.5	36(7)	26(1)	9(8)					
7GS.2.6	49(2)							
7GS.2.7	49(4)	26(4)	30(8)					

Table 7.8-1

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 7 Paper*

Low		Medium		High	
1.6		4.8		8	
1 12422	7EE.1.3:8				
2 10324	7RP.1.1:7		7RP.1.2:1		
3 10347	7RP.1.3:8				
4 8698	7GS.1.1:8				
5 10315	7NS.1.3:1		7EE.1.3:7		
6 10701	7NS.1.1:1		7NS.1.3:5	7EE.1.3:2	
7 11300	7RP.1.3:5		7NS.1.3:1	7EE.1.3:2	
8 13144	7EE.1.1:8				
9 12915	7GS.2.5:8				
10 12929	7NS.1.3:3		7EE.1.4:5		
11 13136	7RP.1.3:8				
16 10350	7RP.1.1:1		7RP.1.2:6	7NS.1.2:1	
17 11972	7GS.1.4:1		7GS.1.6:7		
18 11719	7GS.1.2:8				
19 10322	7NS.1.3:8				
20 9529	7RP.1.3:1		7GS.1.1:6	7GS.1.2:1	
21 10355	7RP.1.3:7		7NS.1.3:1		
22 13803	7RP.1.2:5		7EE.1.4:3		
23 10339	7GS.1.4:8				
24 13805	7EE.1.4:8				
25 11332	7RP.1.2:7		7EE.1.4:1		
26 13146	7GS.2.0:3		7GS.2.5:1	7GS.2.7:4	
27 10344	7EE.1.1:1		7EE.1.4:7		
28 12201	7NS.1.2:7		7EE.1.2:1		
29 11348	7RP.1.2:8				
30 10377	7GS.2.7:8				
31 10308	7NS.1.2:8				
32 10310	7GS.1.5:8				
33 11586	7GS.2.1:8				
34 10309	7NS.1.2:8				
35 12423	7GS.1.4:2		7GS.1.6:6		
36 9720	7GS.2.2:1		7GS.2.5:7		

37 13798	7NS.1.2:8		
38 11580	7GS.2.4:8		
39 9703	7NS.1.1:8		
43 10331	7RP.1.2:8		
44 10289	7NS.1.2:8		
45 10370	7NS.1.2:2	7EE.1.2:6	
46 9504	7GS.1.6:8		
47 12848	7NS.0.0:7	7EE.1.2:1	
48 10349	7EE.1.1:8		
49 10376	7GS.2.0:2	7GS.2.6:2	7GS.2.7:4
50 12218	7NS.1.1:6	7NS.1.3:1	7EE.1.3:1
51 10303	7RP.1.2:7	7EE.1.3:1	
52 9508	7NS.1.3:8		
53 13128	7NS.1.1:7	7EE.0.0:1	
54 13334	7GS.2.3:7	7GS.2.4:1	

Table 7.9-1 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK]) AzMERIT 2017 Math Grade 7 Paper

Low DOK		Matched DOK		High DOK

7RP.0.0								
7RP.1.0								
7RP.1.1: [1]	2:(7)[1]	16:(1)[2]						
7RP.1.2: [2]	2:(1)[1]	16:(6)[2]	22:(5)[2]	25:(7)[2]	29:(8)[2]	43:(8)[1]	51:(7)[2]	
7RP.1.3: [2]	3:(8)[2]	7:(5)[2]	11:(8)[2]	20:(1)[2]	21:(7)[2]			
7NS.0.0: [2]	47:(7)[2]							
7NS.1.0								
7NS.1.1: [2]	6:(1)[1]	39:(8)[2]	50:(6)[1]	53:(7)[1]				
7NS.1.2: [2]	16:(1)[1]	28:(7)[1]	31:(8)[1]	34:(8)[1]	37:(8)[1]	44:(8)[1]	45:(2)[1]	
7NS.1.3: [2]	5:(1)[2]	6:(5)[2]	7:(1)[2]	10:(3)[2]	19:(8)[1]	21:(1)[2]	50:(1)[1]	52:(8)[2]
7EE.0.0: [2]	53:(1)[1]							
7EE.1.0								
7EE.1.1: [1]	8:(8)[1]	27:(1)[1]	48:(8)[1]					
7EE.1.2: [2]	28:(1)[1]	45:(6)[1]	47:(1)[2]					
7EE.1.3: [2]	1:(8)[1]	5:(7)[2]	6:(2)[2]	7:(2)[2]	50:(1)[1]	51:(1)[2]		
7EE.1.4: [2]	10:(5)[2]	22:(3)[2]	24:(8)[2]	25:(1)[1]	27:(7)[2]			
7GS.0.0								
7GS.1.0								
7GS.1.1: [2]	4:(8)[1]	20:(6)[2]						
7GS.1.2: [2]	18:(8)[2]	20:(1)[2]						
7GS.1.3								
7GS.1.4: [2]	17:(1)[2]	23:(8)[1]	35:(2)[1]					
7GS.1.5: [2]	32:(8)[2]							
7GS.1.6: [2]	17:(7)[2]	35:(6)[1]	46:(8)[1]					
7GS.2.0: [2]	26:(3)[1]	49:(2)[2]						
7GS.2.1: [2]	33:(8)[2]							
7GS.2.2: [3]	36:(1)[1]							
7GS.2.3: [2]	54:(7)[2]							
7GS.2.4: [2]	38:(8)[2]	54:(1)[1]						
7GS.2.5: [1]	9:(8)[1]	26:(1)[2]	36:(7)[1]					
7GS.2.6: [3]	49:(2)[2]							
7GS.2.7: [3]	26:(4)[1]	30:(8)[2]	49:(4)[2]					



Table 7.1-2

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*  
*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
7RP.0.0 Ratio and Proportion	1	3	1 2	1 2	33.33 66.67	11	1.12	YES
7NS.0.0 The Number System	1	4	2	3	100	12.11	1.05	YES
7EE.0.0 Expressions and Equati...	1	4	1 2	1 3	25 75	8.44	0.73	YES
7GS.0.0 Geometry, Statistics a...	2	13	1 2 3	1 9 3	7.69 69.23 23.08	15.67	0.5	YES
Total	5	24	1 2 3	3 17 3	13 74 13	47.22	0.44	

Table 7.2-2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*  
*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	% Under	SD	% At	SD	% Above	SD	
7RP.0.0 Ratio and Proportion	1	3	11	1.12	9.11	11	87.25	10	3.65	6	YES
7NS.0.0 The Number System	1	4	12.11	1.05	55.61	12	41.61	13	2.78	6	WEAK
7EE.0.0 Expressions and Equati...	1	4	8.44	0.73	21.05	8	67.04	8	11.91	1	YES
7GS.0.0 Geometry, Statistics a...	2	13	15.67	0.5	38.98	6	57.45	9	3.56	5	YES
Total	5	24	47.22	0.44	33.18	6.8	61.88	6.4	4.94	3.5	

*Table 7.3-2*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*

*Number of Assessment Items - 47*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
7RP.0.0 Ratio and Proportion	1	3	11	1.12	2.89	0.33	96.3	11.11	YES	23	2	0.81	0.08	YES
7NS.0.0 The Number System	1	4	12.11	1.05	4	0	100	0	YES	26	2	0.83	0.02	YES
7EE.0.0 Expressions and Equati...	1	4	8.44	0.73	4	0	100	0	YES	18	1	0.85	0.03	YES
7GS.0.0 Geometry, Statistics a...	2	13	15.67	0.5	9.67	0.5	74.36	3.85	YES	33	1	0.79	0.02	YES
Total	5	24	47.22	0.44	5.1	3.06	92.66	12		25	6	0.82	0.03	

*Table 7.4-2*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers*

*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*

*Number of Assessment Items - 47*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7RP.0.0 Ratio and Proportion	YES	YES	YES	YES
7NS.0.0 The Number System	YES	WEAK	YES	YES
7EE.0.0 Expressions and Equati...	YES	YES	YES	YES
7GS.0.0 Geometry, Statistics a...	YES	YES	YES	YES

Table 7.5-2 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation*  
*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8	Reviewer 9
1	1	1	1	1	1	1	1	1	2
2	2	1	1	1	1	1	1	1	2
3	2	2	2	2	2	2	2	2	2
4	2	1	1	1	1	1	1	1	2
5	2	1	2	2	2	2	2	2	2
6	2	2	2	2	1	2	2	2	2
7	2	2	2	2	2	2	1	2	2
8	2	2	1	2	2	2	2	2	2
9	1	1	1	1	1	1	1	1	1
10	2	2	2	2	2	2	2	2	2
11	2	2	2	1	2	2	1	2	2
16	2	2	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2	3	2
18	2	2	2	2	2	2	2	2	2
19	2	1	2	1	2	2	2	1	1
20	2	2	2	2	3	2	2	3	2
21	2	2	2	2	2	2	2	2	2
22	2	2	2	2	2	2	2	2	1
23	1	1	1	1	1	2	1	1	2
24	2	2	2	2	2	2	2	2	2
25	2	2	2	1	2	2	2	2	2
26	1	1	2	2	2	2	2	2	1
27	1	2	2	1	2	2	1	2	2
28	1	1	1	1	1	2	1	1	1
29	2	1	2	2	2	2	2	2	2
30	2	1	2	2	2	2	2	2	2
31	1	1	1	2	1	2	1	1	1
32	2	2	2	1	2	2	2	1	1
33	2	2	2	2	2	2	2	2	1
34	1	1	1	1	1	1	1	1	1
35	2	2	1	2	2	2	1	1	2
36	1	1	1	2	1	2	1	1	2
37	1	1	1	1	1	1	1	1	1
38	2	2	2	2	2	2	2	2	2
39	2	2	2	2	1	2	2	2	2
43	2	1	2	1	2	2	2	1	2
44	1	1	1	1	1	1	1	1	2
45	2	2	2	1	2	1	2	2	1
46	2	1	2	2	2	2	2	2	2
47	2	2	2	2	2	2	2	3	3
48	1	1	2	1	1	1	1	1	1
49	2	2	2	2	2	2	2	2	2
50	1	1	1	1	1	2	1	2	2
51	2	1	2	2	2	2	2	2	2
52	2	2	2	2	2	2	2	3	2
53	2	1	1	1	2	1	1	1	1
54	1	1	2	1	1	1	1	1	1

*Intraclass correlation - .9531*

*Pairwise Comparison - 0.75*

Table 7.6-2  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*

Number of Reviewers: Nine

Item	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j	DO K	Obj	S1 Obj j	S2 Obj j
1	1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.3			1	7EE.1.4			2	7EE.1.3			1	7EE.1.3						
2	1	7RP.1.1			1	7RP.1.1			1	7RP.1.1			2	7NS.1.2			1	7RP.1.1			1	7RP.1.1			2	7RP.1.1			1	7RP.1.1						
3	2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3						
4	1	7GS.1.1			1	7RP.1.1			1	7GS.1.1			2	7GS.1.1			1	7GS.1.1			1	7GS.1.1			1	7GS.1.1			2	7RP.1.2			1	7GS.1.1		
5	2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			2	7EE.1.3			1	7EE.1.3						
6	2	7NS.1.3			2	7NS.1.3			2	7NS.1.3			2	7NS.1.3			1	7NS.1.3			2	7NS.1.3			2	7NS.1.3			2	7NS.1.3						
7	2	7RP.1.3			2	7EE.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3	7EE.1.3		1	7EE.1.3			2	7RP.1.3			2	7RP.1.3						
8	1	7EE.1.1			2	7EE.1.1			2	7EE.1.1			2	7EE.1.1			2	7EE.1.1			2	7EE.1.1			2	7EE.1.1			2	7EE.1.1						
9	1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5			1	7GS.2.5						
10	2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7EE.1.4			2	7RP.1.3			2	7NS.1.3			2	7EE.1.4			2	7EE.1.4						
11	2	7RP.1.3			1	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7EE.1.4			1	7RP.1.3			2	7RP.1.3			2	7RP.1.3						
16	2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2			2	7RP.1.2						
17	2	7GS.1.6			2	7GS.1.6			3	7GS.1.6			2	7GS.1.6			2	7GS.1.6			2	7GS.1.6			2	7GS.1.6			2	7GS.1.6						
18	2	7GS.1.3			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2			2	7GS.1.2						
19	2	7NS.1.3			1	7NS.1.3			1	7NS.1.3			2	7NS.1.3			2	7NS.1.3			2	7NS.1.3			1	7NS.1.3			1	7NS.1.3						
20	2	7GS.1.1			2	7GS.1.1			3	7GS.1.1			2	7GS.1.5			2	7GS.1.1			3	7GS.1.1			2	7GS.1.1			2	7GS.1.1						
21	2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3			2	7RP.1.3						

22	2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 3		2	7RP.1. 1		2	7RP.1. 2		2	7RP.1. 2		1	7RP.1. 2		2	7RP.1. 2		
23	1	7GS.1. 4		1	7GS.1. 4		1	7GS.1. 4		1	7GS.1. 4		2	7GS.1. 4		1	7EE.1. 4		1	7GS.1. 4		2	7GS.1. 4		1	7GS.1. 4		
24	2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		
25	2	7RP.1. 2		1	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		
26	2	7GS.2. 7		2	7EE.1. 3		2	7GS.2. 7		1	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		1	7GS.2. 7		1	7GS.2. 7		
27	2	7EE.1. 4		1	7NS.1. 2		2	7EE.1. 4		1	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		1	7EE.1. 4		2	7EE.1. 4		2	7EE.1. 4		
28	1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		2	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		
29	2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		1	7RP.1. 2		
30	2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		1	7GS.2. 7		
31	1	7NS.1. 1		2	7GS.2. 1		1	7NS.1. 2		1	7NS.1. 2		2	7RP.1. 1		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		
32	2	7GS.1. 5		1	7GS.1. 2		1	7GS.1. 5		2	7GS.1. 5		2	7GS.1. 5		2	7GS.1. 5		2	7GS.1. 5		1	7GS.1. 5	7EE.1. 4	2	7GS.1. 5		
33	2	7GS.2. 1		2	7GS.2. 1		2	7GS.2. 1		2	7GS.2. 1		2	7GS.2. 1		2	7GS.2. 1		2	7GS.2. 1		1	7GS.2. 1		2	7GS.2. 1		
34	1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7RP.1. 1		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		
35	1	7GS.1. 6		2	7GS.1. 6		1	7GS.1. 6		2	7GS.1. 4		2	7GS.1. 6		2	7GS.1. 6		1	7GS.1. 6		2	7GS.1. 6		2	7GS.1. 6		
36	1	7GS.2. 5		2	7GS.2. 7		1	7GS.2. 5		1	7GS.2. 5		2	7GS.2. 5		1	7GS.2. 5		1	7GS.2. 5		2	7GS.2. 5		1	7GS.2. 5		
37	1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		
38	2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		2	7GS.2. 4		
39	2	7NS.1. 1		2	7NS.1. 1		2	7NS.1. 1		2	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		2	7NS.1. 1		2	7NS.1. 1		
43	2	7RP.1. 2		1	7RP.1. 2		1	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		1	7RP.1. 2		
44	1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		1	7NS.1. 2		2	7NS.1. 2		1	7NS.1. 2		
45	2	7EE.1. 2		1	7EE.1. 2		2	7EE.1. 2		2	7EE.1. 2		1	7EE.1. 2		2	7EE.1. 2		2	7EE.1. 2		1	7EE.1. 2		2	7EE.1. 2		
46	2	7GS.1. 6		2	7GS.1. 6		2	7GS.1. 6		2	7GS.1. 4		2	7GS.1. 6		2	7GS.1. 4		2	7GS.1. 6		2	7GS.1. 4		1	7GS.1. 6		

47	2	7NS.0. 0		2	7NS.0. 0		3	7NS.0. 0		2	7NS.0. 0		2	7NS.0. 0		2	7NS.0. 0		3	7NS.0. 0		2	7NS.0. 0		
48	2	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		1	7EE.1. 1		
49	2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		2	7GS.2. 7		
50	1	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		
51	2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		2	7EE.1. 3		2	7RP.1. 2		2	7RP.1. 2		2	7RP.1. 2		1	7RP.1. 2		
52	2	7NS.1. 3		2	7NS.1. 3		3	7NS.1. 3		2	7NS.1. 3		2	7NS.1. 3		2	7NS.1. 3		2	7NS.1. 3		2	7NS.1. 3		
53	1	7NS.1. 1		1	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		2	7NS.1. 1		1	7NS.1. 1		1	7NS.1. 1		
54	2	7GS.2. 3		1	7GS.2. 3		1	7GS.2. 3		1	7GS.2. 4		1	7GS.2. 3		1	7GS.2. 3		1	7GS.2. 4		1	7GS.2. 3		
Objective Pairwise Comparison: 0.86																									
Standard Pairwise Comparison: 0.92																									

Table 7.7-2

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*

	Low		Medium		High		
	0		5.4			9	
7RP.0.0							
7RP.1.0							
7RP.1.1	2(8)	4(1)	22(1)	34(1)	31(1)	51(1)	
7RP.1.2	51(7)	43(9)	29(9)	22(7)	25(9)	4(1)	16(9)
7RP.1.3	7(7)	10(1)	11(8)	3(9)	22(1)	21(9)	
7NS.0.0	47(9)						
7NS.1.0							
7NS.1.1	39(9)	50(9)	53(9)				
7NS.1.2	31(7)	44(9)	27(1)	28(9)	34(8)	37(9)	2(1)
7NS.1.3	1(1)	6(9)	19(9)	10(1)	52(9)		
7EE.0.0							
7EE.1.0							
7EE.1.1	48(9)	8(9)					
7EE.1.2	45(9)						
7EE.1.3	51(1)	5(9)	1(7)	26(1)	7(3)		
7EE.1.4	27(8)	24(9)	23(1)	10(7)	11(1)	1(1)	32(1)
7GS.0.0							
7GS.1.0							
7GS.1.1	4(7)	20(8)					
7GS.1.2	18(8)	32(1)					
7GS.1.3	18(1)						
7GS.1.4	35(1)	23(8)	46(3)				
7GS.1.5	32(8)	20(1)					
7GS.1.6	17(9)	35(8)	46(6)				
7GS.2.0							
7GS.2.1	31(1)	33(9)					

7GS.2.2							
7GS.2.3	54(7)						
7GS.2.4	54(2)	38(9)					
7GS.2.5	36(8)	9(9)					
7GS.2.6							
7GS.2.7	36(1)	30(9)	26(8)	49(9)			



Table 7.8-2

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group*

Low		Medium		High	
1.8		5.4		9	
1 12422	7NS.1.3:1	7EE.1.3:7	7EE.1.4:1		
2 10324	7RP.1.1:8	7NS.1.2:1			
3 10347	7RP.1.3:9				
4 8698	7RP.1.1:1	7RP.1.2:1	7GS.1.1:7		
5 10315	7EE.1.3:9				
6 10701	7NS.1.3:9				
7 11300	7RP.1.3:7	7EE.1.3:3			
8 13144	7EE.1.1:9				
9 12915	7GS.2.5:9				
10 12929	7RP.1.3:1	7NS.1.3:1	7EE.1.4:7		
11 13136	7RP.1.3:8	7EE.1.4:1			
16 10350	7RP.1.2:9				
17 11972	7GS.1.6:9				
18 11719	7GS.1.2:8	7GS.1.3:1			
19 10322	7NS.1.3:9				
20 9529	7GS.1.1:8	7GS.1.5:1			
21 10355	7RP.1.3:9				
22 13803	7RP.1.1:1	7RP.1.2:7	7RP.1.3:1		
23 10339	7EE.1.4:1	7GS.1.4:8			
24 13805	7EE.1.4:9				
25 11332	7RP.1.2:9				
26 13146	7EE.1.3:1	7GS.2.7:8			
27 10344	7NS.1.2:1	7EE.1.4:8			
28 12201	7NS.1.2:9				
29 11348	7RP.1.2:9				
30 10377	7GS.2.7:9				
31 10308	7RP.1.1:1	7NS.1.2:7	7GS.2.1:1		
32 10310	7EE.1.4:1	7GS.1.2:1	7GS.1.5:8		
33 11586	7GS.2.1:9				
34 10309	7RP.1.1:1	7NS.1.2:8			
35 12423	7GS.1.4:1	7GS.1.6:8			
36 9720	7GS.2.5:8	7GS.2.7:1			
37 13798	7NS.1.2:9				

38 11580	7GS.2.4:9		
39 9703	7NS.1.1:9		
43 10331	7RP.1.2:9		
44 10289	7NS.1.2:9		
45 10370	7EE.1.2:9		
46 9504	7GS.1.4:3	7GS.1.6:6	
47 12848	7NS.0.0:9		
48 10349	7EE.1.1:9		
49 10376	7GS.2.7:9		
50 12218	7NS.1.1:9		
51 10303	7RP.1.1:1	7RP.1.2:7	7EE.1.3:1
52 9508	7NS.1.3:9		
53 13128	7NS.1.1:9		
54 13334	7GS.2.3:7	7GS.2.4:2	

Table 7.9-2 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])

AzMERIT 2017 Math Grade 7 Paper for grades 7-11 group

Low DOK		Matched DOK		High DOK

7RP.0.0							
7RP.1.0							
7RP.1.1: [1]	2:(8)[1]	4:(1)[1]	22:(1)[2]	31:(1)[2]	34:(1)[1]	51:(1)[2]	
7RP.1.2: [2]	4:(1)[2]	16:(9)[2]	22:(7)[2]	25:(9)[2]	29:(9)[2]	43:(9)[2]	51:(7)[2]
7RP.1.3: [2]	3:(9)[2]	7:(7)[2]	10:(1)[2]	11:(8)[2]	21:(9)[2]	22:(1)[2]	
7NS.0.0: [2]	47:(9)[2]						
7NS.1.0							
7NS.1.1: [2]	39:(9)[2]	50:(9)[1]	53:(9)[1]				
7NS.1.2: [2]	2:(1)[2]	27:(1)[1]	28:(9)[1]	31:(7)[1]	34:(8)[1]	37:(9)[1]	44:(9)[1]
7NS.1.3: [2]	1:(1)[1]	6:(9)[2]	10:(1)[2]	19:(9)[2]	52:(9)[2]		
7EE.0.0							
7EE.1.0							
7EE.1.1: [1]	8:(9)[2]	48:(9)[1]					
7EE.1.2: [2]	45:(9)[2]						
7EE.1.3: [2]	1:(7)[1]	5:(9)[2]	7:(3)[2]	26:(1)[2]	51:(1)[2]		
7EE.1.4: [2]	1:(1)[1]	10:(7)[2]	11:(1)[2]	23:(1)[1]	24:(9)[2]	27:(8)[2]	32:(1)[1]
7GS.0.0							
7GS.1.0							
7GS.1.1: [2]	4:(7)[1]	20:(8)[2]					
7GS.1.2: [2]	18:(8)[2]	32:(1)[1]					
7GS.1.3: [2]	18:(1)[2]						
7GS.1.4: [2]	23:(8)[1]	35:(1)[2]	46:(3)[2]				
7GS.1.5: [2]	20:(1)[2]	32:(8)[2]					
7GS.1.6: [2]	17:(9)[2]	35:(8)[2]	46:(6)[2]				
7GS.2.0							
7GS.2.1: [2]	31:(1)[2]	33:(9)[2]					
7GS.2.2							
7GS.2.3: [2]	54:(7)[1]						
7GS.2.4: [2]	38:(9)[2]	54:(2)[1]					
7GS.2.5: [1]	9:(9)[1]	36:(8)[1]					
7GS.2.6							
7GS.2.7: [3]	26:(8)[2]	30:(9)[2]	36:(1)[2]	49:(9)[2]			

## Mathematics Grade 8

Table 8.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 8 Paper*  
*Number of Assessment Items - 47*

Reporting Category			Level by Standard			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
8EE.0.0 Expressions and Equati...	1	9	1 2	3 5	37.5 62.5	17.89	1.83	YES
8F.0.0 Functions	1	5.33	1 2 3	1 3 1	20 60 20	10.56	1.24	YES
8G.0.0 Geometry	1	9.11	1 2	1 8	11.11 88.89	11.78	0.67	YES
8SN.0.0 Statistics, Probabilit...	2	8.11	1 2 3	1 6 1	12.5 75 12.5	8.78	0.44	YES
Total	5	31.55	1 2 3	6 22 2	20 73 7	49.01	0	

Table 8.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Math Grade 8 Paper*  
*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Item						DOK Consistency
Title	Cluster#	Stds#	M	S.D	% Under	SD	% At	SD	% Above	SD	
8EE.0.0 Expressions and Equati...	1	9	17.89	1.83	34.55	10	63.32	12	2.13	4	YES
8F.0.0 Functions	1	5.33	10.56	1.24	40.36	11	52.4	12	7.24	6	YES
8G.0.0 Geometry	1	9.11	11.78	0.67	45.46	13	50.84	13	3.7	6	YES
8SN.0.0 Statistics, Probabilit...	2	8.11	8.78	0.44	57.72	15	42.28	15	0	0	WEAK
Total	5	31.55	49.01	0	42.63	7.5	54.2	8.3	3.17	3.1	

Table 8.3

Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers  
 AzMERIT 2017 Math Grade 8 Paper  
 Number of Assessment Items - 47

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster#	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
8EE.0.0 Expressions and Equati...	1	9	17.89	1.83	8.11	0.6	90.12	6.68	YES	36	4	0.74	0.02	YES
8F.0.0 Functions	1	5.33	10.56	1.24	5.22	0.67	97.78	6.67	YES	22	3	0.73	0.06	YES
8G.0.0 Geometry	1	9.11	11.78	0.67	6.11	0.78	67.04	7.93	YES	25	1	0.88	0.04	YES
8SN.0.0 Statistics, Probabilit...	2	8.11	8.78	0.44	4.11	0.6	50.62	6.52	YES	17	1	0.85	0.08	YES
Total	5	31.55	49.01	0	5.9	1.69	76.39	22		25	8	0.8	0.07	

Table 8.4

Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers  
 AzMERIT 2017 Math Grade 8 Paper  
 Number of Assessment Items - 47

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8EE.0.0 Expressions and Equati...	YES	YES	YES	YES
8F.0.0 Functions	YES	YES	YES	YES
8G.0.0 Geometry	YES	YES	YES	YES
8SN.0.0 Statistics, Probabilit...	YES	WEAK	YES	YES

Table 8.5 Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation AzMERIT 2017 Math Grade 8 Paper Reviewer's DOK

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8	Reviewer 9
1	1	1	2	1	1	1	2	1	1
2	2	2	2	2	2	2	2	2	3
3	2	2	2	2	2	2	2	2	2
4	1	1	1	1	2	1	2	1	1
5	2	2	2	1	2	1	2	1	2
6	2	2	2	2	2	2	2	2	2
7	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	2	1	1	2
9	2	2	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2	2	2
11	1	2	1	1	1	1	1	1	1
16	2	2	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1
18	2	1	1	1	1	1	1	1	1
19	2	2	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2	2	2
21	2	1	1	1	1	1	1	1	1
22	1	1	2	1	2	1	2	1	1
23	2	1	1	1	1	1	1	1	1
24	2	2	1	1	1	1	1	2	1
25	2	1	1	1	1	1	1	1	1
26	2	1	1	1	1	1	1	1	1
27	2	2	1	2	1	2	2	1	2
28	1	1	1	1	1	1	1	1	1
29	1	1	2	1	2	1	2	1	1
30	2	2	2	1	1	1	2	1	1
31	2	2	1	1	1	1	1	1	2
32	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	2	1	2	2
34	2	3	2	2	2	2	2	2	2
35	1	1	1	1	1	1	1	1	1
36	2	2	2	2	1	1	2	1	2
37	1	2	1	1	1	2	1	1	1
38	2	2	2	1	2	2	2	1	2
39	1	2	2	1	1	1	2	1	1
43	2	2	2	2	2	1	2	2	2
44	1	1	1	1	1	1	1	1	2
45	1	1	2	2	2	1	1	1	2
46	2	1	1	1	1	1	1	1	1
47	1	2	2	1	2	2	2	2	2
48	2	1	1	1	1	1	1	1	1
49	2	2	2	3	2	2	2	2	3
50	1	1	1	1	1	1	1	1	1
51	2	2	2	2	1	2	2	1	2
52	2	2	2	2	2	2	2	2	2
53	1	1	2	1	1	2	2	2	2
54	2	2	2	2	2	2	1	2	2

Intraclass correlation - .9365

Pairwise Comparison - 0.73

Number of Reviewers: Nine

284 Wisconsin Center for Education Products and Services - WebbAlign

29	2	8SN.2.2		1	8SN.2.2		1	8SN.2.2		1	8SN.2.2		1	8SN.2.2		2	8SN.2.2		2	8SN.2.2		1	8SN.2.2		1	8SN.2.2		
30	2	8F.1.4		1	8F.1.4		1	8F.1.4		2	8F.1.3		1	8F.1.4		1	8F.1.4		2	8F.1.4		1	8F.1.4		2	8F.1.4		
31	1	8EE.1.2		1	8G.1.8		1	8EE.1.8		2	8G.1.8		1	8G.1.8		1	8G.1.8		1	8G.1.8		2	8G.1.8		2	8G.1.8		
32	1	8EE.1.2		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		1	8EE.1.1		
33	1	8F.1.3		1	8F.1.3		2	8F.1.3		1	8F.1.1		2	8F.1.3		1	8F.1.3		1	8F.1.3		2	8F.1.3		1	8F.1.3		
34	2	8F.1.5		2	8F.1.5		2	8F.1.5		2	8F.1.5		2	8F.1.5		2	8F.1.5		2	8F.1.5		2	8F.1.5		3	8F.1.5		
35	1	8EE.1.4		1	8EE.1.4		1	8EE.1.4		1	8EE.1.4		1	8EE.1.3		1	8EE.1.4		1	8EE.1.4		1	8EE.1.4		1	8EE.1.4		
36	2	8SN.1.2		2	8SN.1.3		1	8SN.1.3		2	8SN.1.2		1	8SN.1.3		1	8SN.1.3		2	8SN.1.3		2	8SN.1.2		2	8SN.1.3		
37	1	8SN.2.2		1	8SN.2.2		1	8SN.2.2		1	8SN.2.2		2	8SN.2.2		1	8SN.2.0		1	8SN.2.2		1	8SN.2.2		2	8SN.2.2		
38	2	8SN.1.1		1	8SN.1.1		1	8SN.1.1		2	8SN.1.1		2	8SN.1.1		2	8SN.1.3		2	8SN.1.1		2	8SN.1.1		2	8SN.1.1		
39	2	8SN.1.1		1	8SN.1.1		1	8SN.1.1		1	8SN.1.2		1	8SN.1.1		1	8SN.1.1		2	8SN.1.1		1	8SN.1.1		2	8SN.1.1		
43	2	8F.1.2		2	8F.1.2		2	8F.1.2		2	8F.1.2		1	8F.1.2		2	8F.1.2		2	8F.1.2		2	8F.1.2		2	8F.1.2		
44	1	8EE.1.4		1	8EE.1.3		1	8EE.1.4		1	8EE.1.4		1	8EE.1.3		1	8EE.1.4		1	8EE.1.4		2	8EE.1.4		1	8EE.1.3		
45	2	8SN.1.2		2	8SN.1.2		1	8SN.1.2		1	8SN.1.2		1	8SN.1.2		2	8SN.1.2		1	8SN.1.2		2	8SN.1.2		1	8SN.1.3		
46	1	8F.1.4		1	8F.0.0		1	8F.1.4		2	8F.1.4		1	8F.1.4		1	8F.1.4		1	8F.1.4		1	8F.0.0		1	8F.1.0		
47	2	8F.1.3		1	8F.1.1		2	8F.1.1		1	8F.1.1		2	8F.1.1		2	8F.1.1		2	8F.1.1		2	8F.1.1		2	8F.1.1		
48	1	8EE.1.8		1	8EE.1.8		1	8EE.1.8		2	8EE.1.7		1	8EE.1.8		1	8EE.1.8		1	8EE.1.8		1	8EE.1.8		1	8EE.1.8		
49	2	8EE.1.6		3	8EE.1.6		2	8EE.1.6		2	8EE.1.6		2	8EE.1.6		2	8EE.1.6		2	8EE.1.6		3	8EE.1.6		2	8EE.1.6		
50	1	8EE.1.2		1	8SN.2.2		1	8SN.2.2		1	8SN.2.1		1	8SN.2.2		1	8EE.1.2		1	8SN.2.2		1	8SN.2.2		1	8SN.2.2		
51	2	8G.1.2		2	8G.1.2		1	8G.1.2		2	8G.1.2		2	8G.1.2		1	8G.1.2		2	8G.1.2		2	8G.1.2		2	8G.1.2		
52	2	8EE.1.8		2	8F.1.2		2	8F.1.2		2	8EE.1.8		2	8EE.1.8		2	8EE.1.8		2	8F.1.2		2	8F.1.2		2	8F.1.2		
53	2	8G.1.1		1	8G.1.1		2	8G.1.2		1	8G.1.1		2	8G.1.2		1	8G.1.1		2	8G.1.2		2	8G.0.0		1	8G.1.1		
54	2	8SN.1.3		2	8SN.1.3		2	8SN.1.3		2	8SN.1.3		2	8SN.1.3		2	8SN.1.3		1	8SN.1.3		2	8SN.1.3		2	8SN.1.3		

Objective Pairwise Comparison: 0.79

Standard Pairwise Comparison: 0.91



Table 8.7

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 Math Grade 8 Paper*

Low		Medium		High	
0		10.8		18	
8EE.0.0	22(1)				
8EE.1.0	22(8)				
8EE.1.1	28(1)	32(8)			
8EE.1.2	32(1)	31(1)	28(8)	17(9)	50(2)
8EE.1.3	44(3)	35(1)			
8EE.1.4	35(8)	25(1)	44(6)		
8EE.1.5	27(3)	3(6)	6(9)		
8EE.1.6	49(9)				
8EE.1.7	48(1)	16(9)	26(9)	21(9)	24(9)
8EE.1.8	31(1)	19(18)	7(1)	8(7)	48(8)
8F.0.0	46(2)				
8F.1.0	46(1)				
8F.1.1	47(8)	33(1)			
8F.1.2	20(9)	10(9)	43(9)	52(5)	
8F.1.3	47(1)	33(8)	30(1)		
8F.1.4	30(8)	27(6)	25(8)	3(2)	46(6)
8F.1.5	3(1)	9(1)	34(9)		
8G.0.0	53(1)				
8G.1.0					
8G.1.1	53(5)	5(1)			
8G.1.2	1(9)	53(3)	51(9)		
8G.1.3					
8G.1.4					
8G.1.5	4(1)	5(8)	8(1)	9(8)	
8G.1.6	18(3)	4(2)			
8G.1.7	4(6)	18(6)	23(9)		

8G.1.8	31(7)	8(1)	7(8)			
8G.1.9	2(9)	11(9)				
8SN.0.0						
8SN.1.0						
8SN.1.1	38(8)	39(8)				
8SN.1.2	39(1)	45(8)	36(3)			
8SN.1.3	36(6)	38(1)	45(1)	54(18)		
8SN.1.4						
8SN.1.5						
8SN.2.0	37(1)					
8SN.2.1	50(1)					
8SN.2.2	50(6)	37(8)	29(9)			
8SN.2.3						

Table 8.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Math Grade 8 Paper*

Low		Medium		High	
3.6		10.8		18	
1 10589	8G.1.2:9				
2 8251	8G.1.9:9				
3 10503	8EE.1.5:6	8F.1.4:2	8F.1.5:1		
4 10583	8G.1.5:1	8G.1.6:2	8G.1.7:6		
5 10536	8G.1.1:1	8G.1.5:8			
6 10573	8EE.1.5:9				
7 10514	8EE.1.8:1	8G.1.8:8			
8 12044	8EE.1.8:7	8G.1.5:1	8G.1.8:1		
9 10523	8F.1.5:1	8G.1.5:8			
10 10526	8F.1.2:9				
11 11546	8G.1.9:9				
16 10564	8EE.1.7:9				
17 12460	8EE.1.2:9				
18 13814	8G.1.6:3	8G.1.7:6			
19 9526	8EE.1.8:18				
20 10561	8F.1.2:9				
21 10541	8EE.1.7:9				
22 11304	8EE.0.0:1	8EE.1.0:8			
23 10582	8G.1.7:9				
24 13152	8EE.1.7:9				
25 10513	8EE.1.4:1	8F.1.4:8			
26 10543	8EE.1.7:9				
27 10532	8EE.1.5:3	8F.1.4:6			
28 10528	8EE.1.1:1	8EE.1.2:8			
29 10517	8SN.2.2:9				
30 12476	8F.1.3:1	8F.1.4:8			
31 10546	8EE.1.2:1	8EE.1.8:1	8G.1.8:7		
32 12462	8EE.1.1:8	8EE.1.2:1			
33 10495	8F.1.1:1	8F.1.3:8			
34 10565	8F.1.5:9				
35 10525	8EE.1.3:1	8EE.1.4:8			
36 10487	8SN.1.2:3	8SN.1.3:6			
37 10531	8SN.2.0:1	8SN.2.2:8			

38 12005	8SN.1.1:8	8SN.1.3:1	
39 10552	8SN.1.1:8	8SN.1.2:1	
43 11690	8F.1.2:9		
44 10554	8EE.1.3:3	8EE.1.4:6	
45 11443	8SN.1.2:8	8SN.1.3:1	
46 13150	8F.0.0:2	8F.1.0:1	8F.1.4:6
47 10512	8F.1.1 :8	8F.1.3:1	
48 10493	8EE.1.7:1	8EE.1.8:8	
49 12037	8EE.1.6:9		
50 10482	8EE.1.2:2	8SN.2.1:1	8SN.2.2:6
51 10588	8G.1.2:9		
52 11686	8EE.1.8:4	8F.1.2:5	
53 10576	8G.0.0:1	8G.1.1:5	8G.1.2:3
54 9525	8SN.1.3:18		

Table 8.9 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])

AzMERIT 2017 Math Grade 8 Paper

Low DOK		Matched DOK		High DOK

8EE.0.0: [2]	22:(1)[1]					
8EE.1.0: [2]	22:(8)[1]					
8EE.1.1: [1]	28:(1)[1]	32:(8)[1]				
8EE.1.2: [1]	17:(9)[1]	28:(8)[1]	31:(1)[1]	32:(1)[1]	50:(2)[1]	
8EE.1.3: [2]	35:(1)[1]	44:(3)[1]				
8EE.1.4: [1]	25:(1)[1]	35:(8)[1]	44:(6)[1]			
8EE.1.5: [2]	3:(6)[2]	6:(9)[2]	27:(3)[2]			
8EE.1.6: [2]	49:(9)[2]					
8EE.1.7: [2]	16:(9)[1]	21:(9)[1]	24:(9)[1]	26:(9)[1]	48:(1)[2]	
8EE.1.8: [2]	7:(1)[1]	8:(7)[1]	19:(18)[2]	31:(1)[1]	48:(8)[1]	52:(4)[2]
8F.0.0: [2]	46:(2)[1]					
8F.1.0: [2]	46:(1)[1]					
8F.1.1 : [1]	33:(1)[1]	47:(8)[2]				
8F.1.2: [2]	10:(9)[2]	20:(9)[2]	43:(9)[2]	52:(5)[2]		
8F.1.3: [2]	30:(1)[2]	33:(8)[1]	47:(1)[2]			
8F.1.4: [3]	3:(2)[2]	25:(8)[1]	27:(6)[2]	30:(8)[1]	46:(6)[1]	
8F.1.5: [2]	3:(1)[2]	9:(1)[2]	34:(9)[2]			
8G.0.0: [2]	53:(1)[2]					
8G.1.0						
8G.1.1: [2]	5:(1)[2]	53:(5)[1]				
8G.1.2: [2]	1:(9)[1]	51:(9)[2]	53:(3)[2]			
8G.1.3						
8G.1.4						
8G.1.5: [2]	4:(1)[2]	5:(8)[2]	8:(1)[1]	9:(8)[2]		
8G.1.6: [2]	4:(2)[2]	18:(3)[1]				
8G.1.7: [2]	4:(6)[1]	18:(6)[1]	23:(9)[1]			
8G.1.8: [1]	7:(8)[1]	8:(1)[1]	31:(7)[1]			
8G.1.9: [2]	2:(9)[2]	11:(9)[1]				
8SN.0.0						
8SN.1.0						
8SN.1.1: [3]	38:(8)[2]	39:(8)[1]				
8SN.1.2: [2]	36:(3)[2]	39:(1)[1]	45:(8)[2]			
8SN.1.3: [2]	36:(6)[2]	38:(1)[2]	45:(1)[1]	54:(18)[2]		
8SN.1.4						
8SN.1.5						
8SN.2.0: [2]	37:(1)[1]					
8SN.2.1: [1]	50:(1)[1]					
8SN.2.2: [2]	29:(9)[1]	37:(8)[1]	50:(6)[1]			
8SN.2.3						

## Mathematics Algebra I

Table 9.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra I*

*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
A1A.0.0 Algebra	4	17.22	1 2 3	5 11 1	29.41 64.71 5.88	19.44	0.88	YES
A1F.0.0 Functions	3	16.22	1 2 3	3 11 1	20 73.33 6.67	20.11	1.05	YES
A1SQ.0.0 Statistics and Quanti...	3	16	1 2 3	1 11 2	7.14 78.57 14.29	9	0	YES
Total	10	49.44	1 2 3	9 33 4	20 72 9	48.55	0.73	

Table 9.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra I*

*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Items						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
A1A.0.0 Algebra	4	17.22	19.44	0.88	37.1	17	54.3	14	8.6	6	YES
A1F.0.0 Functions	3	16.22	20.11	1.05	43.44	16	51.02	17	5.54	3	YES
A1SQ.0.0 Statistics and Quanti...	3	16	9	0	40.74	16	58.02	16	1.23	4	YES
Total	10	49.44	48.55	0.73	40.27	13.5	53.78	12.2	5.95	2.9	

*Table 9.3*

*Range-of-Knowledge Correspondence and Balance of Representation between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra I*

*Number of Assessment Items - 47*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster #	Stds #	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
A1A.0.0 Algebra	4	17.22	19.44	0.88	11.33	1.73	65.87	10.44	YES	39	2	0.77	0.05	YES
A1F.0.0 Functions	3	16.22	20.11	1.05	11.67	1.22	71.94	7.6	YES	42	2	0.76	0.02	YES
A1SQ.0.0 Statistics and Quanti...	3	16	9	0	7.56	0.53	47.22	3.29	WEAK	19	0	0.88	0.03	YES
Total	10	49.44	48.55	0.73	10.2	2.28	61.68	13		33	13	0.8	0.07	

*Table 9.4*

*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra I*

*Number of Assessment Items - 47*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
A1A.0.0 Algebra	YES	YES	YES	YES
A1F.0.0 Functions	YES	YES	YES	YES
A1SQ.0.0 Statistics and Quanti...	YES	YES	WEAK	YES

Table 9.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation AzMERIT 2017 Algebra I Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8	Reviewer 9
1	2	2	2	2	2	2	1	2	1
2	2	2	2	1	1	1	2	2	1
3	1	1	1	1	2	1	1	1	1
4	1	1	1	1	2	1	2	1	2
5	2	2	2	2	2	2	2	2	3
6	2	2	2	2	2	2	1	2	2
7	2	1	2	1	2	1	1	1	1
8	1	1	2	1	2	1	2	2	2
9	2	1	1	1	1	1	1	1	2
10	1	2	2	1	2	2	2	2	2
11	1	1	2	1	2	1	2	1	1
16	2	2	2	1	2	2	2	2	2
17	2	2	2	2	1	1	1	2	1
18	2	2	2	1	2	2	1	2	1
19	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1
21	2	2	2	2	2	1	2	2	2
22	2	2	2	2	2	2	2	1	2
23	1	1	2	1	1	1	2	1	1
24	2	2	2	2	1	2	1	2	1
25	2	1	2	2	1	1	2	2	2
26	2	1	1	1	1	1	1	1	2
27	2	2	1	1	1	2	1	2	2
28	2	1	2	1	2	1	2	1	1
29	2	1	2	1	1	1	2	1	1
30	2	2	2	2	2	2	2	2	2
31	2	2	1	1	2	1	2	2	2
32	2	1	1	1	1	1	1	1	1
33	2	2	2	2	2	1	1	2	2
34	2	2	2	2	2	1	2	2	1
35	2	1	2	1	1	1	2	2	1
36	1	1	1	1	2	1	2	1	1
37	1	2	2	1	1	1	2	1	1
41	2	2	2	2	1	1	2	1	2
42	2	2	2	2	2	2	2	2	1
43	2	2	2	1	1	1	1	2	2
44	2	2	2	1	2	2	2	2	1
45	2	1	1	2	1	1	1	1	2
46	2	1	2	1	1	2	1	2	1
47	2	1	2	1	1	1	2	1	1
48	2	1	2	1	1	2	1	2	1
49	1	1	1	1	1	1	1	1	1
50	2	1	1	1	1	1	1	1	2
51	2	1	2	1	1	1	1	1	2
52	2	2	2	1	2	2	2	1	1
53	2	1	1	1	1	1	1	1	1
54	2	2	2	2	2	2	2	2	2

*Intraclass correlation - .8743**Pairwise Comparison - 0.62*



Table 9.6

*DOK Levels and Objectives Code by Each Reviewer**AzMERIT 2017 Algebra I*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	A1A.3.1		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.3.2	A1A.4.5		2	A1A.4.5		1	A1A.4.5		1	A1A.4.4		2	A1A.4.5					
2	2	A1F.1.2		1	A1F.1.2		2	A1F.1.2		2	A1F.1.2		1	A1F.1.2		1	A1F.1.2		2	A1F.1.2		1	A1F.1.2		2	A1F.1.2						
3	1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		2	A1A.4.2		1	A1A.4.2		1	A1A.4.6		1	A1A.4.2						
4	1	A1A.4.2		1	A1A.4.6		1	A1F.1.2		1	A1A.4.6		1	A1A.4.6		2	A1A.3.3		2	A1F.1.2		2	A1A.4.6		1	A1A.4.6						
5	2	A1SQ.2.0		2	A1SQ.2.0		2	A1SQ.2.0		2	A1SQ.2.0		2	A1SQ.2.0		2	A1SQ.2.0		2	A1SQ.2.0		3	A1SQ.2.0		2	A1SQ.2.0						
6	2	A1SQ.1.1		2	A1SQ.1.3		2	A1SQ.1.3		2	A1SQ.1.3		2	A1SQ.1.4		2	A1SQ.1.3		1	A1F.1.4		2	A1SQ.1.3		2	A1SQ.1.3						
7	2	A1F.1.4		1	A1F.1.4		1	A1F.1.8		2	A1F.1.2		1	A1F.1.4		2	A1F.1.4		1	A1F.1.4		1	A1F.1.4		1	A1F.1.4						
8	2	A1F.3.4		1	A1F.3.4		2	A1F.3.4		1	A1F.3.4		1	A1F.3.4		2	A1F.3.4		2	A1F.3.4		2	A1F.3.4		1	A1F.3.4						
9	1	A1F.1.9		1	A1A.4.7		1	A1A.4.0		2	A1F.1.8		1	A1A.4.7		1	A1A.4.7		1	A1A.4.7		2	A1A.4.7		1	A1A.4.7						
10	2	A1F.1.9		1	A1F.1.1		2	A1F.1.1		1	A1F.1.1		2	A1F.1.1		2	A1F.2.1		2	A1F.1.0		2	A1F.1.1		2	A1F.1.1						
11	2	A1SQ.1.0		1	A1SQ.1.0		1	A1SQ.1.0		1	A1SQ.1.0		1	A1SQ.1.0		2	A1SQ.1.0		2	A1SQ.1.0		1	A1SQ.1.0		1	A1SQ.1.0						
16	2	A1SQ.1.6		1	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6		2	A1SQ.1.6						
17	2	A1F.2.2		2	A1F.1.5		2	A1F.2.2		2	A1F.2.2		1	A1F.2.2		1	A1F.2.2		1	A1F.2.2		1	A1F.2.2		1	A1F.2.2						
18	2	A1A.4.2		1	A1A.4.2		2	A1A.4.1		2	A1A.4.1	A1A.4.2	2	A1A.4.1		2	A1A.4.1		1	A1A.4.1		1	A1A.4.1		1	A1A.4.1						
19	1	A1F.1.2		1	A1F.1.2		1	A1F.1.2		1	A1F.1.2		1	A1F.1.2		1	A1F.1.1		1	A1F.1.2		1	A1F.1.2		1	A1F.1.2						
20	1	A1A.4.2		1	A1A.4.4		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1F.1.2		1	A1A.4.4						
21	2	A1F.1.5		2	A1F.1.2		2	A1F.1.5		2	A1F.1.5		1	A1F.1.5		2	A1F.1.5		2	A1F.1.5		2	A1F.1.5		2	A1F.1.5						
22	2	A1SQ.1.5		2	A1SQ.1.7		1	A1SQ.1.6		2	A1SQ.1.5		2	A1SQ.1.1		2	A1SQ.1.5		2	A1SQ.1.5		2	A1SQ.1.5		2	A1SQ.1.7						

23	2	A1F.1.0		1	A1F.1.0		1	A1F.1.0		1	A1F.1.0		1	A1F.0.0		1	A1F.1.0		2	A1F.1.0		1	A1F.1.0		1	A1F.1.0		
24	2	A1F.2.2		2	A1F.2.2		2	A1F.2.2		2	A1F.2.2		2	A1F.2.2		1	A1F.2.2		1	A1F.2.2		1	A1F.2.2		2	A1F.2.2		
25	2	A1SQ.1.2		2	A1SQ.1.2		2	A1SQ.1.2		2	A1SQ.1.2		1	A1SQ.1.3		1	A1SQ.1.1		2	A1SQ.1.1		2	A1SQ.1.2		1	A1SQ.1.1		
26	1	A1A.1.2		1	A1A.1.2		1	A1A.1.2		2	A1A.1.3		1	A1A.1.2		1	A1A.1.1		1	A1A.1.3		2	A1A.1.2		1	A1A.2.1		
27	1	A1F.1.2		1	A1F.1.8		2	A1F.1.8		2	A1A.4.3		2	A1F.1.8		1	A1A.2.2		1	A1F.1.8		2	A1F.1.8		2	A1F.1.4		
28	2	A1A.3.1		1	A1A.3.2		1	A1A.3.2		2	A1F.3.2		1	A1A.3.2		2	A1A.2.1		2	A1A.3.1		1	A1A.3.2		1	A1A.3.2		
29	2	A1F.2.2		1	A1F.2.2		1	A1F.2.2		2	A1F.2.2		1	A1F.2.2		1	A1F.2.2		2	A1F.2.2		1	A1F.2.2		1	A1F.2.2		
30	2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		2	A1A.4.5		
31	1	A1F.1.6		1	A1F.1.6		2	A1F.1.6		2	A1F.1.6		1	A1F.1.6		2	A1F.1.6		2	A1F.1.6		2	A1F.1.6		2	A1F.1.6		
32	1	A1A.4.3		1	A1A.4.3		1	A1A.4.3		2	A1A.4.3		1	A1A.4.3		1	A1A.4.3		1	A1A.4.3		1	A1A.1.3		1	A1A.2.2		
33	2	A1SQ.1.5		2	A1SQ.1.7		2	A1SQ.1.7		2	A1SQ.1.5		1	A1SQ.1.7		2	A1SQ.1.7		1	A1SQ.1.7		2	A1SQ.1.7		2	A1SQ.1.7		
34	2	A1A.3.1		2	A1A.3.1		2	A1A.3.3		2	A1F.3.1		1	A1A.3.1		2	A1A.4.2		2	A1A.3.1		1	A1A.4.2		2	A1A.3.1		
35	2	A1F.3.1		1	A1F.3.0		2	A1F.3.1		2	A1F.2.1		1	A1F.3.0		1	A1F.3.1		2	A1SQ.1.5		1	A1F.3.1		1	A1F.3.1		
36	1	A1A.4.8		1	A1A.4.8		1	A1A.4.8		1	A1A.4.8		1	A1A.4.8		2	A1A.3.3		2	A1A.4.8		1	A1A.3.3		1	A1A.3.3		
37	2	A1F.1.4		1	A1F.1.4		1	A1F.1.4		1	A1F.3.2		1	A1F.1.4		1	A1F.1.4		2	A1F.1.4		1	A1F.1.4		2	A1F.1.4		
41	2	A1F.3.3		2	A1F.3.3		1	A1F.3.3		2	A1F.3.3		1	A1F.3.3		1	A1F.3.3		2	A1F.3.3		2	A1F.3.3		2	A1F.3.3		
42	2	A1A.3.1		2	A1F.1.9		2	A1F.1.9		2	A1F.1.7		2	A1F.1.9		2	A1F.1.9		2	A1F.1.9		1	A1F.1.9		2	A1F.1.9		
43	2	A1A.4.2		1	A1A.4.2		2	A1A.4.2		2	A1A.4.2		1	A1A.4.2		1	A1A.4.2		1	A1A.4.2		2	A1A.4.2		2	A1A.4.2		
44	2	A1F.1.4		1	A1F.1.4		2	A1F.1.4		2	A1F.1.4		2	A1F.1.4		2	A1F.1.4		2	A1F.1.4		1	A1F.1.4		2	A1F.1.4		
45	1	A1F.1.4		2	A1F.1.9		1	A1A.4.7		2	A1F.1.8		1	A1A.4.7		1	A1A.4.7		1	A1A.4.7		2	A1F.1.9	A1A.4.4	1	A1A.4.7		
46	2	A1SQ.3.1		1	A1SQ.3.1		2	A1SQ.3.1		2	A1SQ.3.1		2	A1SQ.3.1		1	A1SQ.3.1		1	A1SQ.3.1		1	A1SQ.3.1		1	A1SQ.3.1		
47	2	A1SQ.		1	A1SQ.		1	A1SQ.		2	A1SQ.		1	A1SQ.		1	A1SQ.		2	A1SQ.		1	A1SQ.		1	A1SQ.		

		1.3				1.0				1.0				1.2				1.3				1.3				1.2				1.3				
48	2	A1F.1.4			1	A1F.1.4			2	A1F.1.8			2	A1F.1.4			2	A1F.1.4			1	A1F.1.4			1	A1F.1.4			1	A1F.1.4				
49	1	A1A.2.1			1	A1A.2.1			1	A1A.2.1			1	A1A.2.1			1	A1A.2.1			1	A1A.2.1			1	A1A.2.1			1	A1A.2.1				
50	1	A1A.4.3			1	A1A.4.3			1	A1A.4.3			2	A1A.4.3			1	A1A.4.3			1	A1A.4.3			1	A1A.4.3			2	A1A.4.3			1	A1A.4.3
51	2	A1A.4.0			1	A1A.3.3			1	A1A.3.3			2	A1A.4.5			1	A1A.3.3			1	A1A.3.3			1	A1A.3.1			2	A1A.3.3			1	A1A.3.3
52	2	A1F.1.6			1	A1F.1.6			1	A1F.1.6			2	A1F.1.6			2	A1F.1.6			2	A1F.1.6			2	A1F.1.6			1	A1F.1.6			2	A1F.1.6
53	1	A1A.4.1			1	A1A.1.3			1	A1A.4.1			2	A1A.4.1			1	A1A.4.1			1	A1A.4.1			1	A1A.4.1			1	A1A.1.3			1	A1A.4.1
54	2	A1F.1.2			2	A1A.1.1			2	A1A.1.1			2	A1A.1.1			2	A1A.1.1			2	A1F.3.4			2	A1A.1.1			2	A1A.1.1			2	A1A.3.4
Objective Pairwise Comparison: 0.66																																		
Standard Pairwise Comparison: 0.92																																		

Table 9.7 Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers) AzMERIT 2017 Algebra I

Low		Medium				High		
0		7.2				12		
A1A.0.0								
A1A.1.0								
A1A.1.1	26(1)	54(7)						
A1A.1.2	26(5)							
A1A.1.3	26(2)	32(1)	53(2)					
A1A.2.0								
A1A.2.1	49(9)	26(1)	28(1)					
A1A.2.2	27(1)	32(1)						
A1A.3.0								
A1A.3.1	34(5)	28(2)	1(1)	51(1)	42(1)			
A1A.3.2	1(1)	28(5)						
A1A.3.3	34(1)	36(3)	4(1)	51(6)				
A1A.3.4	54(1)							
A1A.4.0	51(1)	9(1)						
A1A.4.1	18(12)	53(7)						
A1A.4.2	20(6)	4(1)	3(8)	43(9)	34(2)	18(8)		
A1A.4.3	32(7)	27(1)	50(9)					
A1A.4.4	1(1)	20(2)	45(1)					
A1A.4.5	30(9)	51(1)	1(7)					
A1A.4.6	4(5)	3(1)						
A1A.4.7	9(6)	45(5)						
A1A.4.8	36(6)							
A1F.0.0	23(1)							
A1F.1.0	23(8)	10(1)						
A1F.1.1	10(6)	19(2)						
A1F.1.2	19(7)	20(1)	21(1)	7(1)	4(2)	2(9)	27(1)	54(1)
A1F.1.3								

A1F.1.4	48(7)	45(1)	27(1)	37(8)	44(9)	7(7)	6(1)	
A1F.1.5	21(8)	17(1)						
A1F.1.6	31(9)	52(9)						
A1F.1.7	42(1)							
A1F.1.8	45(1)	48(2)	27(5)	9(1)	7(1)			
A1F.1.9	9(1)	10(1)	45(2)	42(7)				
A1F.2.0								
A1F.2.1	10(1)	35(1)						
A1F.2.2	24(9)	29(9)	17(8)					
A1F.3.0	35(2)							
A1F.3.1	35(5)	34(1)						
A1F.3.2	37(1)	28(1)						
A1F.3.3	41(9)							
A1F.3.4	8(9)	54(1)						
A1SQ.0.0								
A1SQ.1.0	47(2)	11(9)						
A1SQ.1.1	22(1)	6(1)	25(3)					
A1SQ.1.2	25(5)	47(2)						
A1SQ.1.3	47(5)	25(1)	6(6)					
A1SQ.1.4	6(1)							
A1SQ.1.5	22(5)	35(1)	33(2)					
A1SQ.1.6	22(1)	16(9)						
A1SQ.1.7	22(2)	33(7)						
A1SQ.1.8								
A1SQ.2.0	5(9)							
A1SQ.2.1								
A1SQ.2.2								
A1SQ.3.0								
A1SQ.3.1	46(9)							
A1SQ.3.2								
A1SQ.3.3								
A1SQ.3.4								

Table 9.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Algebra I*

	Low	Medium		High	
	2.4	7.2		12	
1 12073	A1A.3.1:1	A1A.3.2:1	A1A.4.4:1	A1A.4.5:7	
2 11052	A1F.1.2:9				
3 13162	A1A.4.2:8	A1A.4.6:1			
4 13164	A1A.3.3:1	A1A.4.2:1	A1A.4.6:5	A1F.1.2:2	
5 11664	A1SQ.2.0:9				
6 12615	A1F.1.4:1	A1SQ.1.1:1	A1SQ.1.3:6	A1SQ.1.4:1	
7 11047	A1F.1.2:1	A1F.1.4:7	A1F.1.8:1		
8 12499	A1F.3.4:9				
9 12060	A1A.4.0:1	A1A.4.7:6	A1F.1.8:1	A1F.1.9:1	
10 11537	A1F.1.0:1	A1F.1.1:6	A1F.1.9:1	A1F.2.1:1	
11 11353	A1SQ.1.0:9				
16 12237	A1SQ.1.6:9				
17 11751	A1F.1.5:1	A1F.2.2:8			
18 9541	A1A.4.1:12	A1A.4.2:8			
19 11574	A1F.1.1:2	A1F.1.2:7			
20 10969	A1A.4.2:6	A1A.4.4:2	A1F.1.2:1		
21 11338	A1F.1.2:1	A1F.1.5:8			
22 10953	A1SQ.1.1:1	A1SQ.1.5:5	A1SQ.1.6:1	A1SQ.1.7:2	
23 11055	A1F.0.0:1	A1F.1.0:8			
24 10897	A1F.2.2:9				
25 11548	A1SQ.1.1:3	A1SQ.1.2:5	A1SQ.1.3:1		
26 13174	A1A.1.1:1	A1A.1.2:5	A1A.1.3:2	A1A.2.1:1	
27 12699	A1A.2.2:1	A1A.4.3:1	A1F.1.2:1	A1F.1.4:1	A1F.1.8:5
28 9535	A1A.2.1:1	A1A.3.1:2	A1A.3.2:5	A1F.3.2:1	
29 10945	A1F.2.2:9				
30 12898	A1A.4.5:9				
31 10977	A1F.1.6:9				
32 12481	A1A.1.3:1	A1A.2.2:1	A1A.4.3:7		
33 10963	A1SQ.1.5:2	A1SQ.1.7:7			
34 9531	A1A.3.1:5	A1A.3.3:1	A1A.4.2:2	A1F.3.1:1	
35 12017	A1F.2.1:1	A1F.3.0:2	A1F.3.1:5	A1SQ.1.5:1	
36 12366	A1A.3.3:3	A1A.4.8:6			

37 10934	A1F.1.4:8	A1F.3.2:1			
41 10940	A1F.3.3:9				
42 10942	A1A.3.1:1	A1F.1.7:1	A1F.1.9:7		
43 10990	A1A.4.2:9				
44 12074	A1F.1.4:9				
45 11012	A1A.4.4:1	A1A.4.7:5	A1F.1.4:1	A1F.1.8:1	A1F.1.9:2
46 13185	A1SQ.3.1:9				
47 12593	A1SQ.1.0:2	A1SQ.1.2:2	A1SQ.1.3:5		
48 12009	A1F.1.4:7	A1F.1.8:2			
49 10905	A1A.2.1:9				
50 12023	A1A.4.3:9				
51 10973	A1A.3.1:1	A1A.3.3:6	A1A.4.0:1	A1A.4.5:1	
52 12020	A1F.1.6:9				
53 12156	A1A.1.3:2	A1A.4.1:7			
54 13168	A1A.1.1:7	A1A.3.4:1	A1F.1.2:1	A1F.3.4:1	

Table 9.9 Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK]) AzMERIT 2017 Algebra I

Low DOK		Matched DOK		High DOK				
A1A.0.0								
A1A.1.0								
A1A.1.1: [2]	26:(1)[1]	54:(7)[2]						
A1A.1.2: [2]	26:(5)[1]							
A1A.1.3: [2]	26:(2)[2]	32:(1)[1]	53:(2)[1]					
A1A.2.0								
A1A.2.1: [1]	26:(1)[1]	28:(1)[2]	49:(9)[1]					
A1A.2.2: [2]	27:(1)[1]	32:(1)[1]						
A1A.3.0								
A1A.3.1: [2]	1:(1)[2]	28:(2)[2]	34:(5)[2]	42:(1)[2]	51:(1)[1]			
A1A.3.2: [2]	1:(1)[2]	28:(5)[1]						
A1A.3.3: [3]	4:(1)[2]	34:(1)[2]	36:(3)[1]	51:(6)[1]				
A1A.3.4: [1]	54:(1)[2]							
A1A.4.0: [3]	9:(1)[1]	51:(1)[2]						
A1A.4.1: [2]	18:(12)[2]	53:(7)[1]						
A1A.4.2: [1]	3:(8)[1]	4:(1)[1]	18:(8)[2]	20:(6)[1]	34:(2)[2]	43:(9)[2]		
A1A.4.3: [2]	27:(1)[2]	32:(7)[1]	50:(9)[1]					
A1A.4.4: [2]	1:(1)[1]	20:(2)[1]	45:(1)[2]					
A1A.4.5: [2]	1:(7)[2]	30:(9)[2]	51:(1)[2]					
A1A.4.6: [1]	3:(1)[1]	4:(5)[1]						
A1A.4.7: [2]	9:(6)[1]	45:(5)[1]						
A1A.4.8: [1]	36:(6)[1]							
A1F.0.0: [3]	23:(1)[1]							
A1F.1.0: [3]	10:(1)[2]	23:(8)[1]						
A1F.1.1: [1]	10:(6)[2]	19:(2)[1]						
A1F.1.2: [2]	2:(9)[2]	4:(2)[2]	7:(1)[2]	19:(7)[1]	20:(1)[1]	21:(1)[2]	27:(1)[1]	54:(1)[2]
A1F.1.3								
A1F.1.4: [2]	6:(1)[1]	7:(7)[1]	27:(1)[2]	37:(8)[1]	44:(9)[2]	45:(1)[1]	48:(7)[1]	
A1F.1.5: [2]	17:(1)[2]	21:(8)[2]						
A1F.1.6: [2]	31:(9)[2]	52:(9)[2]						
A1F.1.7: [2]	42:(1)[2]							
A1F.1.8: [2]	7:(1)[1]	9:(1)[2]	27:(5)[2]	45:(1)[2]	48:(2)[2]			
A1F.1.9: [2]	9:(1)[1]	10:(1)[2]	42:(7)[2]	45:(2)[2]				
A1F.2.0								
A1F.2.1: [2]	10:(1)[2]	35:(1)[2]						
A1F.2.2: [2]	17:(8)[2]	24:(9)[2]	29:(9)[1]					
A1F.3.0: [3]	35:(2)[1]							
A1F.3.1: [3]	34:(1)[2]	35:(5)[1]						
A1F.3.2: [2]	28:(1)[2]	37:(1)[1]						
A1F.3.3: [1]	41:(9)[2]							
A1F.3.4: [2]	8:(9)[2]	54:(1)[2]						
A1SQ.0.0								
A1SQ.1.0: [3]	11:(9)[1]	47:(2)[1]						
A1SQ.1.1: [2]	6:(1)[2]	22:(1)[2]	25:(3)[1]					
A1SQ.1.2: [2]	25:(5)[2]	47:(2)[2]						
A1SQ.1.3: [3]	6:(6)[2]	25:(1)[1]	47:(5)[1]					
A1SQ.1.4: [3]	6:(1)[2]							



A1SQ.1.5: [2]	22:(5)[2]	33:(2)[2]	35:(1)[2]					
A1SQ.1.6: [2]	16:(9)[2]	22:(1)[1]						
A1SQ.1.7: [2]	22:(2)[2]	33:(7)[2]						
A1SQ.1.8								
A1SQ.2.0: [3]	5:(9)[2]							
A1SQ.2.1								
A1SQ.2.2								
A1SQ.3.0								
A1SQ.3.1: [2]	46:(9)[1]							
A1SQ.3.2								
A1SQ.3.3								
A1SQ.3.4								

## Mathematics Geometry

Table 10.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Geometry*

*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
GCO.0.0 Congruence	1	13	1 2 3	1 7 5	7.69 53.85 38.46	11.5	1.29	YES
GSRT.0.0 "Similarity, Right Tr...	1	8.25	2 3	5 3	62.5 37.5	13.5	1.29	YES
GCGM.0.0 Circles and Geometric...	4	13.5	2 3 4	11 1 1	84.62 7.69 7.69	13.75	0.5	YES
GGP.0.0 Geometric Properties w...	1	5	1 2 3	1 3 1	20 60 20	8.25	0.96	YES
Total	7	39.75	1 2 3 4	2 26 10 1	5 67 26 3	47	0	

Table 10.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Geometry*

*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Items						DOK Consistency
Title	Cluster#	Stds#	M	S.D	%Under	SD	%At	SD	%Above	SD	
GCO.0.0 Congruence	1	13	11.5	1.29	54.34	9	45.66	9	0	0	WEAK
GSRT.0.0 "Similarity, Right Tr...	1	8.25	13.5	1.29	83.43	9	16.57	9	0	0	NO
GCGM.0.0 Circles and Geometric...	4	13.5	13.75	0.5	52.2	21	44.09	20	3.71	4	WEAK
GGP.0.0 Geometric Properties w...	1	5	8.25	0.96	42.66	7	42.31	3	15.03	5	YES
Total	7	39.75	47	0	60.11	8.9	36.17	9	3.72	2	

*Table 10.3*  
*Range-of-Knowledge Correspondence and Balance of Representation between Standards and*  
*Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Geometry*  
*Number of Assessment Items - 47*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster#	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
GCO.0.0 Congruence	1	13	11.5	1.29	7	1.41	53.85	10.88	YES	24	3	0.76	0.05	YES
GSRT.0.0 "Similarity, Right Tr...	1	8.25	13.5	1.29	6.25	1.26	75.35	10.78	YES	29	3	0.79	0.03	YES
GCGM.0.0 Circles and Geometric...	4	13.5	13.75	0.5	6.75	1.71	49.73	10.83	WEAK	29	1	0.78	0.04	YES
GGP.0.0 Geometric Properties w...	1	5	8.25	0.96	4.25	0.5	85	10	YES	18	2	0.88	0.04	YES
Total	7	39.75	47	0	6.1	1.25	65.98	17		25	5	0.8	0.05	

*Table 10.4*  
*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated*  
*by Nine Reviewers*  
*AzMERIT 2017 Geometry*  
*Number of Assessment Items - 47*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
GCO.0.0 Congruence	YES	WEAK	YES	YES
GSRT.0.0 "Similarity, Right Tr...	YES	NO	YES	YES
GCGM.0.0 Circles and Geometric...	YES	WEAK	WEAK	YES
GGP.0.0 Geometric Properties w...	YES	YES	YES	YES

Table 10.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation AzMERIT 2017 Geometry Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8	Reviewer 9
1	2	2	2	2					
2	2	2	2	2					
3	2	1	2	2					
4	1	1	1	1					
5	2	2	2	2					
6	2	2	2	1					
7	2	2	2	3					
8	2	1	1	1					
9	2	2	2	2					
10	2	1	2	2					
11	2	1	1	1					
16	2	2	2	2					
17	1	1	1	1					
18	1	2	1	1					
19	1	1	1	1					
20	2	2	2	2					
21	3	2	2	2					
22	2	1	1	1					
23	2	2	2	2					
24	1	1	1	1					
25	1	1	1	1					
26	2	2	2	1					
27	2	2	2	1					
28	2	2	2	2					
29	1	1	1	1					
30	2	1	1	1					
31	2	1	1	1					
32	2	2	2	2					
33	1	1	1	2					
34	2	2	2	1					
35	2	2	2	2					
36	2	2	2	2					
37	2	2	2	2					
41	2	2	2	2					
42	2	1	2	2					
43	1	1	1	1					
44	2	2	2	1					
45	1	1	1	2					
46	2	1	1	1					
47	2	2	2	2					
48	2	2	2	1					
49	1	2	2	2					
50	2	2	2	2					
51	2	2	2	1					
52	2	2	2	1					
53	2	2	2	2					
54	2	2	2	1					

*Intraclass correlation - .8959**Pairwise Comparison - 0.74*

Table 10.6  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 Geometry*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	2	GCGM.4.3			2	GCGM.4.3			2	GCGM.2.3			2	GCGM.3.1		
2	2	GCO.1.2			2	GCO.1.5			2	GCO.1.2			2	GCO.1.2		
3	2	GGGP.1.4			2	GGGP.1.4			2	GGGP.1.4			1	GGGP.1.4		
4	1	GCGM.4.2			1	GCGM.4.2			1	GCGM.4.2			1	GCGM.4.2		
5	2	GSRT.1.2			2	GSRT.1.2			2	GSRT.1.2			2	GSRT.1.2		
6	2	GGGP.1.3			1	GGGP.1.3			2	GGGP.1.3			2	GGGP.1.3		
7	2	GGGP.1.4			3	GCGM.0.0			2	GSRT.1.6			2	GGGP.1.4		
8	1	GCGM.4.2			1	GCGM.4.2			2	GCGM.4.2			1	GCGM.4.2		
9	2	GCO.1.12			2	GCO.1.12			2	GCO.1.12			2	GCO.1.12		
10	2	GGGP.1.2			2	GGGP.1.1			2	GGGP.1.2			1	GCGM.1.0		
11	1	GCO.1.2			1	GCO.1.7			2	GCO.1.2			1	GCO.1.2		
16	2	GCGM.1.2			2	GCGM.1.2			2	GCGM.1.2			2	GCGM.1.3		
17	1	GCO.1.1			1	GCO.1.1			1	GCO.1.1			1	GCO.1.1		
18	1	GCO.1.9			1	GCO.1.9			1	GCO.1.9			2	GCO.1.9		
19	1	GSRT.1.1			1	GSRT.1.1			1	GSRT.1.1			1	GSRT.1.1		
20	2	GGGP.1.2			2	GGGP.1.2			2	GCO.1.11			2	GGGP.1.2		
21	2	GCGM.2.2			2	GCGM.4.3			3	GCGM.2.2			2	GCGM.2.2		
22	1	GCGM.4.3			1	GSRT.1.8			2	GSRT.1.8			1	GSRT.1.8		
23	2	GSRT.1.4			2	GSRT.1.4			2	GCO.1.10			2	GSRT.1.4		
24	1	GSRT.1.5			1	GSRT.1.3			1	GSRT.1.2			1	GSRT.1.3		
25	1	GCGM.4.1			1	GCGM.4.1			1	GCGM.4.1			1	GCGM.4.1		
26	2	GSRT.1.5			1	GCO.1.9			2	GCO.1.9			2	GCO.1.9		
27	2	GCO.1.2			1	GCO.1.7			2	GCO.1.3			2	GCO.1.7		
28	2	GCO.1.10			2	GCO.1.8			2	GCO.1.10			2	GSRT.1.3		
29	1	GGGP.1.3			1	GGGP.1.3			1	GGGP.1.3			1	GGGP.1.3		
30	1	GSRT.1.8			1	GSRT.1.6			2	GSRT.1.8			1	GSRT.1.8		
31	1	GCGM.1.2			1	GCGM.1.2			2	GCGM.1.2			1	GCGM.1.4		
32	2	GSRT.1.1			2	GSRT.1.1			2	GSRT.1.1			2	GSRT.1.1		
33	1	GGGP.1.5			2	GGGP.1.5			1	GGGP.1.5			1	GGGP.1.5		
34	2	GSRT.1.4			1	GSRT.1.3			2	GSRT.1.4			2	GSRT.1.4		
35	2	GCGM.4.2			2	GCGM.4.2			2	GCGM.4.2			2	GCGM.4.2		
36	2	GSRT.1.1			2	GGGP.1.5			2	GSRT.1.1			2	GSRT.1.1		
37	2	GCGM.4.3			2	GCGM.4.3			2	GCGM.2.2			2	GCGM.4.3		

41	2	GCO.1.9			2	GSRT.1.5			2	GSRT.1.4			2	GSRT.1.4		
42	2	GSRT.1.5			2	GSRT.0.0			2	GSRT.1.5			1	GSRT.1.5		
43	1	GCGM.4.1			1	GCGM.4.1			1	GCGM.4.2			1	GCGM.4.1		
44	2	GSRT.1.5			1	GCO.1.7			2	GSRT.1.5			2	GSRT.1.5		
45	1	GGGP.1.4			2	GGGP.1.4			1	GGGP.1.4			1	GGGP.1.4		
46	1	GCO.1.2			1	GCO.1.2			2	GCO.1.2			1	GCO.1.2		
47	2	GSRT.1.1			2	GSRT.1.1			2	GSRT.1.1			2	GSRT.1.1		
48	2	GCO.1.3			1	GCO.1.3			2	GCO.1.3			2	GCO.1.3		
49	2	GCO.1.9			2	GCO.1.10			1	GCO.1.9			2	GCO.1.9		
50	2	GSRT.1.4			2	GSRT.1.4			2	GSRT.1.4			2	GSRT.1.4		
51	2	GGGP.1.5			1	GGGP.1.5			2	GGGP.1.5			2	GGGP.1.5		
52	2	GCGM.2.3			1	GCGM.2.3			2	GCGM.2.3			2	GCGM.2.3		
53	2	GCGM.2.2			2	GCGM.2.2			2	GCGM.4.2			2	GCGM.2.2		
54	2	GCGM.4.2			1	GCGM.4.2			2	GCGM.4.2			2	GCGM.4.2		
Objective Pairwise Comparison: 0.68																
Standard Pairwise Comparison: 0.88																

Table 10.7 Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers) AzMERIT 2017 Geometry

	Low		Medium		High	
	0		2.4		4	
GCO.0.0						
GCO.1.0						
GCO.1.1	17(4)					
GCO.1.2	11(3)	2(3)	27(1)	46(4)		
GCO.1.3	48(4)	27(1)				
GCO.1.4						
GCO.1.5	2(1)					
GCO.1.6						
GCO.1.7	11(1)	27(2)	44(1)			
GCO.1.8	28(1)					
GCO.1.9	26(3)	41(1)	18(4)	49(3)		
GCO.1.10	49(1)	28(2)	23(1)			
GCO.1.11	20(1)					
GCO.1.12	9(4)					
GCO.1.13						
GSRT.0.0	42(1)					
GSRT.1.0						
GSRT.1.1	47(4)	19(4)	36(3)	32(4)		
GSRT.1.2	24(1)	5(4)				
GSRT.1.3	24(2)	28(1)	34(1)			
GSRT.1.4	34(3)	41(2)	23(3)	50(4)		
GSRT.1.5	42(3)	44(3)	24(1)	41(1)	26(1)	
GSRT.1.6	30(1)	7(1)				
GSRT.1.7						
GSRT.1.8	30(3)	22(3)				
GCGM.0.0	7(1)					
GCGM.1.0	10(1)					
GCGM.1.1						

GCGM.1.2	16(3)	31(3)				
GCGM.1.3	16(1)					
GCGM.1.4	31(1)					
GCGM.2.0						
GCGM.2.1						
GCGM.2.2	37(1)	21(3)	53(3)			
GCGM.2.3	52(4)	1(1)				
GCGM.3.0						
GCGM.3.1	1(1)					
GCGM.3.2						
GCGM.3.3						
GCGM.4.0						
GCGM.4.1	25(4)	43(3)				
GCGM.4.2	43(1)	53(1)	54(4)	35(4)	4(4)	8(4)
GCGM.4.3	1(2)	21(1)	37(3)	22(1)		
GGP.0.0						
GGP.1.0						
GGBP.1.1	10(1)					
GGBP.1.2	10(2)	20(3)				
GGBP.1.3	6(4)	29(4)				
GGBP.1.4	7(2)	3(4)	45(4)			
GGBP.1.5	51(4)	36(1)	33(4)			



Table 10.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
 AzMERIT 2017 Geometry

	Low	Medium	High
	0.8	2.4	4
1 12045	GCGM.2.3:1	GCGM.3.1:1	GCGM.4.3:2
2 10927	GCO.1.2:3	GCO.1.5:1	
3 10931	GGGP.1.4:4		
4 11015	GCGM.4.2:4		
5 11074	GSRT.1.2:4		
6 9722	GGGP.1.3:4		
7 12350	GSRT.1.6:1	GCGM.0.0:1	GGGP.1.4:2
8 13521	GCGM.4.2:4		
9 10910	GCO.1.12:4		
10 12576	GCGM.1.0:1	GGGP.1.1:1	GGGP.1.2:2
11 11315	GCO.1.2:3	GCO.1.7:1	
16 10923	GCGM.1.2:3	GCGM.1.3:1	
17 13505	GCO.1.1:4		
18 11448	GCO.1.9:4		
19 11039	GSRT.1.1:4		
20 11092	GCO.1.11:1	GGGP.1.2:3	
21 12925	GCGM.2.2:3	GCGM.4.3:1	
22 11547	GSRT.1.8:3	GCGM.4.3:1	
23 11026	GCO.1.10:1	GSRT.1.4:3	
24 12931	GSRT.1.2:1	GSRT.1.3:2	GSRT.1.5:1
25 12622	GCGM.4.1:4		
26 13506	GCO.1.9:3	GSRT.1.5:1	
27 11089	GCO.1.2:1	GCO.1.3:1	GCO.1.7:2
28 13497	GCO.1.8:1	GCO.1.10:2	GSRT.1.3:1
29 13500	GGGP.1.3:4		
30 13532	GSRT.1.6:1	GSRT.1.8:3	
31 9556	GCGM.1.2:3	GCGM.1.4:1	
32 12091	GSRT.1.1:4		
33 11792	GGGP.1.5:4		
34 10913	GSRT.1.3:1	GSRT.1.4:3	
35 12152	GCGM.4.2:4		
36 11063	GSRT.1.1:3	GGGP.1.5:1	
37 12342	GCGM.2.2:1	GCGM.4.3:3	

41 11072	GCO.1.9:1	GSRT.1.4:2	GSRT.1.5:1
42 12369	GSRT.0.0:1	GSRT.1.5:3	
43 11523	GCGM.4.1:3	GCGM.4.2:1	
44 11007	GCO.1.7:1	GSRT.1.5:3	
45 10933	GGBP.1.4:4		
46 13499	GCO.1.2:4		
47 11923	GSRT.1.1:4		
48 11062	GCO.1.3:4		
49 11612	GCO.1.9:3	GCO.1.10:1	
50 12656	GSRT.1.4:4		
51 11449	GGBP.1.5:4		
52 13496	GCGM.2.3:4		
53 10987	GCGM.2.2:3	GCGM.4.2:1	
54 11921	GCGM.4.2:4		

Table 10.9

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*  
*AzMERIT 2017 Geometry*

Low DOK		Matched DOK		High DOK

GCO.0.0						
GCO.1.0						
GCO.1.1: [1]	17:(4)[1]					
GCO.1.2: [2]	2:(3)[2]	11:(3)[1]	27:(1)[2]	46:(4)[1]		
GCO.1.3: [2]	27:(1)[2]	48:(4)[2]				
GCO.1.4						
GCO.1.5: [2]	2:(1)[2]					
GCO.1.6						
GCO.1.7: [2]	11:(1)[1]	27:(2)[2]	44:(1)[1]			
GCO.1.8: [2]	28:(1)[2]					
GCO.1.9: [3]	18:(4)[1]	26:(3)[2]	41:(1)[2]	49:(3)[2]		
GCO.1.10: [3]	23:(1)[2]	28:(2)[2]	49:(1)[2]			
GCO.1.11: [3]	20:(1)[2]					
GCO.1.12: [2]	9:(4)[2]					
GCO.1.13						
GSRT.0.0: [3]	42:(1)[2]					
GSRT.1.0						
GSRT.1.1: [3]	19:(4)[1]	32:(4)[2]	36:(3)[2]	47:(4)[2]		
GSRT.1.2: [2]	5:(4)[2]	24:(1)[1]				
GSRT.1.3: [2]	24:(2)[1]	28:(1)[2]	34:(1)[1]			
GSRT.1.4: [3]	23:(3)[2]	34:(3)[2]	41:(2)[2]	50:(4)[2]		
GSRT.1.5: [3]	24:(1)[1]	26:(1)[2]	41:(1)[2]	42:(3)[2]	44:(3)[2]	
GSRT.1.6: [2]	7:(1)[2]	30:(1)[1]				
GSRT.1.7						
GSRT.1.8: [2]	22:(3)[1]	30:(3)[1]				
GCGM.0.0: [3]	7:(1)[3]					
GCGM.1.0: [3]	10:(1)[1]					
GCGM.1.1						
GCGM.1.2: [2]	16:(3)[2]	31:(3)[1]				
GCGM.1.3: [3]	16:(1)[2]					
GCGM.1.4: [2]	31:(1)[1]					
GCGM.2.0						
GCGM.2.1						
GCGM.2.2: [2]	21:(3)[2]	37:(1)[2]	53:(3)[2]			
GCGM.2.3: [2]	1:(1)[2]	52:(4)[2]				
GCGM.3.0						
GCGM.3.1: [2]	1:(1)[2]					
GCGM.3.2						
GCGM.3.3						
GCGM.4.0						
GCGM.4.1: [2]	25:(4)[1]	43:(3)[1]				
GCGM.4.2: [2]	4:(4)[1]	8:(4)[1]	35:(4)[2]	43:(1)[1]	53:(1)[2]	54:(4)[2]
GCGM.4.3: [4]	1:(2)[2]	21:(1)[2]	22:(1)[1]	37:(3)[2]		
GGP.0.0						
GGP.1.0						
GGGP.1.1: [2]	10:(1)[2]					

GGGP.1.2: [3]	10:(2)[2]	20:(3)[2]				
GGGP.1.3: [2]	6:(4)[2]	29:(4)[1]				
GGGP.1.4: [2]	3:(4)[2]	7:(2)[2]	45:(4)[1]			
GGGP.1.5: [1]	33:(4)[1]	36:(1)[2]	51:(4)[2]			

## Mathematics Algebra II

Table 11.1

*Categorical Concurrence between Standards and Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra II*

*Number of Assessment Items - 47*

Reporting Category			Level by Standards			Hits		Categorical Concurrence
Title	Cluster #	Standard #	Level	# of Stds by Level	% w/in RC by Level	Mean	S.D.	
A2A.0.0 Algebra	4	13.25	1 2 3	2 9 2	15.38 69.23 15.38	17.25	2.5	YES
A2F.0.0 Functions	4	15.75	1 2	1 14	6.67 93.33	15.25	2.5	YES
A2SQ.0.0 Statistics and Quanti...	6	22.5	1 2	4 16	20 80	15.5	1	YES
Total	14	51.5	1 2 3	7 39 2	15 81 4	48	0	

Table 11.2

*Depth-of-Knowledge Consistency Between Standards as Assessment as Rated by Nine Reviewers*

*AzMERIT 2017 Algebra II*

*Number of Assessment Items - 47*

Reporting Category			Hits		DOK Level of Items						DOK Consistency
Title	Cluster #	Stds #	M	S.D	% Under	SD	% At	SD	% Above	SD	
A2A.0.0 Algebra	4	13.25	17.25	2.5	43.6	20	44.84	16	11.56	8	YES
A2F.0.0 Functions	4	15.75	15.25	2.5	47.99	25	52.01	25	0	0	YES
A2SQ.0.0 Statistics and Quanti...	6	22.5	15.5	1	26.34	19	52.68	28	20.98	12	YES
Total	14	51.5	48	0	38.02	9.7	51.04	8.6	10.94	6.7	

*Table 11.3*  
*Range-of-Knowledge Correspondence and Balance of Representation between Standards and*  
*Assessment as Rated by Nine Reviewers*  
*AzMERIT 2017 Algebra II*  
*Number of Assessment Items - 47*

Reporting Category			Hits		Range of Standards				Range of Know	% of Hits of Total Hits		Balance Index		Bal of Rep
					# Stds Hit		% of Total							
Title	Cluster#	Stds#	M	S.D	M	S.D	M	S.D		M	S.D	M	S.D	
A2A.0.0 Algebra	4	13.25	17.25	2.5	8.5	1.29	64.42	11.48	YES	37	5	0.84	0.03	YES
A2F.0.0 Functions	4	15.75	15.25	2.5	10.5	1	66.77	7.34	YES	32	5	0.8	0.02	YES
A2SQ.0.0 Statistics and Quanti...	6	22.5	15.5	1	10.75	1.26	47.73	4.88	WEAK	31	2	0.8	0.02	YES
Total	14	51.5	48	0	9.9	1.23	59.64	10		33	3	0.81	0.03	

*Table 11.4*  
*Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated*  
*by Nine Reviewers*  
*AzMERIT 2017 Algebra II*  
*Number of Assessment Items - 47*

Standards		Alignment	Criteria	
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
A2A.0.0 Algebra	YES	YES	YES	YES
A2F.0.0 Functions	YES	YES	YES	YES
A2SQ.0.0 Statistics and Quanti...	YES	YES	WEAK	YES

Table 11.5 *Depth-of-Knowledge Levels by Item and Reviewers Intraclass Correlation AzMERIT 2017 Algebra II Reviewer's DOK*

Item	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	Reviewer 6	Reviewer 7	Reviewer 8	Reviewer 9
1						1	2	1	2
2						1	1	1	1
3						1	1	1	1
4						2	2	2	2
5						1	2	1	2
6						1	2	1	2
7						2	2	1	1
8						1	1	2	2
9						3	2	2	3
10						1	1	1	2
11						2	2	2	2
16						2	1	1	2
17						2	2	1	1
18						1	1	1	2
19						1	1	1	2
20						1	2	2	1
21						2	1	1	2
22						2	1	2	2
23						1	2	2	2
24						1	2	2	1
25						1	1	1	2
26						1	2	1	1
27						1	1	1	2
28						1	1	1	1
29						1	2	1	2
30						2	2	2	1
31						2	2	2	2
32						1	2	2	2
33						1	2	2	2
34						1	1	1	2
35						1	2	2	2
36						2	1	2	1
37						1	2	2	1
41						1	1	1	2
42						2	1	1	2
43						2	1	2	2
44						1	2	1	1
45						2	2	2	2
46						2	1	2	2
47						1	1	1	2
48						1	1	1	1
49						1	1	1	1
50						1	1	1	1
51						2	2	3	3
52						2	1	2	2
53						2	1	2	2
54						1	2	1	1

*Intraclass correlation - .6833**Pairwise Comparison - 0.55*

Table 11.6  
*DOK Levels and Objectives Code by Each Reviewer*  
*AzMERIT 2017 Algebra II*

Number of Reviewers: Nine

Item	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj	DOK	Obj	S1 Obj	S2 Obj
1	1	A2F.2.1			1	A2F.2.1			2	A2F.2.1			2	A2F.2.1		
2	1	A2SQ.4.2			1	A2A.1.2			1	A2SQ.4.2			1	A2SQ.4.2		
3	1	A2SQ.6.1			1	A2SQ.6.1			1	A2SQ.6.1			1	A2SQ.6.1		
4	2	A2A.1.1			2	A2A.1.1			2	A2F.1.1			2	A2A.1.1		
5	1	A2F.1.2			1	A2F.1.2			2	A2F.1.2			2	A2F.1.2		
6	1	A2F.4.3			1	A2F.4.3			2	A2F.4.3			2	A2F.4.3		
7	1	A2F.1.1			2	A2F.1.1			2	A2F.1.1			1	A2F.1.1		
8	2	A2A.4.1			1	A2A.4.1			1	A2A.4.1			2	A2A.4.1		
9	2	A2SQ.3.5			3	A2SQ.3.5			2	A2SQ.3.5			3	A2SQ.3.5		
10	1	A2A.2.4			1	A2A.2.4			1	A2A.2.4			2	A2A.2.4		
11	2	A2A.2.3			2	A2F.2.3			2	A2F.1.5			2	A2F.2.3		
16	1	A2F.3.1			2	A2F.3.1			1	A2F.3.1			2	A2F.3.1		
17	1	A2SQ.1.1			2	A2SQ.1.1			2	A2SQ.1.1			1	A2SQ.1.1		
18	1	A2A.1.2			1	A2A.1.2			1	A2A.1.2			2	A2SQ.4.2		
19	1	A2SQ.6.2			1	A2SQ.6.2			1	A2SQ.6.2			2	A2SQ.6.2		
20	2	A2SQ.2.0			1	A2SQ.0.0			2	A2SQ.2.0			1	A2SQ.2.0		
21	1	A2A.4.3			2	A2A.4.3			1	A2SQ.6.2			2	A2F.4.3		
22	2	A2A.3.1			2	A2F.3.1			1	A2F.3.1			2	A2F.3.1		
23	2	A2A.4.5			1	A2A.4.5			2	A2A.4.5			2	A2A.4.5		
24	2	A2F.3.2			1	A2F.3.2			2	A2F.3.2			1	A2F.3.2		
25	1	A2A.2.4			1	A2F.2.4			1	A2F.2.4			2	A2F.2.4		
26	1	A2SQ.3.0			1	A2SQ.3.0			2	A2SQ.3.0			1	A2SQ.0.0		
27	1	A2F.4.2			1	A2F.4.2			1	A2F.4.1			2	A2F.4.2		
28	1	A2F.4.0			1	A2F.4.0			1	A2F.4.1			1	A2F.4.0		
29	1	A2F.2.1			1	A2F.2.1			2	A2F.2.1			2	A2A.2.1		
30	2	A2SQ.3.0			2	A2SQ.3.0			2	A2SQ.2.1			1	A2SQ.2.3		
31	2	A2A.4.5			2	A2A.4.5			2	A2A.4.5			2	A2A.4.5		
32	2	A2SQ.3.3			1	A2SQ.3.6			2	A2SQ.3.3			2	A2SQ.3.3		
33	2	A2A.2.4			1	A2A.2.4			2	A2A.2.4			2	A2A.2.4		
34	1	A2SQ.0.0			1	A2SQ.0.0			1	A2A.4.0			2	A2SQ.0.0		
35	2	A2F.2.2			1	A2F.2.2			2	A2F.2.2			2	A2F.2.2		
36	2	A2A.4.1			2	A2A.2.2			1	A2A.4.1			1	A2A.4.1		



37	2	A2SQ.3.0			1	A2SQ.3.0			2	A2SQ.2.2			1	A2SQ.3.0		
41	1	A2A.4.4			1	A2A.4.4			1	A2A.4.4			2	A2A.4.4		
42	1	A2A.2.2			2	A2A.2.2			1	A2F.1.3			2	A2A.2.2		
43	2	A2SQ.4.2			2	A2F.3.2			1	A2SQ.4.2			2	A2A.3.1		
44	1	A2SQ.3.4			1	A2SQ.3.6			2	A2SQ.3.4			1	A2SQ.3.1		
45	2	A2SQ.2.1			2	A2SQ.2.1			2	A2SQ.2.1			2	A2SQ.2.1		
46	2	A2F.3.2			2	A2F.3.2			1	A2F.3.2			2	A2F.3.2		
47	1	A2SQ.4.2			1	A2SQ.4.2			1	A2SQ.4.2			2	A2SQ.4.2		
48	1	A2A.4.4			1	A2A.4.5			1	A2A.4.4			1	A2A.4.4		
49	1	A2A.1.1			1	A2A.1.1			1	A2A.1.1			1	A2A.1.1		
50	1	A2A.4.4			1	A2A.4.4			1	A2A.4.4			1	A2A.4.4		
51	3	A2A.2.2			2	A2A.2.2			2	A2F.1.3			3	A2A.2.2		
52	2	A2A.1.1			2	A2A.1.1			1	A2A.1.1			2	A2A.1.1		
53	2	A2A.4.1			2	A2A.4.1			1	A2A.4.1			2	A2A.4.3		
54	1	A2F.3.2			1	A2F.3.2			2	A2F.3.2			1	A2F.3.2		
Objective Pairwise Comparison: 0.72																
Standard Pairwise Comparison: 0.84																

Table 11.7

*Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)*

*AzMERIT 2017 Algebra II*

Low		Medium		High
0		4.8		8
A2A.0.0				
A2A.1.0				
A2A.1.1	4(3)	49(4)	52(4)	
A2A.1.2	2(1)	18(3)		
A2A.1.3				
A2A.2.0				
A2A.2.1	29(1)			
A2A.2.2	36(1)	51(3)	42(3)	
A2A.2.3	11(1)			
A2A.2.4	10(4)	33(4)	25(1)	
A2A.3.0				
A2A.3.1	22(1)	43(1)		
A2A.4.0	34(1)			
A2A.4.1	36(3)	8(4)	53(3)	
A2A.4.2				
A2A.4.3	53(1)	21(2)		
A2A.4.4	41(4)	48(3)	50(4)	
A2A.4.5	48(1)	31(4)	23(4)	
A2F.0.0				
A2F.1.0				
A2F.1.1	7(4)	4(1)		
A2F.1.2	5(4)			
A2F.1.3	51(1)	42(1)		
A2F.1.4				
A2F.1.5	11(1)			

A2F.2.0				
A2F.2.1	1(4)	29(3)		
A2F.2.2	35(4)			
A2F.2.3	11(2)			
A2F.2.4	25(3)			
A2F.3.0				
A2F.3.1	16(4)	22(3)		
A2F.3.2	24(4)	43(1)	46(4)	54(4)
A2F.4.0	28(3)			
A2F.4.1	28(1)	27(1)		
A2F.4.2	27(3)			
A2F.4.3	21(1)	6(4)		
A2F.4.4				
A2SQ.0.0	20(1)	26(1)	34(3)	
A2SQ.1.0				
A2SQ.1.1	17(4)			
A2SQ.1.2				
A2SQ.1.3				
A2SQ.2.0	20(3)			
A2SQ.2.1	30(1)	45(4)		
A2SQ.2.2	37(1)			
A2SQ.2.3	30(1)			
A2SQ.2.4				
A2SQ.3.0	30(2)	26(3)	37(3)	
A2SQ.3.1	44(1)			
A2SQ.3.2				
A2SQ.3.3	32(3)			
A2SQ.3.4	44(2)			
A2SQ.3.5	9(8)			
A2SQ.3.6	32(1)	44(1)		
A2SQ.4.0				
A2SQ.4.1				

A2SQ.4.2	43(2)	47(4)	2(3)	18(1)
A2SQ.5.0				
A2SQ.5.1				
A2SQ.5.2				
A2SQ.5.3				
A2SQ.6.0				
A2SQ.6.1	3(4)			
A2SQ.6.2	19(4)	21(1)		

Table 11.8

*Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)*  
*AzMERIT 2017 Algebra II*

Low		Medium		High
1.6		4.8		8
1 10193	A2F.2.1:4			
2 11541	A2A.1.2:1	A2SQ.4.2:3		
3 10227	A2SQ.6.1:4			
4 10236	A2A.1.1:3	A2F.1.1:1		
5 11121	A2F.1.2:4			
6 9580	A2F.4.3:4			
7 10187	A2F.1.1:4			
8 10203	A2A.4.1:4			
9 12565	A2SQ.3.5:8			
10 13211	A2A.2.4:4			
11 10241	A2A.2.3:1	A2F.1.5:1	A2F.2.3:2	
16 10221	A2F.3.1:4			
17 11836	A2SQ.1.1:4			
18 12354	A2A.1.2:3	A2SQ.4.2:1		
19 13475	A2SQ.6.2:4			
20 12906	A2SQ.0.0:1	A2SQ.2.0:3		
21 13212	A2A.4.3:2	A2F.4.3:1	A2SQ.6.2:1	
22 10220	A2A.3.1:1	A2F.3.1:3		
23 12097	A2A.4.5:4			
24 10192	A2F.3.2:4			
25 11380	A2A.2.4:1	A2F.2.4:3		
26 10217	A2SQ.0.0:1	A2SQ.3.0:3		
27 10256	A2F.4.1:1	A2F.4.2:3		
28 10223	A2F.4.0:3	A2F.4.1:1		
29 10249	A2A.2.1:1	A2F.2.1:3		
30 12076	A2SQ.2.1:1	A2SQ.2.3:1	A2SQ.3.0:2	
31 8253	A2A.4.5:4			
32 11730	A2SQ.3.3:3	A2SQ.3.6:1		
33 11804	A2A.2.4:4			
34 11740	A2A.4.0:1	A2SQ.0.0:3		
35 12611	A2F.2.2:4			
36 12934	A2A.2.2:1	A2A.4.1:3		
37 10210	A2SQ.2.2:1	A2SQ.3.0:3		

41 13204	A2A.4.4:4		
42 12725	A2A.2.2:3	A2F.1.3:1	
43 13206	A2A.3.1:1	A2F.3.2:1	A2SQ.4.2:2
44 11401	A2SQ.3.1:1	A2SQ.3.4:2	A2SQ.3.6:1
45 12027	A2SQ.2.1:4		
46 9567	A2F.3.2:4		
47 10174	A2SQ.4.2:4		
48 10230	A2A.4.4:3	A2A.4.5:1	
49 11725	A2A.1.1:4		
50 12025	A2A.4.4:4		
51 10245	A2A.2.2:3	A2F.1.3:1	
52 12096	A2A.1.1:4		
53 11936	A2A.4.1:3	A2A.4.3:1	
54 13231	A2F.3.2:4		



Table 11.9

*Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])*

*AzMERIT 2017 Algebra II*

Low DOK		Matched DOK		High DOK

A2A.0.0				
A2A.1.0				
A2A.1.1: [2]	4:(3)[2]	49:(4)[1]	52:(4)[2]	
A2A.1.2: [2]	2:(1)[1]	18:(3)[1]		
A2A.1.3				
A2A.2.0				
A2A.2.1: [2]	29:(1)[2]			
A2A.2.2: [2]	36:(1)[2]	42:(3)[2]	51:(3)[3]	
A2A.2.3: [3]	11:(1)[2]			
A2A.2.4: [1]	10:(4)[1]	25:(1)[1]	33:(4)[2]	
A2A.3.0				
A2A.3.1: [2]	22:(1)[2]	43:(1)[2]		
A2A.4.0: [3]	34:(1)[1]			
A2A.4.1: [2]	8:(4)[2]	36:(3)[1]	53:(3)[2]	
A2A.4.2				
A2A.4.3: [1]	21:(2)[2]	53:(1)[2]		
A2A.4.4: [2]	41:(4)[1]	48:(3)[1]	50:(4)[1]	
A2A.4.5: [2]	23:(4)[2]	31:(4)[2]	48:(1)[1]	
A2F.0.0				
A2F.1.0				
A2F.1.1: [2]	4:(1)[2]	7:(4)[2]		
A2F.1.2: [2]	5:(4)[2]			
A2F.1.3: [2]	42:(1)[1]	51:(1)[2]		
A2F.1.4				
A2F.1.5: [2]	11:(1)[2]			
A2F.2.0				
A2F.2.1: [2]	1:(4)[2]	29:(3)[1]		
A2F.2.2: [2]	35:(4)[2]			
A2F.2.3: [2]	11:(2)[2]			
A2F.2.4: [2]	25:(3)[1]			
A2F.3.0				
A2F.3.1: [2]	16:(4)[2]	22:(3)[2]		
A2F.3.2: [2]	24:(4)[2]	43:(1)[2]	46:(4)[2]	54:(4)[1]
A2F.4.0: [3]	28:(3)[1]			
A2F.4.1: [1]	27:(1)[1]	28:(1)[1]		
A2F.4.2: [2]	27:(3)[1]			
A2F.4.3: [2]	6:(4)[2]	21:(1)[2]		
A2F.4.4				
A2SQ.0.0: [3]	20:(1)[1]	26:(1)[1]	34:(3)[1]	
A2SQ.1.0				
A2SQ.1.1: [2]	17:(4)[2]			
A2SQ.1.2				
A2SQ.1.3				



A2SQ.2.0: [3]	20:(3)[2]			
A2SQ.2.1: [1]	30:(1)[2]	45:(4)[2]		
A2SQ.2.2: [2]	37:(1)[2]			
A2SQ.2.3: [2]	30:(1)[1]			
A2SQ.2.4				
A2SQ.3.0: [3]	26:(3)[1]	30:(2)[2]	37:(3)[1]	
A2SQ.3.1: [2]	44:(1)[1]			
A2SQ.3.2				
A2SQ.3.3: [2]	32:(3)[2]			
A2SQ.3.4: [2]	44:(2)[2]			
A2SQ.3.5: [2]	9:(8)[2]			
A2SQ.3.6: [2]	32:(1)[1]	44:(1)[1]		
A2SQ.4.0				
A2SQ.4.1				
A2SQ.4.2: [1]	2:(3)[1]	18:(1)[2]	43:(2)[2]	47:(4)[1]
A2SQ.5.0				
A2SQ.5.1				
A2SQ.5.2				
A2SQ.5.3				
A2SQ.6.0				
A2SQ.6.1: [1]	3:(4)[1]			
A2SQ.6.2: [1]	19:(4)[1]	21:(1)[1]		

# Appendix D

## **Reviewers' Notes and Source of Challenge Comments**

Alignment Analysis of the 2017  
Statewide Achievement Assessment  
for English Language Arts and  
Mathematics (AzMERIT) and 2016  
Grade Level Standards, Grades 3-11

December 8, 2017

## Reviewer Notes - ELA

Table 3.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 3 Online*

Notes
Item #1 - 13023 is 3wL.1.1 and 3WL.3.1 - 1 a DOK 3 WL 1.1 WL 3.1 - 1A DOK 3 WL 1.1 WL 3.1 - 1a - dok 3 3 WL 1.1 - 1a WL 1.1 Dok 3
Item #12 - different authors
Item #28 - weak
Item #34 - doesn't fully match

Table 3.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 3 Paper*

Notes
Item #3 - does not distinguish point of view, but addresses point of view - does not distinguish point of view - This question only loosely matches the standard. - does not unpack the true standard, very simplistic
Item #6 - weak, only part of standard
Item #17 - weak and ambiguous
Item #18 - more than 1
Item #19 - not directly linked with fidelity to either one
Item #22 - verb or spelling?
Item #25 - only part of the standard, weak
Item #26 - but different authors, not exact standard
Item #30 - determines lesson, does not explain
Item #33 - The assessment item does not fully match the standard.
Item #41 - pronoun usage not explained
Item #42 - without the guidance of adult and peer - Multiple language standards are being assessed via the rubric. WL 3.1 is broad.

Table 4.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 4 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- 1.a refers to which is opinion 4WL.1.1 with 4WL.3.1 and 4WL 1.4 as secondary objectives.</li> <li>- for 1a DOK3 WL 1.1 WL 1.4 WL 3.1</li> <li>- 1A DOK 3 WL 1.1 WL 3.1 WL 1.4</li> <li>- 1a - 4. WL 1.1 dok 3</li> <li>- 1a. 4WL 1.1</li> <li>- 1a coding WL 1.1, 1.4,3.1</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- not true to the standard</li> </ul>
<p>Item #21</p> <ul style="list-style-type: none"> <li>- not true to the standard</li> </ul>

Table 4.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 4 Paper*

Notes
<p>Item #6</p> <ul style="list-style-type: none"> <li>- not the full standard. Where is the explanation with details?</li> </ul>
<p>Item #8</p> <ul style="list-style-type: none"> <li>- not the full standard; weak</li> </ul>
<p>Item #11</p> <ul style="list-style-type: none"> <li>- weak, not the full standard</li> </ul>
<p>Item #24</p> <ul style="list-style-type: none"> <li>- not full standard</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- 1.9 would make sense based on the progression of the grade 3 standard.</li> <li>- not the full standard</li> </ul>

Table 5.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 5 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- refers to 1a 13239 is opinion. 5WL 1.1 and 5WL 3.1 and 5WL 1.4</li> <li>- 1a DOK 3 WL 1.1 WL 1.4 WL 3.1</li> <li>- 1A DOK 3 WL 1.1 WL 1.4 WL 3.1</li> <li>- 1a - 5.WL.1.1 dok3</li> <li>- 1a - DOK 3 5WL 1.1</li> <li>- 1a WL 1.1, 1.4, 3.1</li> </ul>
<p>Item #8</p> <ul style="list-style-type: none"> <li>- double coded as 2 different standards</li> </ul>

<p>Item #14</p> <ul style="list-style-type: none"> <li>- Stem includes the word "not." Confusing - revise. Difficult and complex. Coded to generic as .2, .3 or .4 does not work. No standards apply to this item. See above.</li> <li>- The question does not fit any standard.</li> <li>- This question relies on the students' ability to listen, organize, and categorize the material accurately to be able to successfully answer. Important skills, but not directly aligned to a specific S &amp; L standard.</li> <li>- This question doesn't really fit well with any of the listening and speaking standards listed.</li> <li>- This assessment item does not address a specific standard.</li> <li>- doesn't fit</li> </ul>
<p>Item #38</p> <ul style="list-style-type: none"> <li>- See notes on paper copy.</li> <li>- Does not address a standard</li> <li>- Does not address a specific standard</li> <li>- See paper copy notes</li> <li>- Does not address a standard.</li> <li>- No clear standard</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- no clear standard</li> </ul>

Table 5.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 5 Paper*

Notes
<p>Item #11</p> <ul style="list-style-type: none"> <li>- addresses two standards with A and B</li> </ul>
<p>Item #19</p> <ul style="list-style-type: none"> <li>- two standards between a and b</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- week, not true to the standard</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- only part of the standard</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- loosely tied to this standard because of the inference</li> </ul>
<p>Item #35</p> <ul style="list-style-type: none"> <li>- rewording stem could make this a level 3 as this is somewhat complex.</li> <li>- Had this question been reworded to ask "Why does the author include that Abner sighs" and then discuss the affect, it would have more clearly aligned to DOK 3. As it is, it is a slightly more difficult DOK 2.</li> <li>- we debated dok 2-3, rework this item to make it a clear 3.</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- weakly linked to standard</li> </ul>

Table 6.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 6 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- 1.a. is 6WL1.2, and 1.4 and 2.1</li> <li>- 1a DOK 3 WL 1.1 WL 1.4 WL 2.1</li> <li>- 1A-DOK 3 W 1.1 1.4 2.1</li> <li>- 1a 6 WL 1.1 6 WL 1.4 6 WL 2.1 DOK 3</li> <li>- 1a WL 1.1; WL 1.4; WL2.1</li> <li>- 1a WL 1.1, WL 1.4, WL 2.1</li> </ul>

<p>Item #17</p> <ul style="list-style-type: none"> <li>- does not fit with the standards</li> <li>- Not complete standard</li> <li>- but not true to the complete standard</li> </ul>
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Table 6.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 6 Paper*

Notes
<p>Item #20</p> <ul style="list-style-type: none"> <li>- Also hits RL 1.1 but only at a DOK 2</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- Poor item to have students comb through a passage for two details. Are they key details?</li> </ul>
<p>Item #33</p> <ul style="list-style-type: none"> <li>- If the answer choices also addressed the development of the ideas, this would more closely align to 1.5, and would elevate to DOK 3.</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- no standard for idioms which is what 9108 is assessing.</li> </ul>

Table 7.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 7 Online for grades 7-11 group*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- 1)a the DoK is a 3 and the standard alignment is 7WL.1.2</li> <li>- For 1a (13403), DOK is 4. Standards are WL.1.1 and WL.1.4</li> <li>- 1a hits WL 1.1</li> <li>- 1a: DOK 3 7WL.1.1 7WL.1.4 7WL.1.8 Notes: prompts uses argumentative letter, essay, and multi-paragraph essay, which is confusing to students</li> <li>- 1a -13403 - DOK -3 Standard - WL.7.1.1 Standard - WL.7.1.4</li> <li>- 13403 7.wl.1.1 7.r1.1.9 7.wl.1.4</li> <li>- 1a. WL.1.1 argument writing WL.1.4 audience, purpose, etc. 1.8 citations</li> </ul>
<p>Item #2</p> <ul style="list-style-type: none"> <li>- similar to the notes on 13345 on the paper copy as well this is asking about purpose and how this functions as a whole structure of the text tends to be a level 3. The cognitive process that a student must develop is challenging. They must look at the question, in this case, the first paragraph, and look at the progression of the text and how it fits the whole. Therefore, this is accurately testing their ability to analyze structure and development.</li> </ul>
<p>Item #3</p> <ul style="list-style-type: none"> <li>- There are reasons why a student could answer other answer options correctly- these are plausible alternative distractors.</li> <li>- this gives the student the inference and is asking the students to look for the evidence</li> </ul>
<p>Item #5</p> <ul style="list-style-type: none"> <li>- this goes a bit above supporting a given inference as it says "may" so I elevated it to a 2 for this reason</li> </ul>

Item #6

- I did not believe that this tested anything. It is about speculation and asks for evidence. This is not necessarily an inference so it is not really asking any of our RI standards. It is not a poor question, but in our alignment task this is really a RI.0 in my opinion.

Item #7

- only asking them to pick two themes and leaves out the analysis aspect of the standard as well as the objective summary so in essence this is only assessing one third of the standard there is some level of processing of summarizing the main idea, but this is still lower in our DOK

Item #9

- About the character.  
- This can be seen as both characterization and an inference. 1.1 as them to provide evidence for inference and this question is not actually asking them to do this. Therefore, I am choosing the characterization question standard and using the paragraph 9 portion of the question as the evidence to support the inference portion of the question.

Item #12

- dialogue, being an element of drama, is asking the students to do interpretation of beyond the text and consider the impact on the characterization of these two. They must analyze and describe the author's purpose and how it affects the interpretation of a reading selection.

Item #15

- The second graphic contains data from the second passage.  
- This graphic does not fully fit any of the standards and also contains data from both passages, making it confusing.  
- this task is complex. They are asking students to first figure out what the author's position is and then figure out how the author's choice of graphics even support this unknown position. This is an explanation, generalization, and connection and applying this to the question. Kudos. Both structure and purpose apply in this question.

Item #17

- with all purpose questions, these always ask students to go beyond the text. Determining purpose asks kids to explain, generalize, apply reasoning and show an understanding of ideas while considering impact. Inherently these questions will require a DOK of 3.

Item #18

- it would be most helpful to look at the paper copy notes of this for this item.

Item #19

- alright ... so our ears heard the information and thus it is difficult to assess a question in this manner.. If one is looking at standard 2.2, there is a small portion that says explain how the ideas clarify a topic. If we look at this wording we can fit this question into this portion of the standard and claim alignment without disregarding this question.

Item #20

- explain how the ideas clarify a topic

Item #26

- this is asking for evidence of an inference but also deeper it is asking for the rhetorical effect of language on meaning. How does the language convey the message of how the author is feeling? Thus, this is two standards as one. If I had to elevate one, I would elevate 1.4

Item #27

- Cause and effect mostly, using figure use of words, making inferences applied to reading, closer understanding of text

Item #28

- there is a cognitive distinction asking them to summarize, but the standard actually asks them to provide the summary...so them choosing a statement that summarizes the passage does not meet the standard

<p>Item #31</p> <ul style="list-style-type: none"> <li>- this alignment is weak. We are asking them to determine a theme. We are negating 2/3 of the standard by asking them this simple task.</li> </ul>
<p>Item #32</p> <ul style="list-style-type: none"> <li>- inherently this question is rhetorical analysis of tone. This is NOT a literary analysis question which is what 1.8 would test. There really needs to be some consensus on that issue, however, one might need more study in rhetorical analysis to get at the heart of that. That could elevate this question to a DOK 3.</li> </ul>

Table 7.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 7 Paper (both groups)*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- pretty straight forward but asks for some depth ... what causes, then proceeds to ask for two sentences of support. This goes beyond previous questions that just had one support and asks for the two elevating it to the exact task of the standard.</li> <li>- The directions for the answer choices are not clear on Part B of the paper test.</li> </ul>
<p>Item #2</p> <ul style="list-style-type: none"> <li>- Good distractors in this question</li> <li>- Looking at the descriptions and dialogue to determine character.</li> <li>- this most closely matches 7.RL.6 asking the reader to interpret the narrator's opinion of another character ... there is some credence for 7.RL.3 but it is the narrator's commentary that creates the best alignment with RL.6</li> <li>- doesn't unpack the standard, only an inference, no evidence</li> </ul>
<p>Item #4</p> <ul style="list-style-type: none"> <li>- This does not fully meet the standard (does not analyze how an author develops something- just what the dialogue reveals)</li> <li>- Dialogue extends through selection - inference across entire passage.</li> <li>- due to the amount of inference the students must make in order to answer this question, I am elevating it to a 3. They must analyze the dialogue (element of a story shaping the characters) and determine what it entails about their relationship ... according to the DOK alignment, this would be an "explanation of author's purpose and how it affects the interpretation of a reading selection." Additionally it would ask them to "make inferences on author's purpose using text features."</li> <li>- addresses part of standard only</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- this question does not ask the student to analyze the impact of the word so it does not fully address the standard</li> <li>- Partial. No impact of word choice.</li> <li>- Doesn't address the whole standard</li> </ul>
<p>Item #7</p> <ul style="list-style-type: none"> <li>- The second graphic includes data only found in the second passage, which is confusing.</li> <li>- No standards deal with graphic depictions in text. The thermometer graphic also encompasses data from both articles but that is not referenced anywhere and is confusing.</li> <li>- Graphics are text evidence to support main idea.</li> <li>- this uses organizational structures, evidence, and contexts to support the claims. It deciphers main ideas with key details and summarizes major events. Because the claims are not stated, the questions asks them to determine what they are and then synthesize how the two graphics support these two claims.</li> <li>- Addresses part of standard Of charts considered a section of the passage.</li> </ul>



Item #8

- This does not 'get at' the core of the second half of the standard. (analyzing the development over the course of a text)
- Partial - no summary
- This question is weak which is why I want to warrant it a DOK1. I believe the selection of 2 central ideas is going to ask this to move it to a 2 because of that cognitive movement. It does not have the depth of the "and analyze" that the standard asks. By just asking select two themes, the question only covers 1/2 of the standards, 1/3 if you include provide an objective summary.

Item #9

- Partial - nothing about how distinguishing position.

Item #10

- This is an unnecessarily difficult question in its construction as this is only asking for the difference between experiments, nothing to do with the support of a claim.
- This is a difficult question. The set up is misleading to direct kids to look at how the experiments support the claim, but it is really asking how the experiments are different.
- there is a possibility to taking this to a level of 3. However, the answers are able to be found in the passages which with some close reading the students can actually find them. Looking at the DOK levels, the students are asked to identify and summarize major ideas in the text. They are deciphering the ideas and the task is asking them to explain how each experiment in the passage are different. So the cognition is lower because it is asking them to use specific information from the text to explain given events and ideas. We do not believe that this elevates this in the evaluation.
- The question stem is poorly written.
- There is a lot of processing required to connect ideas between passages.

Item #11

- Does not address the full standard; only one piece of evidence cited
- Standard calls for "several pieces of text evidence to support analysis," but only requires only 1 answer.
- overall as a two part question this is asking students to infer about one part of the text and then find the evidence to support it. The elevation to DOK 2 comes from using clues to distinguish from other points in the text and draw meanings.
- partially served, needs more evidence for 1.1, does not unpack a specific standard, also readability of the passage is very easy.

Item #12

- No analysis of development
- Only part of the standards is assessed. Does not include "objective summary."
- technically the question asking the students a very cursory level of the standards request additionally part two does not even ask for an analysis of either seen through a lens of a piece of fiction it qualifies as 7.RL.2 but then it is still limited in its DOK because it is not that complex ... it is above recall but still limited
- weak connection to standard, lacks evidence, only 1

Item #13

- In part B the language of "before the phrase" and placing options prior to segments of the sentence adds unnecessary difficulty. Suggest creating four options with the lines already segmented out rather than placing the letters before segments. This question solidly asks about context clues- it does not fit directly into any particular standard.
- based on our initial statement on 7.RI.4, determining the meaning of words is DOK 2. Taking this into the context of what phrase will help students determine this will aide the clarification of this as a DOK 2. Also ... the phrasing is a bit awkward on part B
- stem states person; response states code which is a thing. Stem is not consistent language.
- Directions are unclear on the paper test.
- only one answer, not full standard, confusing questions BEFORE, this is a perfect example of what language standards need to be separate.

Item #14

- Standard asks for "several pieces of textual evidence," but there is only 1 correct answer.
- there was discussion around line three and then paragraph 21 and the inferences that had to be made with the connections
- doesn't unpack any specific standard, discussion occurred, not changing, bar is too low.

Item #15

- This asks for the summary of a passage- does not fit in the primary goal of any one standard.
- Does not address any of the RI standards fully
- personal note prior to discussion - since the objective summary is provided this could be as low as a 1. They do not have to work as hard, whereas standard 2 is asking them to actually provide the summary.
- doesn't address a specific standard, only half of one

Item #16

- Does not fully address either standard. Does not ask authors to present different evidence or advance different interpretations (RI 1.9). Does not ask to use this as a means of understanding (RI 1.8)
- Difficult to determine which standard this question actually addresses. It could be about the language or it could be about comparing 2 interpretations of texts, but there are no differences.
- large discussion on the difference between this being two passages and how the students do not have to go back into the passages to answer the questions. There is a cognitive process that must occur, but without having to go back into the text, the synthesis is not that difficult for them at this time. We then entered into a really large discussion into whether or not this could be RI/RL 4. I could not concede to this because I do not believe this is a language standard. It is an evidence standard. This can be reversed. The correct answer from the second part can be moved to the statement and something from passage one could be used as evidence for passage 2.
- This question draws from a literary and informational text to consider various skills associated with reading rather than adhering to one, specific standard.
- we discussed this item and found that we were citing several different standards based on claim.
- Directions for Part B are unclear.
- not necessary to reference the texts, this doesn't unpack any one standard, could easily default to 1.0

Item #17

- Eliminating redundancy.
- we claimed these to be two overall, but this is really a recall of whether or not the student knows how to use comma correctly
- The directions read; Choose the correct word or phrase for each of the following." However, 24 simply underlines a portion of the sentence. It would be more clear if each question had specific directions. Choose the correct way to write this passage. 25 Choose the correct punctuation--B, Choose the correct spelling, etc.

Item #18

- part A represents 7.1.2a and part b is spelling, 7.1.2b - as a whole we deemed these a 1, a traditional usage. In coordination with 24, it seems peculiar to think of one as 2 and one a 1.

Item #20

- The cognitive process that a student must develop is challenging. They must look at the question, in this case, the first paragraph, and look at the progression of the text and how it fits the whole. Therefore, this is accurately testing their ability to analyze structure and development.
- first person narrative.
- mixing narrative and non-fiction

Item #21

- The distractors are misleading.
- Partially - no other position is offered.
- The inference is given to the student so the task becomes less difficult. However, there is no synonym for impressive so it goes above a 1. Additionally, it is only asking for one piece of evidence. It could be argued that this only weakly meets the standard or does not meet it at all.
- See comment on format for item 16. Very distracting.

<p>Item #23</p> <ul style="list-style-type: none"> <li>- Slightly paraphrased w/foretell.</li> <li>- The claim is given to the student so the task becomes less difficult. However, this is asking a student to do some thought in discerning which of these the author is doing to support the claim. They must "decipher main ideas supported by key details." Additionally, it is only asking for one piece of evidence. It could be argued that this only weakly meets the standard or does not meet it at all.</li> <li>- This question addresses a portion of the RI 8 standard to "trace " the argument, but it does not require to evaluate the argument. It begins to look at how the author supports his claim without assessing it.</li> <li>- The passage is a narrative non-fiction, hence items going back and forth between RL and RI.</li> </ul>
<p>Item #24</p> <ul style="list-style-type: none"> <li>- The distractors lower the possible complexity of this item.</li> <li>- This is a better attempt at the standard because the word may indicate a possibility of doubt, therefore the inferences is not explicitly stated. The evidence needs to have students think more deeply about the claim stated and the evidence that is supporting it.</li> <li>- RL and RI are confused by the text and questions.</li> </ul>
<p>Item #25</p> <ul style="list-style-type: none"> <li>- while the students need to read the entire passage and decide which of these might work, I do not see a standard that this is going to match. It is not really asking for evidence. It is asking to go beyond the text in some sense, but it is asking for a hypothesis or claim. That could be RI.8 but that does not trace or evaluate based on other evidence. I find this one problematic. Interested to hear the discussion.</li> <li>- defaulted to this because it doesn't unpack any other standard in any way, requires an inference</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- students are choosing someone else's summary. The standard acts them to provide a summary. In theory this question is not actually testing their ability to do that. It could be disregarded. However, if we want to assess this standard without having them actually write it, we need a drag and drop of salient points of the text or we need to have them do a lesser task such as choose from a canned summary such as this question asks them to do.</li> </ul>
<p>Item #28</p> <ul style="list-style-type: none"> <li>- There is some level of interpretation that needs to occur in this question. I am not sure if it is elevated to the level of 2 but it depends on the student him/herself. There is interaction with the text that is not implicitly stated, therefore it must be elevated to a 2.</li> <li>- items not match standard.</li> <li>- Items do not unpack the standards with fidelity.</li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- Question is about tone, so primary standards must deal with that aspect. However, it is also dealing with two different account.</li> <li>- Both R L and R I</li> <li>- tone emphasized here</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- The term "theme" is used in the question stem, but one of the texts is non-fiction. With non-fiction, teachers tend to use the term "central idea."</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- Part A does not have strong enough context clues to constitute being a question that relies on them (would code as a DoK 1)</li> </ul>

<p>Item #34</p> <ul style="list-style-type: none"> <li>- Partial - only 1 argument. Point of view can be interpreted as an author's claim.</li> <li>- this is asking them to pick two central ideas in a text and analyze their development over the course of the text ... this does not actually do this creating a weak alignment. There is still a cognitive process asking them to discern the argument but there needs to be a stronger alignment to the standard across the questions that are asked of them.</li> <li>- There is no evaluation of the claim.</li> <li>- no evaluation of argument, again no fidelity to standard, only a determination of central...problematic item</li> </ul>
<p>Item #35</p> <ul style="list-style-type: none"> <li>- Structure of the text question.</li> <li>- this does not truly test the authentic nature of 5, although it is a good question</li> </ul>
<p>Item #38</p> <ul style="list-style-type: none"> <li>- only 1 central idea</li> <li>- not the full standard</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- spelling, really?</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- These last writing/language standards are not really writing. Why not separate language standards or access ?in writing?</li> </ul>
<p>Item #42</p> <ul style="list-style-type: none"> <li>- The rubric does not address breakout point e of standard 7WL.1.1</li> <li>- The prompt is slightly unclear when it uses the modes argumentative letter, essay, and multi-paragraph essay. Students may not understand that they should write an essay in the form of a letter.</li> </ul>

Table 8.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 8 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- 1a) 3, WL.1.1</li> <li>- 1a: DOK 3 8WL1.1 8WL.1.5</li> <li>- 1a: DOK 3, 8WL1.1</li> <li>- 1a: DOK 3 WL.1.1 WL.1.4 WL.1.8</li> <li>- 1a - DOK 3, Standard - WL 1.1</li> <li>- 13452 8.wl.1.1 8.wl1.8 8.wl1.4</li> <li>- 1a. DOK 3; WL.1.1; WL.1.4; WL.1.8</li> </ul>
<p>Item #3</p> <ul style="list-style-type: none"> <li>- this can easily be elevated to a level three. This is asking the students to make inferences and consider the impact. Many may say that this is using supporting ideas and summarizing the main events but it seems that this will draw many responses from students. Yet we just calibrated and said that this standard as a whole is DOK 2.</li> </ul>
<p>Item #4</p> <ul style="list-style-type: none"> <li>- It is asking about figuring out which phrase provides that meaning. It could be considered to be an inference by some but in essence this is asking which phrase means she is not superior. The consensus of the group was inference.</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- note: none of the questions 6-10 involve passage one at all so we are not sure why passage one is even in the item of bank</li> </ul>
<p>Item #7</p> <ul style="list-style-type: none"> <li>- note: none of the questions 6-10 involve passage one at all so we are not sure why passage one is even in the item of bank</li> </ul>

<p>Item #8</p> <p>- note: none of the questions 6-10 involve passage one at all so we are not sure why passage one is even in the item of bank</p>
<p>Item #9</p> <p>- The questions in this set do not include any questions from passage 1.</p> <p>- There are no questions about passage 1.</p> <p>- note: none of the questions 6-10 involve passage one at all so we are not sure why passage one is even in the item of bank</p>
<p>Item #10</p> <p>- note: none of the questions 6-10 involve passage one at all so we are not sure why passage one is even in the item of bank</p>
<p>Item #12</p> <p>- more difficult now matching the phrase to the key word</p>
<p>Item #14</p> <p>- what is going on with question part a? I am not sure that this is in line with the standard? Are we testing this to attempt RL8? I will put this but I believe it is a cursory attempt at the standard. I believe we can address this in a better, deeper way.</p>
<p>Item #15</p> <p>- this is not a question of compare and contrast. This is also straightforward. There is not a true analysis of author's purpose or a characterization. It is really an identify of major event, in this case a rose, in the narrative. It requires a comprehension and a processing of the text, but stays at the level of what does it represent. It would have been awesome to see a question that asked the students to compare features and meaning with other texts like a DOK 3 asks.</p>

Table 8.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 8 Paper*

Notes
<p>Item #1</p> <p>- This passage is not relatable</p> <p>- Focus on how the word choice develops the author's attitude which helps to understand the passage. Does not include analogies or allusions.</p>
<p>Item #2</p> <p>- This is very difficult to answer because of the wording (2 sentences before)- just break off each sentence and make it its own answer choice (the nature of determining the correct answer could make a student get this wrong)</p> <p>- this can easily be elevated to a level three. This is asking the students to make inferences and consider the impact. Many may say that this is using supporting ideas and summarizing the main events but it seems that this will draw many responses from students. Yet we just calibrated and said that this standard as a whole is DOK 2.</p>
<p>Item #3</p> <p>- Inference about the narrator and text to support.</p>
<p>Item #4</p> <p>- I chose 1.4 because the meaning is given in the question. It is asking about figuring out which phrase provides that meaning. It could be considered to be an inference by some but in essence this is asking which phrase means she is not superior.</p>
<p>Item #5</p> <p>- Identifying central ideas from the passage - but doesn't look at the development of those ideas the relationships to supporting ideas. No summary.</p>
<p>Item #6</p> <p>- Inference on meaning.</p>

<p>Item #7</p> <ul style="list-style-type: none"> <li>- Need to know what the argument is before can say what would weaken it.</li> <li>- asking for evaluation and decision making of the evidence this goes beyond identification the student must engage in critical reading and attest to the credibility of the message and internal logic</li> </ul>
<p>Item #8</p> <ul style="list-style-type: none"> <li>- the complexity of this question lies in first knowing what the author is thinking and then knowing how to then determine what the concessions Alongside of that, the student must then discern which of the statements listed are then counter to the arguments posited by the author himself really good question</li> </ul>
<p>Item #9</p> <ul style="list-style-type: none"> <li>- This is a good question to assess the standard. :-)</li> <li>- kudos to the developer for a nice rhetorical analysis question</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- No impact of word choice. Context clues.</li> </ul>
<p>Item #11</p> <ul style="list-style-type: none"> <li>- Inference of text evidence.</li> </ul>
<p>Item #12</p> <ul style="list-style-type: none"> <li>- This question seems to have two possible answers, G and H</li> <li>- No impact of the word choice.</li> </ul>
<p>Item #14</p> <ul style="list-style-type: none"> <li>- Not really asking about how the 2nd passage transforms the character. Just how he is different.</li> <li>- what is going on with question part a? I am not sure that this is in line with the standard? Are we testing this to attempt RL8? I will put this but I believe it is a cursory attempt at the standard. I believe we can address this in a better, deeper way.</li> </ul>
<p>Item #15</p> <ul style="list-style-type: none"> <li>- this is not a question of compare and contrast. This is also straight forward. There is not a true analysis of author's purpose or a characterization. It is really an identify of major event, in this case a rose, in the narrative. It requires a comprehension and a processing of the text, but stays at the level of what does it represent. It would have been awesome to see a question that asked the students to compare features and meaning with other texts like a DOK 3 asks.</li> </ul>
<p>Item #16</p> <ul style="list-style-type: none"> <li>- parallel structure of verbs</li> </ul>
<p>Item #17</p> <ul style="list-style-type: none"> <li>- Knowledge of commas</li> </ul>
<p>Item #18</p> <ul style="list-style-type: none"> <li>- Long passage</li> <li>- Spelling</li> </ul>
<p>Item #19</p> <ul style="list-style-type: none"> <li>- Long passage</li> <li>- Need to understand author's claim to be able to choose the evidence that is relevant.</li> <li>- the group went to a 2</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- Long passage</li> <li>- Main idea/claim with support, but no objective summary.</li> <li>- really lower level. asks for one claim and then one piece of evidence. weak alignment for both of the standards. I would honestly not use this question as an alignment for these.</li> </ul>
<p>Item #21</p> <ul style="list-style-type: none"> <li>- Long passage</li> <li>- Connections between ideas and paragraphs.</li> </ul>

<p>Item #22</p> <ul style="list-style-type: none"> <li>- This question is too subjective. None of the answers fully get to purpose of the question</li> <li>- Long passage</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- Suggest changing the word "flawed" in the question- this may trip up some eighth grade students</li> <li>- Long passage</li> <li>- Drawing conclusions from the text.</li> </ul>
<p>Item #24</p> <ul style="list-style-type: none"> <li>- Long passage</li> <li>- Not really analyzing the development. More identifying what the author does or information they provide to develop their central idea.</li> </ul>
<p>Item #25</p> <ul style="list-style-type: none"> <li>- The first passage here seems beyond the grasp, and certainly interest, of eighth graders</li> <li>- Actions reveal character.</li> </ul>
<p>Item #28</p> <ul style="list-style-type: none"> <li>- Using context clues to infer meaning.</li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- Inference</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- Propels the action.</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- How the title of one passage relates to another does not specifically address any one standard in 8RL</li> <li>- It is a literature question, but not sure that it clearly addresses any standard. It discusses the title which may indicate theme, but not in this case. You are connecting the two titles , but no standards seems to fit.</li> </ul>
<p>Item #32</p> <ul style="list-style-type: none"> <li>- Looking at context clues, nut not impact of the word choice</li> </ul>
<p>Item #33</p> <ul style="list-style-type: none"> <li>- No connections to key concepts.</li> </ul>
<p>Item #34</p> <ul style="list-style-type: none"> <li>- No conflicting evidence is presented.</li> </ul>
<p>Item #35</p> <ul style="list-style-type: none"> <li>- Main idea, but not asking about the development of the ideas.</li> <li>- this really needs a part two. It is testing 1/3 of this standard. Unless we have a second portion that asks the students to analyze or asks them a second possible idea then we are getting at a very low level of this standard.</li> </ul>
<p>Item #38</p> <ul style="list-style-type: none"> <li>- Identifying the differences.</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- Using context to understand.</li> </ul>

Table 9.10 Online *Notes by Reviewer - AzMERIT 2017 ELA Grade 9 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- WL.1.1 and DoK 3 for 1a) (item 13566)</li> <li>- 1b: DOK 3 9WL.1.1</li> <li>- 1a: DOK 3, WL1.1</li> <li>- 1a: DOK 3 WL 1.1 WL 1.4 WL 1.8</li> <li>- 1.a - DOK 3 Standard - 9WL 1.1</li> <li>- 3 13566 dok 3 9.wl.1.1 9.wl.1.4 9.wl.1.8</li> <li>- 1a.DOK 3; WL1.1; 1.4; 1.8</li> </ul>
<p>Item #3</p> <ul style="list-style-type: none"> <li>- 20 – 13545 – 2. 1.4 - an interesting way to ask this question I wonder if some will say this is a DOK 3 because they have to make a decision about the tone based on the entirety of the paragraph. I say it is a DOK2 because when you are looking at the paragraph you are using the cue of the word to draw meaning and make an inference. For me, it is not deeper than that yet we all agreed that if you are analyzing the entire paragraph it would be elevated.</li> </ul>
<p>Item #9</p> <ul style="list-style-type: none"> <li>- Suggest reworking this entire question.</li> <li>- Question could be better used to hit 9RL.1.5 if it addressed an effect the structure caused, rather than the reader's understanding.</li> <li>- This question does not address any of the standards enough to classify it</li> <li>- We do not feel this question aligns with any specific standard. It fits better with grade 6 RL1.3.</li> <li>- might be testing a lower standard</li> <li>- Does not fit any standard. More leans to 6th grade.</li> <li>- this is a characterization and structure question but when reading the given standard this really belongs at a different grade level, grade 6 I think</li> </ul>
<p>Item #15</p> <ul style="list-style-type: none"> <li>- Identifying/ Comprehending author's argument.</li> </ul>
<p>Item #18</p> <ul style="list-style-type: none"> <li>- 11 – 12191 – 3. 1.4 -- this discusses rhetorical effect. I believe that goes beyond asking students what does this mean. Therefore I believe that this falls in the realm of making inferences of authors purpose and implied value of the text.</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- 20 – 13545 – 2. 1.4 - an interesting way to ask this question I wonder if some will say this is a DOK 3 because they have to make a decision about the tone based on the entirety of the paragraph. I say it is a DOK2 because when you are looking at the paragraph you are using the cue of the word to draw meaning and make an inference. For me, it is not deeper than that.</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- 26- 12633 – 2 rl 1.2 again we are providing the summary which is not the task of the standard which asks the student him/herself to actually provide the summary this is assessing 1/3 of the standard at a cursory level</li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- 29 – 12631 – 1.5 this does not really get at the heart of standard 1.5 nor the word analyze by asking them to choose two sentences. I can see what is attempted. It is just a weaker alignment</li> </ul>
<p>Item #36</p> <ul style="list-style-type: none"> <li>- 36- 9031 – 3 1.4 could be convinced to go up to a 3 but this one seems a bit simpler than the more complex rhetorical effect questions we have seen</li> </ul>



Table 9.10 Notes by Reviewer - AzMERIT 2017 ELA Grade 9 Paper

Notes
Item #2 - Inference supporting character.
Item #4 - Inference on plot
Item #6 - Structure and connections of the text.
Item #7 - Looking at the rhetoric. - clearly a rhetoric question. Device affecting meaning/author's purpose DOK 3
Item #8 - DOK at 2 because the student doesn't need to think about the how of what is going on, only the what. - will be interesting to see if some want to go to a 2. This is asking about the rhetorical constructs about how the author achieves the purpose/the ideas. I find that to be a more complex task to ask students to comprehend. explain the planning, explain how the purpose of the development affects the ideas. Some may see that a summary, I think it is deeper
Item #10 - Speech and a book. - *** the question asks what is the common theme. This is text dependent. They are not going beyond the text. They do not have to compare features and meanings in essence. This will be interesting to see what the discussion becomes.
Item #11 - this discusses rhetorical effect. I believe that goes beyond asking students what does this mean. Therefore I believe that this falls in the realm of making inferences of author's purpose and implied value of the text.
Item #12 - Answers just provide the information. It's not about the how it is supporting. Just what it is.
Item #14 - Internal structure - this series paper 18-22 WAT 11-15 is a nice set of questions for rhetorical analysis covering standards 1.4 through 1.6 would like to see some 1.3 but still nice :D
Item #15 - Just finding support.
Item #20 - an interesting way to ask this question I wonder if some will say this is a DOK 3 because they have to make a decision about the tone based on the entirety of the paragraph. I say it is a DOK2 because when you are looking at the paragraph you are using the cue of the word to draw meaning and make an inference. For me, it is not deeper than that but it is like a 2+ / 3-
Item #23 - ???
Item #26 - again we are providing the summary which is not the task of the standard which asks the student him/herself to actually provide the summary this is assessing 1/3 of the standard at a cursory level
Item #28 - Answers in part b align with part a. Not cognitively difficult.
Item #29 - this does not really get at the heart of standard 1.5 nor the word analyze by asking them to choose two sentences. I can see what is attempted. It is just a weaker alignment

<p>Item #33</p> <p>- I know they want to say 1.7 but two different artistic mediums does NOT mean two different literary pieces. Just an FYI. DOK 3 ... inferences across multiple paragraphs, compare and contract across more than one passage</p>
<p>Item #35</p> <p>- Looking for evidence</p>
<p>Item #36</p> <p>- could be convinced to go up to a 3 but this one seems a bit simpler than the more complex rhetorical effect questions we have seen</p>
<p>Item #39</p> <p>- NOTE: I put two standards if it can be considered that look at rhetorical strategies really is an analysis ... 1.9 is a slim possibility here but the next item is better at 1.9</p>

Table 10.10 online *Notes by Reviewer - AzMERIT 2017 ELA Grade 10 Online*

Notes
<p>Item #1</p> <p>- 1a) is a dok 3 and meets standard WL.1.1.</p> <p>- 1a: DOK 10WL.1.1</p> <p>- 1a: DOK 3 WL1.1 WL1.4 WL1.8</p> <p>- 1a - DOK - 3 Standard WL 1.1</p> <p>- 1a 13640 10.wl.1.1 10.w.1.4 10.wl.1.8</p> <p>- 1a: DOK 3; WL 1.1</p> <p>- 1a. DOK 3; WL1.1, 1.4; 1.8</p>
<p>Item #19</p> <p>- loose alignment</p>
<p>Item #24</p> <p>- 9825 some will probably say 1.9 but this really is asking what is the theme of both passages. This is really not an analysis of two passages, nor how they address related themes. It is a very, very cursory and poor attempt to get at this standard.</p>
<p>Item #31</p> <p>- This does not meet any one standard.</p> <p>- Doesn't fit anywhere.</p> <p>- This doesn't address a standard fully</p> <p>- The pattern of development does not fit within any standard.</p> <p>- Rhetorical modes--could fit in 1.3, 1.5, 1.6</p> <p>- Didn't really fit a standard.</p> <p>- 13592 the choices are rhetorical modes or paradigms. They are not fully addressing the standards as written. There was discussion around purpose and organization regarding this question.</p>
<p>Item #35</p> <p>- I wonder if people are going to put a 2 on this, but let's face it Hamlet is SOOOOO difficult to interpret. The level of complexity itself elevates what we are asking students to do. They will have to go beyond a literal interpretation of the text into a figurative interpretation of the text to figure out how to answer this question. Also we are asking for detail and inference all in the same question. The group as a whole did as I thought and chose a 2 overall</p>

Table 10.10 paper *Notes by Reviewer - AzMERIT 2017 ELA Grade 10 Paper*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- no cumulative impact of word choice</li> </ul>
<p>Item #4</p> <ul style="list-style-type: none"> <li>- Need to infer how the narrator feels before being able to select text support.</li> <li>- this one is harder to determine ... calls for support but deals with the interaction between the two characters</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- this is a limited alignment of this standard</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- this is loosely aligned with only 1/3 of the standard would be strengthened with a part b</li> </ul>
<p>Item #12</p> <ul style="list-style-type: none"> <li>- No cumulative impact</li> </ul>
<p>Item #14</p> <ul style="list-style-type: none"> <li>- This is trying to assess this standard but could be better worded</li> <li>- Since both texts are informational, the term "central idea" should be used in the question stem.</li> <li>- Should go deeper to actually hit the standard.</li> <li>- Not the how, just the what of the question. Good effort in trying to assess this standard.</li> <li>- some will probably say 1.9 but this really is asking what is the theme of both passages. This is really not an analysis of two passages, nor how they address related themes. It is a very, very cursory and poor attempt to get at this standard.</li> </ul>
<p>Item #16</p> <ul style="list-style-type: none"> <li>- This question has two possible answers (B and D). Both have the same meaning and come down to a stylistic choice</li> </ul>
<p>Item #19</p> <ul style="list-style-type: none"> <li>- No cumulative impact</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- This does not fully fall within the purview of any standard.</li> <li>- It seems to hit 1.3 but not really.</li> <li>- The question does not meaningfully address any of the RI standards. It does not ask for a POV or purpose, it does not ask to identify a claim, it does not ask to show connections between anything. It simply asks to pick between rhetorical possibilities</li> <li>- This question does not clearly address any one standard. We felt it hit a portion of 1.3 and 1.5.</li> <li>- Question is asking about the rhetorical modes used to develop which could fit into 1.3 but an argument can also be made for 1.6 and/or 1.5.</li> <li>- Just recognition of the pattern. Just identifying the strategy being used. This does not fully and clearly address any one particular strategy.</li> <li>- the choices are rhetorical modes or paradigms. They are not fully addressing the standards as written. There was discussion around purpose and organization regarding this question.</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- This is unnecessarily difficult for a 10th grader. Would recommend considering exactly what standards you wish to address and altering the texts- these will not allow many students to show they are capable of meeting the standard due to the language demands.</li> <li>- This passage is too long ... kids will stop reading.</li> <li>- No impact of word choice. Just determining the meaning of phrases.</li> </ul>

<p>Item #24</p> <ul style="list-style-type: none"> <li>- This passage is too long ... kids will stop reading.</li> <li>- Need to understand the motivation of the character.</li> <li>- I wonder if people are going to put a 2 on this, but let's face it Hamlet is SOOOOO difficult to interpret. The level of complexity itself elevates what we are asking students to do. They will have to go beyond a literal interpretation of the text into a figurative interpretation of the text to figure out how to answer this question. Also we are asking for detail and inference all in the same question. kudos on a difficult question</li> </ul>
<p>Item #25</p> <ul style="list-style-type: none"> <li>- nailed the standard</li> </ul>
<p>Item #27</p> <ul style="list-style-type: none"> <li>- Identification, but connection.</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- This item and item 12474 are basically the same question.</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- This question and item 12473 are basically the same question.</li> <li>- This is the same as the previous question</li> </ul>
<p>Item #36</p> <ul style="list-style-type: none"> <li>- Nothing in the standards about counterclaims.</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- The question mentions paragraphs 11 and 12, but the comments don't appear in paragraph 12.</li> </ul>
<p>Item #40</p> <ul style="list-style-type: none"> <li>- Given the idea - looking for support.</li> </ul>

Table 11.10 *Notes by Reviewer - AzMERIT 2017 ELA Grade 11 Online*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- Same dok for 1a but the standard is WL1.1</li> <li>- 1a: DOK 3 11WL.1.1, 11WL.1.8</li> <li>- 1a: DOK 3, WL 1.1</li> <li>- 1a: DOK 3 WL 1.1 WL1.8</li> <li>- 1.a - DOK 3 Standard WL11.1.1</li> <li>- 13722 dok 3 11.wl.1.1 11.wl.1.8</li> <li>- 1a. DOK 3; WL.1.1,1.4,1.8</li> </ul>
<p>Item #2</p> <ul style="list-style-type: none"> <li>- A student has to know the word “intrepid” to answer this. Poses a problem</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- loosely connected</li> </ul>
<p>Item #9</p> <ul style="list-style-type: none"> <li>- very loosely connected</li> </ul>
<p>Item #14</p> <ul style="list-style-type: none"> <li>- very loosely connected</li> </ul>

<p>Item #20</p> <ul style="list-style-type: none"> <li>- This relies on historical knowledge- does not rely on two texts/comparison</li> <li>- The foreshadowing from one passage to the other is really historical foreshadowing. It's not a literary element.</li> <li>- Item was hard to fit into just one standard...seemed to be trying to address 1.9 or 1.8</li> <li>- Does not fit with any standard.</li> <li>- 8871 we see the attempt at connecting. people felt strongly that this could not meet the standards. I felt that this was a good attempt at 1.9</li> </ul>
<p>Item #21</p> <ul style="list-style-type: none"> <li>- This does not fit squarely into any DoK or standard because we could not how students would be evaluated. The dok could go as high as a 3 if evaluative criteria were available because it seems to want to get at authorial intent.</li> <li>- The standard depends on the rubric for judging the short answer.</li> <li>- While I think the intent of this question is to get to a DOK 3, I don't believe that the implementation of the question allows it to achieve that level</li> <li>- Intent is to determine if students understood the author's ideas from the audio.</li> <li>- we are listening we are then trying to figure out why did he choose those words ... therefore this is a use of rhetoric question</li> </ul>
<p>Item #22</p> <ul style="list-style-type: none"> <li>- again we are being asked to evaluate the rhetoric of the speaker</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- 2/3 fence here. The answers are again provided. Do the kids think, yes. But with the answers provided, the level of thinking is lessened for them.</li> </ul>
<p>Item #33</p> <ul style="list-style-type: none"> <li>- loosely connected</li> </ul>
<p>Item #35</p> <ul style="list-style-type: none"> <li>- slight struggle with this. Adjudication may need to occur. Asks about technique but then support for the technique. 1.5 could be a stretch. Some may say 1.0. we decided upon 1.1</li> </ul>
<p>Item #38</p> <ul style="list-style-type: none"> <li>- not asking hard enough question to truly get at the standard</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- 12842 if the question were to evaluate the effectiveness of the structure of the argument, this would better represent the standard</li> </ul>

Table 11.10 *Notes by Reviewer - AzMERIT 2017 ELA Grade 11 Paper*

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- This is a case where there could be multiple plausible answers and students must know the word “intrepid” to answer this correctly.</li> </ul>
<p>Item #2</p> <ul style="list-style-type: none"> <li>- very very loosely connected :(</li> </ul>
<p>Item #5</p> <ul style="list-style-type: none"> <li>- Addresses only part of the standard.</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- loosely connected</li> </ul>

<p>Item #13</p> <ul style="list-style-type: none"> <li>- This foreshadows a historical event, does not rely squarely on the text. Does not fit well into any one standard.</li> <li>- This could perhaps hit 11.RI.1.9, but the question doesn't address theme, purpose, or rhetoric. Rather, it asks about a simple connection between the texts.</li> <li>- This answers part 1.8 and part 1.9 but neither strongly enough to warrant alignment</li> <li>- This question did not clearly address any one standard.</li> <li>- Doesn't really fit any standard completely.</li> <li>- we see the attempt at connecting. people felt strongly that this could not meet the standards. I felt that this was a good attempt at 1.9</li> </ul>
<p>Item #14</p> <ul style="list-style-type: none"> <li>- This item is much too difficult (the text). Many students will get this wrong because of this difficulty.</li> </ul>
<p>Item #15</p> <ul style="list-style-type: none"> <li>- Doesn't address the whole standard.</li> </ul>
<p>Item #18</p> <ul style="list-style-type: none"> <li>- This is very similar to the previous question</li> <li>- the answers are there. It will be interesting to see if some go three.</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- this is 8972 on the paper – typo</li> </ul>
<p>Item #24</p> <ul style="list-style-type: none"> <li>- 2/3 fence here. The answers are again provided. Do the kids think, yes. But with the answers provided, the level of thinking is lessened for them.</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- so very weakly aligned ... 1/3 of the standard</li> </ul>
<p>Item #28</p> <ul style="list-style-type: none"> <li>- slight struggle with this. Adjudication may need to occur. Asks about technique but then support for the technique. 1.5 could be a stretch. Some may say 1.0</li> </ul>
<p>Item #31</p> <ul style="list-style-type: none"> <li>- really not addressing a standard ... it asks what the purpose is but that is a grade 9/10 standard. This does not really hit 1.6 that well at all</li> </ul>
<p>Item #32</p> <ul style="list-style-type: none"> <li>- not asking a hard enough question to get at approaching the standard</li> </ul>
<p>Item #33</p> <ul style="list-style-type: none"> <li>- if the question were to evaluate the effectiveness of the structure of the argument, this would better represent the standard</li> </ul>
<p>Item #34</p> <ul style="list-style-type: none"> <li>- I really like this question Kudos to you</li> </ul>
<p>Item #36</p> <ul style="list-style-type: none"> <li>- this is a good question.</li> </ul>
<p>Item #37</p> <ul style="list-style-type: none"> <li>- very loosely connected</li> </ul>
<p>Item #40</p> <ul style="list-style-type: none"> <li>- so very loose!</li> </ul>

## Source of Challenge – ELA

Table 3.11 paper

*Source-of-Challenge Issues by Reviewer - AzMERIT 2017 ELA Grade 3 Paper*

Sources of Challenge
<p>Item #17</p> <ul style="list-style-type: none"> <li>- There are 2 answers that could be considered correct. Part A-c strong and part B-e power of ten tigers seem to be the best selections. However, a student could select a-smart and b-here she did not have to wait for gray hairs to be considered wise. I understand this may be more difficult but I want to ensure that such a close distinction was intentional. Particularly in 3rd grade.</li> </ul>

Table 7.11 Online

*Source-of-Challenge Issues by Reviewer - AzMERIT 2017 ELA Grade 7 Online*

Sources of Challenge
<p>Item #9</p> <ul style="list-style-type: none"> <li>- Options C and D could both technically be correct.</li> </ul>

Table 7.11 paper

*Source-of-Challenge Issues by Reviewer Paper - AzMERIT 2017 ELA Grade 7 Paper*

Sources of Challenge
<p>Item #2</p> <ul style="list-style-type: none"> <li>- Answer and distractor are almost too similar (C &amp; D).</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- Wording of questions leads to confusion of what the actual task expected is.</li> </ul>
<p>Item #13</p> <ul style="list-style-type: none"> <li>- The bubbling instructions are confusing, as is the identification of which bubble applies to which part.</li> </ul>
<p>Item #21</p> <ul style="list-style-type: none"> <li>- No answer here shows that the author is "impressed"</li> <li>- A and F could be argued as answers with A ending up being the BEST answer.</li> </ul>

Table 8.11

*Source-of-Challenge Issues by Reviewer - AzMERIT 2017 ELA Grade 8 Paper*

Sources of Challenge
<p>Item #1</p> <ul style="list-style-type: none"> <li>- This item does not have a clear answer and could be answered correctly/incorrectly for the wrong reason. There are arguments to be made for multiple answers.</li> <li>- This question does not have an objective answer. Also, the description of the language choices do not necessarily match the effect</li> </ul>
<p>Item #21</p> <ul style="list-style-type: none"> <li>- There are rationales for other answers (including a) to the extent that a student may answer this incorrectly/correctly for the wrong reasons.</li> <li>- long passage</li> </ul>

Table 9.11

*Source-of-Challenge Issues by Reviewer - AzMERIT 2017 ELA Grade 9 Paper*

Sources of Challenge
<p>Item #28</p> <p>- If you choose A on the top, it has to be A on the bottom...etc.</p>



## Reviewer Notes - Mathematics

Table 3.10 Notes by Reviewer AzMERIT 2017 Math Grade 3

Notes
<p>Item #2</p> <ul style="list-style-type: none"> <li>- no line plot involved</li> <li>- Does not require line graph</li> </ul>
<p>Item #5</p> <ul style="list-style-type: none"> <li>- are fractions of a set included</li> <li>- Curious use of a set model in 3rd grade.</li> <li>- Does not go with any NF standard in 3rd grade. Third does not do part of a set only part of a whole.</li> <li>- This tests the students' ability to find parts of a set and that is not part of the fraction standards for 3rd grade.</li> <li>- It is part of a set but it is not a direct alignment. It is a stretch.</li> <li>- this does not fit into the standard very well.</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- This is not a good match for the standard. This is a part of a whole more so than <math>\frac{1}{a}</math></li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- fractions involving sets</li> <li>- AZ standards do not teach "part of a set" in fractions only part of a whole.</li> <li>- I feel this has to do with parts of a set and this is not in the standards.</li> </ul>
<p>Item #44</p> <ul style="list-style-type: none"> <li>- I think the wording of the question is hard to understand.</li> </ul>
<p>Item #49</p> <ul style="list-style-type: none"> <li>- This problem did not really fit anywhere but forced it into this spot.</li> <li>- The standard needs to be put into a table per the standard.</li> <li>- Standard states pattern in a table but this is just a basic pattern.</li> <li>- Pattern was not in a table</li> </ul>

Table 4.10 Notes by Reviewer AzMERIT 2017 Math Grade 4

Notes
<p>Item #5</p> <ul style="list-style-type: none"> <li>- This is at a third grade level.</li> </ul>
<p>Item #7</p> <ul style="list-style-type: none"> <li>- Compare at a third grade level not 4th.</li> </ul>
<p>Item #17</p> <ul style="list-style-type: none"> <li>- does between include 5 and 7</li> <li>- The use of "between" is ambiguous.</li> <li>- The problem is not clearly presented and can be interpreted in more than one way which would produce more than one correct solution.</li> <li>- I feel that this problem is worded poorly and not setting up the students to succeed. If the cost of the sweaters is between 5-7 dollars then the least amount she can spend on a sweater is \$5.01. Is this the intent?</li> <li>- This problem is confusing in the way it is worded and could generate more than one answer.</li> <li>- wording leads to multiple interpretations</li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- This problem uses third grade numbers.</li> </ul>

Table 5.10 Notes by Reviewer AzMERIT 2017 Math Grade 5

Notes
<p>Item #5</p> <ul style="list-style-type: none"> <li>- Use of word "after" should be replaced with "for."</li> <li>- use of the word after may have multiple meanings</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- Multi-step, seems to go beyond the standard.</li> </ul>
<p>Item #27</p> <ul style="list-style-type: none"> <li>- All answer choices could be interpreted as true. Desired answers seem to be C and E.</li> </ul>
<p>Item #28</p> <ul style="list-style-type: none"> <li>- should say in that one month</li> </ul>
<p>Item #29</p> <ul style="list-style-type: none"> <li>- I am not sure how to code this because of the fraction and the whole numbers correct answer choices. I feel this makes it hard to match.</li> </ul>

Table 6.10 Notes by Reviewer AzMERIT 2017 Math Grade 6

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- Does not fit with any standard. This is simply interpreting a graph and using the information in the first quadrant to find a value off the grid.</li> </ul>

Table 7.10 Notes by Reviewer AzMERIT 2017 Math Grade 7 (both groups)

Notes
<p>Item #1</p> <ul style="list-style-type: none"> <li>- This only addresses the initial part of the standard...solve multi-step mathematical problems. It doesn't address the "problems in real world context" part.</li> </ul>
<p>Item #3</p> <ul style="list-style-type: none"> <li>- This is a fairly straight forward problem but the number of conversions that are occurring together seem to make it difficult to align. 7RP.1.2. Yes, they can ultimately be written as unit rates, but there seems to be more involved. Although I don't see another standard to align with.</li> </ul>
<p>Item #4</p> <ul style="list-style-type: none"> <li>- Requires ability to visualize an inch, no scale drawing of 1 inch is provided.</li> </ul>
<p>Item #6</p> <ul style="list-style-type: none"> <li>- Area is in the standards but not length and width</li> </ul>
<p>Item #8</p> <ul style="list-style-type: none"> <li>- No relating equivalent expressions required - only manipulating notation.</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- This really tests the concept of at least and extends to inequality.</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- The Standard deals with area and circumference but the item deals with circumference and radius. It fits the intent of the Standard but not the letter of the Standard.</li> <li>- Assumption that <math>\pi = 3.14</math>. There is no formula, so there is an assumption that students have memorized this formula, making it basic recall, while it is not a previously covered subject. Does this response allow for more than one answer because it doesn't say round to the nearest hundredth (which does give the same answer if you use <math>\pi</math>'s actual value?</li> </ul>

<p>Item #24</p> <ul style="list-style-type: none"> <li>- match wording children/child or / students</li> <li>- Child versus Student. Student prices can be different than children's prices...There is some run for error on this.</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- not a uniform model</li> <li>- There is no standard in probability that matches solving a simple probability word problem.</li> <li>- I am not sure if this was supposed to be a probability question, if so, I feel it does not fit with any of the probability standards.</li> <li>- This is a simple probability problem yet there is no standard that addresses simple probability.</li> </ul>
<p>Item #27</p> <ul style="list-style-type: none"> <li>- The printed test really should follow universal test design for multiple select answers like the online test. The boxes for multiple select is a context clue that on paper students do not have.</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- Standard does not clearly identify that students should know procedures for independent and dependent variables when calculating probabilities.</li> </ul>
<p>Item #33</p> <ul style="list-style-type: none"> <li>- For multiple select items there should be squares and not circles on the answer document following universal test design</li> </ul>
<p>Item #34</p> <ul style="list-style-type: none"> <li>- same question as 31, different numbers</li> </ul>
<p>Item #37</p> <ul style="list-style-type: none"> <li>- No standard addresses solving a simple expression.</li> </ul>
<p>Item #39</p> <ul style="list-style-type: none"> <li>- not super clear that -2 is not a water level change</li> <li>- I think this question is confusing. There are better ways to assess adding and subtracting integers.</li> </ul>
<p>Item #47</p> <ul style="list-style-type: none"> <li>- does not align to a standard,</li> <li>- Fits in NS, but not into a specific standard.</li> <li>- Doesn't fit with any specific standard.</li> <li>- Does not fit with any of the standards.</li> <li>- Doesn't fit this standard</li> <li>- This problem addresses knowledge of even numbers which is not directly addressed in the standards therefore is coded to the generic Number System standard</li> <li>- Even numbers- does not address standard</li> <li>- This item really assesses understanding of odd and even numbers in a conceptual way.</li> <li>- Does not specifically align to any of the NS standards but it does belong to the Number system.</li> <li>- This question does not really fit any of the standards. It is assessing number theory and students understand of odd and even numbers.</li> <li>- This is not a good item. It is an abstract question on number theory.</li> <li>- This is a number system problem and doesn't really fit the wording of any of the NS standards for grade 7. I question the purpose of this question. Is this number theory or is this just substitute in a number? The purpose might change the DOK.</li> <li>- does not accurately represent any of the specific standards other than specifics to number sense.</li> <li>- The item assesses number sense (even/odd) but the standards deal only with specifics (add, multiply, operations, etc.). The item seems to be misplaced.</li> <li>- This is a time intense problem because you do have to substitute numbers and play with the relationships created. A truly successful student is looking at more than one type of integer to work through this. It is a great problem. Not exactly sure what it codes to.</li> <li>- This is a number sense problem, however it doesn't adequately address any of the standards in this category.</li> </ul>

Item #49
- No probability standard fits writing an equation for an event and solving it. - This item does not fit with any of the standards. It is a basic probability problem.
Item #50
- Not relevant since most of the AZ population has never seen temperatures below zero.
Item #53
- No standard asks for a simple calculation.
Item 54#
- I feel like this question is a trick question. I understand what M.A.D and do not feel that this question is a good reflection of the standard.

Table 8.10 *Notes by Reviewer AzMERIT 2017 Math Grade 8*

Notes
Item #1
- This item only asks students to name the type of transformation in the problem where the standard asks that they verify the properties of transformations. - Very loosely fits. Seems to belong in a lower grade.
Item #3
- Awkward wording . the stem should say "Create a line to represent the relationship of the number of bracelets Dana makes over time. The original reads like it is supposed to be a comparison. Is it? Line graph is also confusing. It reads like bar graph.
Item #10
- A very loose connect to the standard 8F.1.2
Item #22
- This item asks students to find a unit rate which is not a topic in the standards for this grade level. - aligns to 7th grade - Not sure this question fits any of the eighth grade standards. Fits grade 7 RP standards. - It does not fit well into any objective, this was the consensus. - EE 1.5 uses the verbs graph and compare, there isn't a direct match to find the proportional relationship 8F.1.4 has the words rate of change in the standard. This seems more like grade 7. - Does not accurately fit any specific 8.EE.* - The item asks students to compute a unit rate for a proportional relationship displayed in a table. There is nothing in the standards that addresses this. However, EE.1.5 does address proportional relationships and unit rate. This is done using a graph and a line, not a table. The item aligns to a grade 7 standard. - This appears to match 7.RP.A.1. - This seems to be more of a 7th grade standard.
Item #24
- Weird way to ask this question.
Item #25
- Weird way to ask the question. - I feel like this is a VERY loose alignment to using the distributive property & collecting like terms in 8EE.1.7b This seems to be more in alignment with a 7th grade standard, where we are interpreting what the coefficient is.
Item #27
- I don't see a direct connect to a grade 8 standard because the student must understand speed and convert the units. Seems to match HS NQA.1
Item #36
- Feels like the question is using statistics but only asking for an interpretation of the y-intercept. Not sure that this is aligned corrected.
Item #37

- does not allow for operations with irrational numbers
<p>Item #46</p> <ul style="list-style-type: none"> <li>- doesn't fit anywhere</li> <li>- This really doesn't match a 8th grade standard.</li> <li>- This is a super low level identification but I cannot find a good alignment.</li> <li>- The question doesn't fit any of the standards.</li> </ul>
<p>Item #53</p> <ul style="list-style-type: none"> <li>- I cannot find a standard that only addresses congruence, most of them use congruence in rotations, but that is not the intention of this questions.</li> </ul>

Table 9.10 *Notes by Reviewer AzMERIT 2017 Algebra I*

Notes
<p>Item #4</p> <ul style="list-style-type: none"> <li>- This questions is loosely connected to A1A.4.6</li> </ul>
<p>Item #5</p> <ul style="list-style-type: none"> <li>- This item asks students to determine a probability given a table of data, a skill that is not addressed in these standards.</li> <li>- not appropriately aligned</li> <li>- This better fits the Algebra 2 standards.</li> <li>- Doesn't fit the standard.</li> <li>- There is no standard that matches at the algebra 1 level This is basic probability.</li> <li>- determine a <math>p(b)</math> does not address standards</li> <li>- Determine the probability given a table of data is not addressed in the standard.</li> <li>- Doesn't have a good home in the standards with true alignment.</li> <li>- Not addressed in the standards</li> </ul>
<p>Item #8</p> <ul style="list-style-type: none"> <li>- This is simply interpreting, but there is an absence of this level of standards recall. This is a very loose alignment.</li> </ul>
<p>Item #9</p> <ul style="list-style-type: none"> <li>- This item aligns to Algebra 2.</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- The item deals with a function and a relation that is not a function. The standard that this aligns to is in Gr 8 but not in Algebra. (gr 9).</li> </ul>
<p>Item #11</p> <ul style="list-style-type: none"> <li>- This item asks students to create a histogram of a data set which does not fit these standards.</li> <li>- histograms are in lower grades</li> <li>- This loosely fits the standard. The standard wants them to create a data display to compare two or more data sets.</li> <li>- Does not fit the standard.</li> <li>- Histograms are not part of the algebra 1 standards unless they are being compared to another plot type.</li> <li>- histograms not mentioned in standards</li> <li>- The item does not have two or more data sets as the standard (SQ.1.1) requires.</li> <li>- Very low level skill set and appears to be a lower level standard as well.</li> <li>- The purpose of this standard is to draw data sets to compare two or more data sets. This standard as written is at the middle school standard.</li> </ul>
<p>Item #16</p> <ul style="list-style-type: none"> <li>- This also matches F3.4</li> </ul>

<p>Item #18</p> <ul style="list-style-type: none"> <li>- This really is aligned to the mathematical practices</li> <li>- Plotting on a number line just a single value, is beyond low. This seems to be testing error analysis...of a two step equation. Not Algebra 1 appropriate.</li> </ul>
<p>Item #20</p> <ul style="list-style-type: none"> <li>- This question is loosely aligned and seems to better fit the eighth grade standards.</li> <li>- Very loose representation. This is two variable, but it is simply substitution, not systems.</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- This content is not appropriate for this grade level. The content is too advanced for first year algebra.</li> <li>- aligned to Algebra 2 not properly placed</li> <li>- Square root functions are not in the Algebra 1 standards.</li> <li>- Not aligned to the Algebra 1 standard</li> <li>- The square root graph is not a part of the algebra standards.</li> <li>- square root functions not in a1 standards</li> <li>- Sq Rt functions are not addressed in the standards.</li> <li>- This is a square root and not an Algebra 1 tested item.</li> <li>- This function type is not in Algebra 1</li> <li>- This is completely inappropriate for an Algebra 1 students. It is not a known function, calculation or manipulation.</li> </ul>
<p>Item #27</p> <ul style="list-style-type: none"> <li>- This really could be identified with multiple standards. The context matches it best to F1.8</li> </ul>
<p>Item #34</p> <ul style="list-style-type: none"> <li>- This standard asks you to solve, and the question only asks for to write the inequality.</li> </ul>
<p>Item #35</p> <ul style="list-style-type: none"> <li>- Fits loosely into this domain</li> <li>- This does not align to an algebra 1 standard. In addition, the question is not well defined. It is not possible to determine if a cubic or quadratic model fits or not. the word growth keys to exponential.</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- The standard states that "using tables and graphs." In addition, as x gets really large the y values are essentially the same. This question is not a great question. It would be better to change the value of base in the exponential function rather than the y - intercept. Or make one answer choice a linear function, a quadratic function, a cubic function, and an exponential function.</li> <li>- F3.3 asks for graphs or tables and this question provides equations.</li> <li>- Our group discussion centered around a source of challenge for two correct answers. There is only one correct answer, not two.</li> <li>- The standard says that graphs and tables should be used...this item uses equations.</li> </ul>
<p>Item #45</p> <ul style="list-style-type: none"> <li>- This is a system, however, Algebra 1 is limited to systems of linear equations, not quadratic.</li> </ul>
<p>Item #47</p> <ul style="list-style-type: none"> <li>- Doesn't fit</li> <li>- This does not appear to align to any standard. This question could appear on a sixth or seventh grade assessment. The Algebra 1 standards focus on comparing two or more data sets.</li> <li>- This really doesn't fit an algebra 1 standard.</li> <li>- This does not match because the standard says to compare two or more data sets and this is a single set.</li> </ul>
<p>Item #51</p> <ul style="list-style-type: none"> <li>- This item asks students to reason with two variables in a unique way that is not addressed in the standards.</li> </ul>

<p>Item #52</p> <ul style="list-style-type: none"> <li>- 8.f.b.4 better alignment</li> <li>- This question would be better aligned with the eighth grade standards.</li> <li>- This really isn't algebra 1, this matches 8th grade FB4</li> <li>- fits better to 8th grade 8fb</li> <li>- This is aligned to 8.F.B.4</li> </ul>
<p>Item #53</p> <ul style="list-style-type: none"> <li>- This really doesn't match the standard. It does match the mathematical practices or number theory.</li> </ul>
<p>Item #54</p> <ul style="list-style-type: none"> <li>- This item loosely aligns to the standard. Not sure this is a good test item.</li> <li>- Mixtures are not directly stated in the standards and there is a question about alignment.</li> <li>- This expression is at a higher level than is covered at Algebra 1.</li> </ul>

Table 10.10 *Notes by Reviewer AzMERIT 2017 Geometry*

Notes
<p>Item #7</p> <ul style="list-style-type: none"> <li>- not aligned to a specific standard</li> </ul>
<p>Item #10</p> <ul style="list-style-type: none"> <li>- There is no standard aligned to this item</li> </ul>
<p>Item #18</p> <ul style="list-style-type: none"> <li>- This standard asks students to do a proof, where this item asks students to apply the content of the proof to a diagram.</li> </ul>
<p>Item #19</p> <ul style="list-style-type: none"> <li>- This item asks students to find the scale factor for a dilation which is not addressed directly in this standard. The standard is more definitional and conceptually addresses dilations.</li> </ul>
<p>Item #23</p> <ul style="list-style-type: none"> <li>- Not aligned to standard-standard is proving, item is finding the error in a proof.</li> <li>- This item is analyzing a proof. It is not doing the proof.</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- This item is analyzing a proof although the standard suggests that students will prove...</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- This item is analyzing a proof, but the standard is a proof standard.</li> </ul>
<p>Item #42</p> <ul style="list-style-type: none"> <li>- It could align elsewhere if given a real world context.</li> </ul>
<p>Item #50</p> <ul style="list-style-type: none"> <li>- This item is somewhat the analysis of a proof and not the proof that students should be doing.</li> </ul>
<p>Item #52</p> <ul style="list-style-type: none"> <li>- This item is difficult to understand given that the figures are 2-dimensional.</li> </ul>

Table 11.10 *Notes by Reviewer AzMERIT 2017 Algebra II*

Notes
<p>Item #9</p> <ul style="list-style-type: none"> <li>- This is not a great question.</li> </ul>
<p>Item #16</p> <ul style="list-style-type: none"> <li>- Ln is not specifically listed in the standards.</li> </ul>

<p>Item #20</p> <ul style="list-style-type: none"> <li>- Does not align. This question fits better with Algebra 1 or eighth grade.</li> <li>- This is not an algebra 2 standard. Students are being asked to judge the quality of selecting a committee.</li> <li>- Deciding if a sample is random or not is not in the Alg II standards.</li> <li>- Doesn't align well.</li> </ul>
<p>Item #22</p> <ul style="list-style-type: none"> <li>- Excessive use of assessing logs.</li> </ul>
<p>Item #26</p> <ul style="list-style-type: none"> <li>- This is not an Algebra 2 standard. Sample space is assessed in Algebra 1.</li> <li>- Creating a sample space is not an algebra 2 standard.</li> <li>- Listing possible outcomes of an experiment or event is not included in the standards.</li> <li>- This is testing sample space, which is not Algebra 2 at all.</li> </ul>
<p>Item #27</p> <ul style="list-style-type: none"> <li>- This item loosely fits the standard.</li> </ul>
<p>Item #28</p> <ul style="list-style-type: none"> <li>- Does not match standard. Matches domain heading.</li> <li>- This problem is simply putting <math>\sin(7\pi/6)</math> into the calculator and getting answer. It does not match the standards.</li> <li>- This is evaluating a sine function, not understanding or explaining.</li> </ul>
<p>Item #30</p> <ul style="list-style-type: none"> <li>- Item not aligned.</li> <li>- Students are being asked to make a conclusion and the closest standard that mentions surveys asks students to recognize purposes and differences.</li> </ul>
<p>Item #34</p> <ul style="list-style-type: none"> <li>- This item does not align.</li> <li>- Margin of error is no longer an algebra 2 standard.</li> <li>- All students are doing is plugging numbers into an equation and evaluating it. This is not in the standards.</li> <li>- Margin of error has been removed from Algebra 2.</li> </ul>
<p>Item #36</p> <ul style="list-style-type: none"> <li>- Perhaps more in alignment with the mathematical practices than the standard.</li> </ul>
<p>Item #37</p> <ul style="list-style-type: none"> <li>- Does not align to a standard.</li> <li>- This question really should be at a lower level.</li> <li>- Simple probability and law of large numbers have both been removed from Algebra 2</li> </ul>
<p>Item #44</p> <ul style="list-style-type: none"> <li>- This item is more of an Algebra 1 item. It is intended to be conditional probability, but since the events are independent it really is simple multiplication problem.</li> <li>- Possibly intended for Algebra 1 since standards realignment.</li> </ul>
<p>Item #48</p> <ul style="list-style-type: none"> <li>- This standard align better to Algebra 1. This should have linear and a quadratic equation.</li> <li>- This is not aligned to algebra 2. This is Algebra 1.</li> <li>- The standard says solve systems of equations but one of those equations must be a quadratic. In this item both equations are linear.</li> <li>- This appears to be Algebra 1, systems in Algebra 2 should include a linear and quadratic function. Not option, should include both.</li> </ul>



## Source of Challenge – Mathematics

Table 5.11 *Source-of-Challenge Issues by Reviewer AzMERIT 2017 Math Grade 5*

Sources of Challenge
<p>Item #5</p> <ul style="list-style-type: none"> <li>- use of the word after may have multiple meanings and student answer any number over 40</li> </ul>

Table 9.11 *Source-of-Challenge Issues by Reviewer AzMERIT 2017 Algebra I*

Sources of Challenge
<p>Item #33</p> <ul style="list-style-type: none"> <li>- The correct answer is very difficult to see. Students with visual issues may well miss it even though they know the math.</li> </ul>
<p>Item #41</p> <ul style="list-style-type: none"> <li>- There are two correct answers for this item.</li> <li>- There are two answers for this question. A and B. If you plug in a large value for x, say 100, you get exactly the same answer.</li> <li>- As x gets infinitely large the + 13 and -19 for choices A and B are negligible. A smart kid will understand this.</li> <li>- (a) and (b) would be correct as x approaches infinity both answer choices are equivalent. Input <math>x = 100</math> and compare solutions.</li> <li>- A &amp; B are both negligible using the domain of infinity (-19 and +13 are not going to make a difference based on the base of <math>4^x</math>)</li> <li>- Both (A) and (B) are correct responses.</li> </ul>

# Appendix E

## Debriefing Summary Notes

Alignment Analysis of the 2017  
Statewide Achievement Assessment  
for English Language Arts and  
Mathematics (AzMERIT) and 2016  
Grade Level Standards, Grades 3-11

December 8, 2017

## ELA

Table 3.13a *Debriefing Summary AzMERIT 2017 ELA Grade 3 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Language standards were partially covered.
- This 3rd grade test seems much more aligned with the rigor of the standards than the 7th grade test.
- More parts of standards being addressed in items than previously seen.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Aligned with the blueprint, the majority are DOK 2.
- Expected 1 and 2, which I found. Would like to see more Level 3.
- Please see comments for 5th grade.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- It aligns better with the standards.
- more aligned to standards than grade 7
- This 3rd grade test seems much more aligned with the rigor of the standards than the 7th grade test. This test seems much more cohesive. There were times in the 7th grade test, part a and part b seemed to be mismatched in terms of standard and rigor in a way that suggested perhaps the difficulty had been decreased.
- Better alignment.
- I felt very comfortable with the alignment.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

- ii. Acceptable Alignment -- 3
- iii. Needs slight improvement -- 3

## **E. Comments**

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- RE DOK: 3WL3.1. It is rather disconcerting to read all the conventions a to j and then get to j which talks about writing paragraphs. Seems as if it does not belong there. In grade 4 a parenthetical sentence is added to this list. Should there be such a sentence in grade 3? See Grade 4 paper for further explanation. Good selections of prose, fiction and non-fiction, but no poetry or drama. I like the mix of historical, current topics and addressing various cultures. Writing prompts ask students to really think about their writing by giving them reading selections. Text feature given in fiction selection, but no standard addresses it. One in informational text, but cannot be used. Went to one in Language. In one instance, students are asked to pick one sentence when there are 3 correct answers. Although I cannot pinpoint the item number, the selection had to refer to a girl who learned about a famous person and how he influenced her to become the best person she could become. All three sentences at the end of the selection could be considered correct, especially the last one. There were other examples of similar items where the student could be asked to pick one sentence when more than one offered could be correct.

Table 3.13b *Debriefing Summary AzMERIT 2017 ELA Grade 3 Online*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- 1.6 Distinguishing from author's point of view
- Since most items were repetitious of the paper form, there is little new to comment on.

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- the majority were 2
- Weak measurement of language.
- Same as on paper.

### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This assessment aligns well with the standards.
- aligns well
- Better than 7th grade.
- Same.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 2

iii. Needs slight improvement -- 3

### **E. Comments**

---

- Many items require more to truly assess the full standard. There is a concern that standard 3WL 3.1 is DOK 2 until J, which is dok 3 and should be moved to 3.3

Table 4.13a *Debriefing Summary AzMERIT 2017 ELA Grade 4 Paper*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RI.6 was not addressed to the degree of RL 6
- Many items addressed the standards, but only partially. For example, 4RL1.5 no poetry or drama, just prose. Not all text structures assessed. (4RI.5)

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Several items did not unpack the full standard.
- DOK is consistent with blueprint.
- Please see my comments for 5th grade. They apply here as well.
- There were more level 3 at this grade level.

#### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This assessment is better aligned
- About the same
- This test seemed to do a much better job of getting in to the complexity of 1.6-it seems the complexity of the standards lend themselves to a clearer alignment. The students were asked to compare point of view across texts.
- It aligns well.
- Better. Not as many items where item met partial agreement with standards.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 5

iii. Needs slight improvement -- 1

### **E. Comments**

---

- Some items coded with multiple standards. WL 3.1 includes a lot of language. Very little sophistication or nuance with the text and items.
- I'm curious to see how many standards are not including on the assessment, but easily could be.
- Good variety of fiction and non fiction reading selections on current topics that would be of interest to students at this age. However, no poetry or drama so far. Topics included other cultures and time periods, current and historical topics. Illustrations and charts, etc. supported text. Writing prompts age appropriate. Listening selections and items challenging. Items assess reading comprehension. In one of the language items at the end, the item contains a dangling modifier. I did not find this listed in the conventions standard at this grade level, but I did see it in grade 7. Re: 4WL.31, Under h, explanatory sentence at end is good. A similar statement is needed in grade 3, (same standards last sentence) so that items coded to 4WL.3.1 are assessed as language items and last sentence about writing seems out of place. Multiple choice items that are preceded with letters are very distracting to readers as readers, especially young readers who are not used to seeing every sentence they read begin with a letter in front of it. Could you consider another test format that will assess students being able to identify certain sentences in texts, in a table or a bulleted listed? The letters in front of the statements impede the flow of comprehension.

Table 4.13b *Debriefing Summary AzMERIT 2017 ELA Grade 4 Online*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Foundational skills for reading and foundational skills for writing are not covered.
- The speaking and listening standards were difficult to directly link to a standard. The questions seem to indicate emphasis on the students' ability to listen, comprehend, and find common evidence across passages. Valid skills, more akin to the RI standards. The listening and speaking standards speak more to the production of language and listening in discourse, however, the skills assessed are important. We may just need to consider the alignment of the questions to the standards.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Some items were rated a DOK2 instead of DOK 3 because the item was not as complex as it should be.
- This assessment is more aligned than grade 7.
- as expected

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Better than grade 7.
- It does a nice job, but does not align as clearly to speaking and listening as 3rd grade.

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**v. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 3

iii. Needs slight improvement -- 2

**E. Comments**

---

- This assessment was closely aligned to the standards as well as the DOK levels the standards were written at except for the listening and Speaking portion which was difficult to tie questions to a standard.
- See comments on specific items. Most items touch a standard, but don't unpack the standard fully.

Table 5.13a *Debriefing Summary AzMERIT 2017 ELA Grade 5 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RL 1.8 RI 1.9
- Grade 5 is consistent with other grade levels in terms of partial topics covered in specific standards. See comments for Grade 6.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- All language standards assessment items fell into the DOK 1 category.
- I coded most of the questions at a DOK 2, with the exception of the Language Standards, which I coded at a 1, and the Writing Standards, which I coded at a 3.
- Seemed heavy on DOK 3
- Prior to adjudication, I found this test to have a consistent use of DOK 2 with some DOK 3
- Not as many Grade 5 level 3 items as expected. Several Grade 5 items could be reworded to become level 3. An example of one item is in the notes. Reviewers wanted to give level 3 to several items that asked about both passages but the item did not warrant it as written.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- It aligns well.
- I would like to know which standards if any weren't addressed in the assessment.
- Better than 7.
- This assessment seemed to venture further in to a more diverse RI and RL representation. While 3 and 4 and especially 7th seemed to use RI RL 1.1 or 1.2 more heavily.
- Met expectations. Best one so far

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

- ii. Acceptable Alignment -- 4
- iii. Needs slight improvement – 2



## **E. Comments**

---

- Not as closely aligned. Many questions only partly addressed the standard.
- It aligns well.
- Appeared rigorous. Standards at this grade level appear very specific so true matches with items was more challenging.
- Many of the comments for Grade 5 are incorporated into Grade 6 as an overview of the process.

Table 5.13b *Debriefing Summary AzMERIT 2017 ELA Grade 5 Online*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Foundational skills are not addressed.
- See comments from paper 5th
- Covered in Grade 5 and 6 paper tests.

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- See Grade 5 paper.

### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- nice alignment
- Grade 5 paper.

### **D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 4

iii. Needs slight improvement -- 2

## **E. Comments**

---

- Listening items difficult to connect to a standard.
- While the Standards were written overall at a DOK 3 in 5th grade, the DOK of the assessment was mostly at a DOK 2
- See Grade 6 comments.

Table 6.13a *Debriefing Summary AzMERIT 2017 ELA Grade 6 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RI. 1.9 was not addressed 1.8 was not addressed fully
- Over all the grade levels there were standards that were not covered at all. The data will show this. In terms of partial cover for example, in grade 6 RL 1.7, I saw no drama. At grade 5 or 6, I did see some poetry, however. Referring to RL 1.7 I recall no fantasy stories but do recall historical fiction.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- I felt there was a better representation of DOK 3 on this assessment.
- Opportunities for many standards that should be DOK 3 to be tweaked for complexity.
- Adheres to blueprint
- There were more level 3 items in Grade 6.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- It aligns well.
- This assessment aligns well compared to others.
- This is the best one so far. There is clearly a problem with 7th grade.
- Aligned fairly well--but the complexity of the RI standards were not addressed fully.
- Grade 5 had the best alignment. The other grades were working toward that. In retrospect, Grade 7 seems not to fit nearly as well as the elementary grades even though articulation between grade level bands was completed.

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 3

iii. Needs slight improvement -- 3

## **E. Comments**

---

- Revisit grade 7.
- I felt like this test questions fit the standards well as well as matched the DOK level of the standard.
- Typographical error--passage 1, p.46, last sentence--"though/through"
- AZ to be commended for a writing prompt and bringing reading and writing together to produce cohesive writing. Wide variety of interesting reading materials could keep children more involved in completing the assessment. Applaud the decision not to test foundations skills as they do not measure reading comprehension. This assessment does. Possibly create items to cover other language standards other than 3.1 in Grades 3-5 and 2.1 in Grade 6. Data will show which ones are not being assessed. Also suggest consideration of more expository writing prompts instead of having so many on opinions. Students need to learn to explain themselves on a variety of subjects, backed up by facts and examples, not just write their opinions on a given subject.

Table 6.13b *Debriefing Summary AzMERIT 2017 ELA Grade 6 Online*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- There is not a distinguishing between supported claims and those that are not.
- See Grade 6 paper.

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- I felt there was a nice representation of DOK 3 items.
- DOK is consistent with blueprint and aligned more closely to the DOK of the standards
- See other Grade 6.

### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- It aligns well.
- For the addressed standards, this text does a nice job of aligning to the complexity and difficulty appropriate to grade level.
- This is the best aligned assessment out of 3-7.
- See Grade 6 first test.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 4

iii. Needs slight improvement -- 2

### **E. Comments**

---

- This aligned the best from 3-7th grade, especially the L/S section.
- See comments for Grade 6 which includes comments on other grades.

Table 7.13a *Debriefing Summary AzMERIT 2017 ELA Grade 7 Paper for Grades 3-7 group*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RL 1.5, 1.6, 1.7, 1.8, 1.3 RI 1.3, 1.5, 1.7, 1.8, Weak language items.
- Language topics were partially covered.
- For example, many items only partially include the standards. For example, Point of View. 7RL.17. Item asks students to identify the point of view but not to analyze it, which is consistent with author's craft. The same is true of 7RI. 7 in informational text. Item does not ask student how "author distinguishes his position from that of others"
- RL 5 did not seem to be represented, but there was an appropriate balance between RL and RI standards. The language standard only addressed W2.

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Several items don't unpack the standards fully.
- In some cases, the assessment item did not fully address the standard.
- Few Level 3.
- See comments for 5th grade
- The majority appeared to be DOK 2. The blueprint lists DOK to be 50-60%, so this seemed to be consistent. There were more DOK 3 questions than DOK , also consistent with the Blueprint.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This was my first assessment that I analyzed. We had lots of dialogue with our vertical teams to hash out our understanding of the process, the DOK, and the alignment of the standards to the questions.
- Compared with PARCC items, these items are weak.

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 2

iii. Needs slight improvement -- 3

iv. Needs major improvement -- 1

**E. Comments**

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- Very concerned that the speaking/listening standards were adapted to include culturally biased criteria that can not be objectively measured or even accessed. Many items were difficult to match to a standard because many items do not unpack a standard with fidelity, only part of a standard.

- Many items address only part of the standards. See above for examples. See comment in grade 4 (paper copy) for explanation of why letters in front of sentences impede reading comprehension. Look for another way to present this assessment item at other grade levels.

- Great process

- There are limitations to the ability to fully assess a standard within one item; there were some challenges in terms of the connections between part a and b, where there appeared to be a lack of complexity or continuity between them. The difficulty of the test is impacted by some of the more complex portions of a standard being untested.

Table 7.13b *Debriefing Summary AzMERIT 2017 ELA Grade 7 Paper for grades 7-11 group*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Points of view were not really addressed, though the question comparing Miss Minchin and Sara in the Little Princess passage could be modified to do so. The language standard about word choice (WL.2.3) wasn't really addressed.
- R.L. 1.7 didn't appear, R.I.1.9, R.I.7 limited or not appearing. Limited WL2.1, 2.5. Many of the questions addressed part of the standards, but not everything. As an example, reading standard 1.2 asks for a summary and most questions that addressed theme or main idea did not include a summary.
- Not all the reading and informational text standards were covered. Not all of the writing and language standards were covered either.
- I don't think there are any RL 7, RI 7 or RL 8 or RI 8 items the writing prompt is 7.w.1 which inherently eliminates all of the others writing paradigms. language standard 5 and 6 are not covered
- Comparing and contrasting
- 7RL.1.7 7RI.1.7 7RI.1.9 7WL.2.5 7WL.2.1

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- There were more DOK 2s than I expected.
- The questions were a majority of DOK 2, but most of the standards are written at the DOK 3 level. A bit of discrepancy based on what we expect in the class to the assessment.
- It seemed there were primarily DOK 2 questions and far less DOK 3 than I expected.
- several took a cursory approach to the standard and did not address the full depth of the analysis asked in the standard itself
- there were times when there could have been DOK 3 questions aligned more with standards, had students been asked to analyze rather than just infer.
- They seemed to be okay.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- [no responses]

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 4

iii. Needs slight improvement -- 2

### **E. Comments**

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- [no responses]

Table 7.13c *Debriefing Summary AzMERIT 2017 ELA Grade 7 Online*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- we attempted to capture 1.7 but not thoroughly
- A few of the RL and RI standards are not covered at all.
- RI.1.9 was addressed in the print version with the Navajo Code Talkers passages, but I didn't see anything addressing it here.
- Most of the standards were address in some way or another. RI.8 did not seem to have a clear correlation to an item. Writing standards 5-8 are not addressed.
- RL1.7 RI1.7 WL2.3-6

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- there are some 1.2 that ask about the theme that could use a part B
- There are a majority of DOK 2, but I think that is acceptable for this test.
- Weighed a bit heavily toward DOK 2
- Most items written at the DOK 2 level, which is to be expected.
- did well

#### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- similar to the paper version we have a pretty good alignment with this
- Aligns to the same standards in the paper test.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

- i. Perfect Alignment -- 1
- ii. Acceptable Alignment -- 4
- iii. Needs slight improvement -- 1

**E. Comments**

---

- [no responses]

Table 8.13a *Debriefing Summary AzMERIT 2017 ELA Grade 8 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- 8RL.1.5--students don't compare the structures of any of the paired texts
- this is a pretty good set at covering many of the standards there were a few that we questionable in the fullness of the standards but those have been noted
- Argumentative writing was not addresses as a task for students to do. Some of the language standards not addressed, though questions about vocabulary were addressed in context.
- This assessment did not have any questions addressing the listening and speaking standards.
- A few of the RL and RI standards were not covered by assessment items.
- RL1.7 RI1.7

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- I thought it was actually a good balance.
- Many if the test items were at a lower DOK (a 2 not a 3) because the test item did not completely address the standard.
- There were fewer DOK level 3 questions than expected
- DOK 2 was mainly represented, but that is to be expected.
- All 2 and 3 DOK--seemed about even



**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This seemed much better aligned than G7 Print. Almost all of the testable standards were addressed, and addressed well. There were several very clear hits.
- we continue to have a pretty good match of standards that can be reasonably assessed
- This test was better than 7th grade.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
- ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
- iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
- iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
- v. Not aligned in any way (no match between items and expectations)**

- 
- ii. Acceptable Alignment -- 5
  - iii. Needs slight improvement -- 1

**E. Comments**

- [no responses]

Table 8.13b *Debriefing Summary AzMERIT 2017 ELA Grade 8 Online*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

- 
- 8RL.1.5--students don't compare the structures of any of the paired texts

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

- 
- I thought it was actually a good balance.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This seemed much better aligned than G7 Print. Almost all of the testable standards were addressed, and addressed well. There were several very clear hits.
- Similarly

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 5

#### **E. Comments**

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- not all of the questions are as strong as the others but overall we covered the majority of the standards

Table 9.13a *Debriefing Summary AzMERIT 2017 ELA Grade 9 Paper*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RL.1.6 and RL.1.8 needed coverage.
- Nothing for - RL 1.6, 1.7, 1.8, RI 1.8

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Good mix of 2s and 3s
- Many of the items were right on par with the expected DOK levels.

#### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Better than both G7 and G8
- This test better aligned to the DOK and intended standards than either the 7th or 8th grade test.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
- ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
- iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
- iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

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ii. Acceptable Alignment -- 6

**E. Comments**

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[no comments]

Table 9.13b *Debriefing Summary AzMERIT 2017 ELA Grade 9 Online*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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[no comments]

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

[no comments]

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This assessment seems to cover a wider range of standards than previous assessments.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment – 4

**E. Comments**

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[no comments]

Table 10.13a *Debriefing Summary AzMERIT 2017 ELA Grade 10 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- 10RL.1.7, 10RI.1.8, 10.RI.9
- Nothing about key scenes in different mediums or cultural differences.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- This assessment contains very few DOK 3 questions, which does not meet the full performance expected by the standards.
- Decent match.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Some questions seem forced into standards, as opposed to the grade 9 assessment, which more naturally aligned.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)
  - v. Not aligned in any way (no match between items and expectations)
- 

ii. Acceptable Alignment -- 5

**E. Comments**

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[no comments]

Table 10.13b *Debriefing Summary AzMERIT 2017 ELA Grade 10 Online*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- Same comments as paper test

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Same

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Same

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 5

**E. Comments**

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[no comments]

Table 11.13a *Debriefing Summary AzMERIT 2017 ELA Grade 11 Paper*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

- 
- There was an opportunity to hit on 11.RL.1.8 with the Jungle/Sister Carrie selections, but it wasn't taken.
  - Mostly reading informational.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

- 
- DOK didn't quite match because the standards were not fully assessed.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- this one had a slew of 2 DOK...really harder to assess these standards but the developers need to realize the complexity of these standards there are some that are touching at a very small portion of the standard itself :(
- This assessment seemed to be the weakest in terms of correlating to the standards. It was not diverse in the selections or the types of questions asked.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 4

iii. Needs slight improvement -- 2

#### **E. Comments**

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- There is an over reliance on historical documents in attempt to address RI 1.8 and 1.9. One section would suffice These standards overlap in confusing and unnecessary ways. Looking at the language of the standards as well as the ways that that language interacts across standards would be helpful

Table 11.13b *Debriefing Summary AzMERIT 2017 ELA Grade 11 Online*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- See paper form comments
- There are quite a few standards in RL, RI and SL that are not addressed.

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- See paper form comments

#### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- See paper form comments

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 3

iii. Needs slight improvement -- 2

### **E. Comments**

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- The wording of the standards, especially RI 1.8 and 1.9, overlap in problematic ways, making it difficult to discern between the two. The passages chosen for this test were not relatable to students and have biases towards non-native English speakers as well as nonwhite students. I would highly recommend choosing different texts that actually apply to students' lives.

- see notes on paper

## Mathematics

Table 3.13 *Debriefing Summary AzMERIT 2017 Math Grade 3*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Word problems using money, place value understanding and rounding, comparing fractions with the same denominator
- OBT1.1 Was not addressed, no equal groups of items to represent multiplication. OBT1.4 the distributive and associative properties were not addressed. OBT 1.8 Lean on 2-step, remember only 1 problem with mixed operations and non with variables. OBT1.9 No patterns on mult or addition table. OBT 1.9 No estimation. OBT 2.1 No rounding NF 1.2 Only one fraction on a number line. NF 1.3 No comparing fractions by looking at numerator or denominator. MDG 1.5 No line plots
- There was very little geometry, patterning, and some of the different types of measurement. The test was heavy on calculation. Fractions were also not represented enough.
- I feel fractions was not represented enough, especially NF1.3. There needs to be more chances for the students to compare fractions and explain their equivalence. Also, there were no chances for students to estimate and find the reasonableness of their answers.
- No questions on rounding - geometry not well represented

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- DOK 1 and 2
- DOK was generally lower.
- Mainly DOK 1
- majority of DOK was 1
- They were fine except the word problems tended to be DOK 1 whereas the standard is a 2. In general the DOK is pretty low which might be
- There were no DOK 3 questions.
- I had a lot of DOK level 1 even though standards were coded as a DOK2

### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Better than 7th grade.
- I believe this test could cover a wider range of topics covered in the standards unless Arizona has placed high importance on learning facts and calculation.



**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 5

iii. Needs slight improvement -- 3

### **E. Comments**

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-The fraction problems where the student is given a part and need to determine what the whole is need to be looked at again. Part of a whole (larger than 1 is not covered in the standards)

Table 4.13 *Debriefing Summary AzMERIT 2017 Math Grade 4*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- There was not much on measurement and data. There should be more questions on decimals and less computation.
- NF1.3 Missing the most important part of this standard as no word problems addressed fractions. NF 1.4 No word problems involving multiplying fractions. MDG1.1 no converting from one measure to another.
- measurement - conversions
- OBT 1.6 had no questions related to it. I think there needs to be at least one question that has the students address this standard. MDG 1.2 was also weak. The one question it did have was very vague and poorly written.

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- Many of the items tested were below what one would expect from the standards.
- 4.OBT.1.1 were mostly solvable by computation without understanding of concept or need to explain.
- I thought many of these questions were DOK 1

---

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This one is not as well aligned as the third grade test, it should cover a broader spectrum of the standards (unless Arizona doesn't put as high of an importance on certain standards)
- Similar.
- I have found consistency with DOK levels throughout the assessments.
- I feel like this assessment had too many questions where the students were "evaluating an expression show". If feel NF 1.4 was over represented. There are 4 problems that are testing the same part of the standard and they were all presented in the same way.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 3

iii. Needs slight improvement -- 5

**E. Comments**

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- A number of creative questions and approaches to the standard.

Table 5.13 *Debriefing Summary AzMERIT 2017 Math Grade 5*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- There were no problems about prime numbers Very few on rounding decimals Not many word problems
- OBST1.2 No decomposing into factors. OBT 2.7 No multiplication or division of decimals.
- There are no questions that have students multiply or divide decimals. I feel this needs to be assessed on the test.
- 5.NBT.2.7 only omitted use of multiply/divide operators.
- multiplying fractions - lots of adding and subtracting
- Multiplying and dividing decimals,

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- The DOK was overwhelmingly a 1 which is consistent with the standards but seems low in general
- Generally below the expected DOK level
- The questions included aligned fairly well to the DOK levels in the standards. Some were at a level of 1.
- DOK 1 and 2

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- It is ok alignment. It could cover a broader range of standards however.
- Similar

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)
  - v. Not aligned in any way (no match between items and expectations)
- 

- ii. Acceptable Alignment -- 5
- iii. Needs slight improvement -- 3

**E. Comments**

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- I noticed that all the names on the tests are white English names. It would be more culturally sensitive to include ethnic names particularly in a state with a large latinx population.

Table 6.13 *Debriefing Summary AzMERIT 2017 Math Grade 6*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- There are lots of unit rate problems, and very few number sense questions
- All GS questions do not address the depth of the standards and are very simple. So DOK is not there and difficulty is not there. RP standards are also very simple and most problems can be addressed without even using ratios.
- Statistics, geometry, percent

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- DOK on ratio and statistics questions was quite low compared to what it taught in class
- DOK 1 and 2
- Majority were DOK1
- Heavy on DOK 1
- I feel there were a lot of DOK 1 questions and not many DOK 2 and no DOK 3.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This assessment seems to be a huge step down in difficulty from the previous year. Wondering if the failure rate in the past is influencing the test questions and if the assessment is a "watered down" version of the original assessment, not just an adjustment for new standards.
- This assessment didn't seem to have the rigor of previous assessments.
- Similar.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

- ii. Acceptable Alignment -- 3
- iii. Needs slight improvement -- 5

**E. Comments**

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- rp1.3 used a lot

Table 7.13a *Debriefing Summary AzMERIT 2017 Math Grade 7*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- It seems that they were all covered sufficiently
- RP1.2.d was never addressed. NS.1.1 Negative numbers, understanding their opposites and absolute value was not addressed. NS.1.2 Multiplying and dividing negative numbers was also not addressed. EE.1.1 Students did not factor or expand linear expressions with rational coefficients. GS.1.2 Students did not construct triangles from 3 measures. GS1.5 Only one question addressed angles. GS1.6 No problem addressed surface area. GS2.6 and GS.2.7 was not addressed. There were several problems that asked students to solve equations provided that did not involve variables or fractions which is not a seventh grade standard.
- Statistics and geometry
- I feel like 7RP1.3 needs to be represented more. I did not find any questions that match that standard.
- 7RP1.1, 7NS1.2, 7EE1.2, 7GS1.37GS2.7

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- The DOK was acceptable for what one would expect to see on a multiple choice test
- had 50% below level
- Most were DOK 2
- I did not find any DOK 3 questions.
- The majority of the questions were written at a DOK 2. I didn't feel there were any DOK 3 questions.
- Several items had a lower DOK - often limited by constraints of format and scoring.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- Strong alignment

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)
  - v. Not aligned in any way (no match between items and expectations)
- 

- ii. Acceptable Alignment -- 4
- iii. Needs slight improvement -- 2
- iv. Needs major improvement --1

## E. Comments

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- Several computations below grade level and not tied to any seventh grade standard.
- I need more clarification on match between items assessed and expectations to claim "perfect alignment."

Table 7.13b *Debriefing Summary AzMERIT 2017 Math Grade 7 for grades 7-11 group*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- RP.1.2 is a meaty standard. Only parts of it were covered (e.g. d. and c.). EE.1.4 seemed to have the bulk of items measuring it just have students write an equation and not actually do problem solving.
- There were a few subtopics that were not assessed. (7.GS.1.3, 7.GS.2.2, 7.GS.2.6) However, there was an appropriate number of questions covering the content emphasis for the seventh grade curriculum.
- I felt like there was a good mix of topics, and each domain appeared to be covered.
- all were included
- Most major topics were covered.
- none
- Ratio and proportion seemed to partially covered by assessment items.
- Some topics in Geometry were addressed only partially, in particular those related to angles and geometric measurements.

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- The match between expectations and performance levels seemed like a decent match to me.
- There was a variety of DOK levels. The test contained the majority of DOK 2's with several DOK 1's and a few DOK 3's.
- I felt like there was minimal representation for DOK 3.
- DOK 1-3 were represented
- Most items seemed to generally meet the DOK levels.
- DOK levels matched the intent of the levels of the standards for the most part.
- Most of the DOK levels of the assessment items aligned with the performance of the standards.
- There seemed to be a pretty consistent agreement between DOK levels in the items and those expected by the standards.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- There were several sets of questions that appear to assess the standard in the way. The assessment could be improved by altering the question types or the type of response required for the question. For example, #30 and 49 assess 7.GS.2.7, but both have a similar context and are both a 3 stage event. #9 and #36 assess 7.GS.2.5 and both require the same response type by filling in a table. #31 and #34 assess fraction and decimal equivalency and both require the same response type by filling in a table #37 and #44 are both grid in questions requiring students to do the same task, multiply rational numbers.

**D. What is your general opinion of the alignment between the standards and assessment:**

**i. Fully aligned (every item matches an expectation and all expectations are fully covered)**

**ii. Acceptably aligned (95% of items match a topic, all important topics covered)**

**iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**

**iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**

**v. Not aligned in any way (no match between items and expectations)**

---

ii. Acceptable Alignment -- 7

iii. Needs slight improvement -- 2

**E. Comments**

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- The alignment was acceptable but more of each individual standard could be assessed (see A. above).

- related reliance of questions should fit population or cultural sensitivity. For instance below zero temperatures or even the ability of field trips may not apply to a portion of the low-SES of the AZ (Phoenix) community.

- Knowing content limits of the standards would be helpful in evaluating the expectation of knowing if all the standards are covered.

- Decision rules were set by the coders to assist in the sort between RP1.2 (c) and EE1.4. EE1.4 was used when the relationship fit the form of the equation in the standard ( $px+q=r$ ), i.e., the relationship is not proportional. When the relationship was proportional, RP1.2 was used.

Table 8.13 *Debriefing Summary AzMERIT 2017 Math Grade 8*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

---

- Scientific Notation items seemed to be at a low level. They weren't used to approximate nor compare. I wanted to see probability and two-way table items and didn't see any.
- I think that expressions & equations, functions and and geometry are will represented.
- Probability, 8SN1.5 was not covered by assessment items.
- NS was not represented correctly within this assessment
- None
- No EE1.2, EE1.3, G1.3, G1.4, G1.6, SN1.4, 1.5. 2.1, 2.3
- No cubes on the assessment. No Similarity on the assessment.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

---

- There were items that were below the DOK of the standard just because of the way they were written. For example, an item showing an outlier on a scatter plot made the outlier so obvious that is made the concept's assessment less complex.
- I felt that this test was a much lower level DOK.
- Assessment items were a bit lower on the DOK Level than expected by the standard.
- More DOK 1 than expected.
- There seemed to be a lot of DOK 1 problems
- Mostly DOK 1
- This assessment is very heavy with DOK of 1

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This test had more items that did not align well to any specific standard than the other test reviewed.
- I felt like there was pretty decent alignment.
- Compared to Grade 7, Grade 8 had more assessment items at a DOK Level 1. Additionally, not all subtopics were covered.
- Not aligned as expected
- The content alignment seems good.
- Aligns similar to grade 7.
- This assessment in general doesn't have a direct alignment to the standards.



**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

- ii. Acceptable Alignment -- 4
- iii. Needs slight improvement -- 3
- iv. Needs major improvement -- 1

### **E. Comments**

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- The items' DOK is acceptable but it can be improved.
- Some of the questions don't seem to align to standards directly. Lots of indirect alignment.

Table 9.13 *Debriefing Summary AzMERIT 2017 Algebra I*

### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- Probability was absent, rational numbers was weak, there were no piecewise functions, there were no constraints represented.
- It felt like there were some major gaps.
- some of the things missing include rearranging formulas, sequences, more with shape of data, independence and conditional probability
- Real number system, AISQ 3.0 seemed to be only partially covered by the assessment items.
- Most topics covered
- There could have been more questions on exponential functions.

### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

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- The DOK seemed appropriate.
- I felt like most of the test was asking for routine and procedural items, so the DOK appeared fairly low.
- no DOK of 3
- The DOK levels met the performance expected by the standards.
- Low DOD for the standards that were aligned.
- Heavy on DOK 1.

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- The alignment was very difficult. Many items either did not align or aligned weakly. It was a challenge aligning many of the items to a standard.
- I was surprised at how poorly I felt this aligned to Algebra 1 standards.
- This assessment does not match the standards as closely as others.
- Most of the items were a poor fit to the standard.
- The content alignment is off
- This test was less aligned than seventh or eighth grade.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
- ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
- iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
- iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
- v. Not aligned in any way (no match between items and expectations)**

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iv. Needs major improvement -- 8

**E. Comments**

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[no comments]

Table 10.13 *Debriefing Summary AzMERIT 2017 Geometry*

**A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- Quantities do not appear to be covered at all in this assessment.
  - Quantitative reasoning is missing and coordinate geometry is light.

**B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

- 
- Performance levels were mainly DOK 2 on the assessment. The standard has a few 3 & 4 DOKs.
  - There were a reasonable number of DOK 2

**C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- The Geometry assessment is similar in alignment to Grade 7 assessment.
- The content alignment was good.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

ii. Acceptable Alignment -- 1

iii. Needs slight improvement – 2

#### **E. Comments**

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[no comments]

Table 11.13 *Debriefing Summary AzMERIT 2017 Algebra II*

#### **A. What major topics or subtopics were only partially covered by assessment items or did not have any corresponding items?**

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- There are too many exponential functions and the probability and statistics questions are not aligned to the standards.
- There was a distinct lack of anything trigonometric other than the unit circle. Many of the items seemed to match the standard only superficially.
- Sequences is missing. Trig is not matched sufficiently. Composition of functions is missing.

#### **B. In what ways did the performance (DOK levels) required by the assessment items meet or did not meet the full performance as expected by the standards?**

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- Heavy on DOK 1's.
- The DOK levels seemed to be beneath the DOK levels of the standards.
- There wasn't any DOK 3.

#### **C. Compared to other assessments being analyzed, how does this assessment align to the set of standards or expectations? (Answer only after analyzing two or more assessments.)**

- This test is the least aligned.
- In one or two assessments the standards matches were good. In at least two of the exams the standards matches were weak or even non-existent.
- OK. Better than algebra 1, but there are still questions that do not match algebra 2.

**D. What is your general opinion of the alignment between the standards and assessment:**

- i. Fully aligned (every item matches an expectation and all expectations are fully covered)**
  - ii. Acceptably aligned (95% of items match a topic, all important topics covered)**
  - iii. Needs slight improvement (85% -94% of items match a topic, most topics covered)**
  - iv. Needs major improvement (< 85% of items match a topic, main topics not covered)**
  - v. Not aligned in any way (no match between items and expectations)**
- 

iii. Needs slight improvement -- 1

iv. Needs major improvement – 2

#### **E. Comments**

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- Too many items were difficult to code. Of these items were coded to a standard that wasn't generic because the intent was there but the match is still very weak.

# Appendix F

## DOK Definitions for Reading and Mathematics

December 8, 2017



## Reading DOK Definitions

### DOK 1

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DOK 1 involves reading text orally and with basic comprehension, decoding words, blending phonemes, receiving and reciting facts, demonstrating letter and word knowledge, and recognizing text features and common spelling patterns. DOK 1 also includes receiving or reciting facts acquired by processing text as well as reading orally without the analysis of text. Very basic comprehension of a text gained from knowledge of vocabulary and explicit structure of the text is at this category. Tasks require only a shallow understanding of the text presented and often consist of verbatim recall from text, slight paraphrasing of specific details from the text, or simple understanding of a single word or phrase. Younger students who answer direct questions about features stated explicitly in the text are performing at this category. Applying phonics and word analysis skills in decoding words are also DOK 1 tasks. Some examples that represent, but do not constitute all of, DOK 1 performance are:

- Support ideas with reference to verbatim (or only slightly paraphrased) details from the text.
- Use a dictionary to find the meanings of words.
- Recognize figurative language in a reading passage



## DOK 2

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DOK 2 involves drawing meaning from text by using organizational structure, evidence, and context; summarizing main ideas, character traits, plots, themes, and figurative use of words; following cause-effect sequences and multiple ideas through a text; distinguishing among hypotheses and givens as well as fact from opinion; and explaining differences among genres (poetry, expository materials, fiction, etc.). DOK 2 requires the engagement of some mental processing beyond recalling or reproducing a response; it requires both comprehension and subsequent processing of text or portions of text. Inter-sentence analysis or inference is required. DOK 2 tasks may require use of specific information from the text to explain given events and ideas. At this level, reading concepts (e.g. making inferences or predictions) are generally applied for purposeful reading. Multiple features of the text are processed to gain a deeper understanding of the text such as organizing in a time sequence, outlining, comparing fact from opinion, and using graphic aides. Deciphering main ideas supported by key details or drawing on details to describe a feature in a story are stressed. Younger students conveying important points from a story fit under this category. DOK 2 ideas, in general, apply the skills and concepts that constitute DOK 1. However, DOK 2 activities involve closer understanding of text, possibly through paraphrasing, such as putting in one's own words both the question and response to an assessment item. Some examples that represent, but do not constitute all of, DOK 2 performance include:

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- Use context cues to identify the meaning of unfamiliar words, phrases, and expressions that could otherwise have multiple meanings.
- Predict a logical outcome based on information in a reading selection.
- Identify and summarize the major events in a narrative.



### **DOK 3**

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DOK 3 involves conducting analyses of the text to make inferences on author's purpose and use of textual features (e.g. literary devices to support and convey the main message); engaging in critical reading to attest to the credibility of the message, the internal logic, and implied values, attitudes, and biases; and going beyond the text by comparing features and meaning with other texts, considering the impact of the time period and other conditions when the text was written, and raising valid alternative hypotheses and conclusions to those presented in the text. At DOK 3 deep knowledge becomes a greater focus. Students are encouraged to go beyond the text; however, they are still required to show understanding of the ideas in the text. Students may be encouraged to explain, generalize, or connect ideas while applying reasoning and planning. Students must be able to support their thinking. Younger students who provide some valid evidence for their breakdown of a story into meaningful parts are performing at this category. Tasks at a Category 3 may involve abstract theme identification, inference across an entire passage with multiple paragraphs, or students' application of prior knowledge. Activities may also involve identifying more abstract connections between texts. Some examples that represent, but do not constitute all of, DOK 3 performance include:

- Explain or recognize how the author's purpose affects the interpretation of a reading selection.
- Summarize information from multiple sources to address a specific topic.
- Analyze and describe the characteristics of various types of literature.

## **DOK 4**

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DOK 4 involves at least as complex content as in the previous category, but also requires working on a task over an extended period of time such as when conducting a research project over weeks. The extended time that accompanies this type of activity allows for creation of original work and requires metacognitive awareness that typically increases the complexity of a DOK 4 task overall, in comparison with DOK 3 activities. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require the application of significant conceptual understanding and higher-order thinking.

DOK 4 activities may have students take information from multiple passages and texts to find supporting evidence and counter points for developing an argument or reaching conclusions or could involve creating an original thesis on a topic based on information drawn from relevant references. For younger students, an extended period of time could be multiple days for reaching conclusions from reading a number of texts. Students take information from a multiple of passages and are asked to apply this information to a new task. They may also be asked to develop hypotheses and perform complex analyses of the connections among texts requiring work over an extended period of time. Some examples that represent, but do not constitute all of, DOK 4 performance are:

- Analyze and synthesize information from multiple sources.
- Examine and explain alternative perspectives across a variety of sources.
- Describe and illustrate how common themes are found across texts from different cultures.

### **General Guidelines for Assigning DOK:**

- The DOK definitions can be applied to reading standards, tasks, or activities.
- Consider the complexity of the reading demands, not the difficulty for students.
- Consider the experience (prior knowledge) and grade-level expectations of a typical student.
- Do not rely on verbs (describe, explain, evaluate, etc.). Instead, consider the content complexity required for an adequate response.
- For multiple-choice assessment items, consider the item as a whole—including distractors—to judge complexity.
- An expectation or item that is confusing due to error or wording does not reflect increased content complexity—it simply means the statement needs revisions.
- The reading DOK levels were originally based on Valencia and Wixson (2000, pp. 909-935).

[www.webbalign.org](http://www.webbalign.org)



## Mathematics DOK Definitions

### DOK 1 (Recall)

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DOK 1 is defined by the rote recall of information or performance of a simple, routine procedure. For example, repeating a memorized fact, definition, or term, performing a simple algorithm, rounding a number, or applying a formula are DOK 1 performances.

Performing a one-step computation or operation, executing a well-defined multi-step procedure or a direct computational algorithm are also included in this category. Examples of well-defined multi-step procedures include finding the mean or median or performing long division. Reading information directly from a graph, plugging data into an electronic device to derive an answer, or simple paraphrasing are all tasks that are considered a level of complexity comparable to recall. A student answering a Level 1 item either knows the answer or does not: that is, the item does not need to be “figured out” or “solved.”

At a DOK 1, problems in context are straightforward and the solution path is obvious. For example, the problem may contain a keyword that indicates the operation needed. Other DOK 1 examples include plotting points on a coordinate system, using coordinates with the distance formula, or drawing lines of symmetry of geometric figures.

At more advanced levels of mathematics, symbol manipulation and solving a quadratic equation or a system of two linear equations with two unknowns are considered comparable to recall assuming students are expected or likely to use well-known procedures (e.g. factoring, completing the square, substitution, or elimination) to derive a solution. Operating on polynomials or radicals, using the laws of exponents, or simplifying rational expressions are considered rote procedures.

Verbs should not be classified as any category without considering what the verb is acting upon or the verb’s direct object. “*Identify* attributes of a polygon” is recall, but “*identify* the rate of change for an exponential function” requires a more complex analysis. To *describe* by listing the steps used to solve a problem is recall (i.e., *Show your work*) whereas to *describe* by providing a mathematical argument or rationale for a solution is more complex.



## DOK 2 (Skill/Concept)

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DOK 2 involves engaging in some mental processing beyond a habitual response as well as decision-making about how to approach the problem or activity. This category can require conceptual understanding and/or demonstrating conceptual knowledge by explaining thinking in terms of concepts.

DOK 2 tasks includes distinguishing among mathematical ideas, processing information about the underlying structure, drawing relationships among ideas, deciding among and performing appropriate skills, applying properties or conventions within a relevant and necessary context, transforming among different representations, interpreting and solving problems and/or graphs. When given a problem statement, formulating an equation or inequality, deriving a solution, and reporting the solution in the context of the problem fit within DOK 2. Processes such as classifying, organizing, and estimating that involve attending to multiple attributes, features, or properties also fall into this category.

Verifying that the number of objects in one set is larger or fewer than the number of objects in a second set by matching pairs or forming equivalent groups is a DOK 2 activity for a kindergartener. A first grader modeling a joining or separating situation pictorially or physically also is in this category.

Skills and concepts include constructing a graph and interpreting the meaning of critical features of a function, beyond just identifying or finding such features as well as describing the effects of parameter changes. Note, however, that using a well-defined procedure to find features of a standard function, such as the slope of a linear function with one variable or a quadratic, is a DOK 1. Graphing higher order or irregular functions is a DOK 2. Basic computation, as well as converting between different units of measurement, are generally a Category 1, but illustrating a computation by different representations (e.g. equations and a base-ten model) to explain the results is a DOK 2. Computing measures of central tendency (applying set procedures) is a DOK 1, but interpreting such measures for a data set within its context or using measures to compare multiple data sets is a DOK 2. Performing original formal proofs is beyond DOK 2, but explaining in one's own words the reasons for an action or application of a property is comparable to a DOK 2. Activities at a DOK 2 are not limited only to number skills, but may involve visualization skills (e.g. mentally rotating a 3D figure or transforming a figure) and probability skills requiring more than simple counting (e.g. determining a sample space or probability of a compound event). Other activities at this category include detecting or describing non-trivial patterns, explaining the purpose and use of experimental procedures, and carrying out experimental procedures.

### DOK 3 (Strategic Thinking)

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DOK 3 requires reasoning and analyzing using mathematical principles, ideas, structure, and practices. DOK 3 includes solving involved problems; conjecturing; creating novel solutions and forms of representation; devising original proofs, mathematical arguments, and critiques of arguments; constructing mathematical models; and forming robust inferences and predictions. Although DOK 2 also involves some problem solving, DOK 3 includes situations that are non-routine, more demanding, more abstract, and more complex than DOK 2. Such activities are characterized by producing sound and valid mathematical arguments when solving problems, verifying answers, developing a proof, or drawing inferences. Note that the sophistication of a mathematical argument that would be considered DOK 3 depends on the prior knowledge and experiences of the person. For example, primary school student arguments for number problems can be a DOK 3 activity (e.g. counting number of combinations, finding shortest route from home to school, computing with large numbers) as can abstract reasoning in developing a logical argument by students in higher grades. DOK 3 problems are those for which it is not evident from the first reading what is needed to derive a solution and so require demanding reasoning to work through. Such problems usually can be solved in different ways and may even have more than one correct solution based on different stated assumptions. Paraphrasing in one's own words or reproducing a proof that was previously demonstrated is a DOK 2. Applying properties and producing arguments in proving a theorem or identity not previously seen is a DOK 3. Also in the DOK 3 category is making sense of the mathematics in a situation, creating a mathematical model of a situation considering contextual constraints, deriving a new formula, designing and conducting an experiment, and interpreting findings.

#### DOK 4 (Extended Thinking)

DOK 4 demands are at least as complex as those of DOK 3, but a main factor that distinguishes the two categories is the need to perform activities over days and weeks (DOK 4) rather than in one sitting (DOK 3). The extended time that accompanies this type of activity allows for creation of original work and requires metacognitive awareness that typically increases the complexity of a DOK 4 task overall, in comparison with DOK 3 activities. Category 4 activities require complex reasoning, planning, research, and verification of work. Conducting a research project, performance activity, an experiment, and a design project as well as creating a new theorem and proof fit under Category 4. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, collecting water temperature from a river each day for a month and then reporting the findings by constructing a graph is a DOK 2 activity. Developing a mathematical model of the flow of water in a river for all four seasons using a number of variables would be a DOK 4 activity. It is likely that a DOK 4 activity will require making connections among a number of ideas or variables within the area of mathematics or among a number of content areas. Category 4 activities require selecting an appropriate approach among many alternatives to produce a product, conclusion, or finding, such as critiquing a body of work, synthesizing ideas in a new way, or creating an original model.

#### General Guidelines for Assigning DOK:

- The DOK definitions can be applied to mathematics standards, tasks, or activities.
- Consider the complexity of the mathematical demands, not the difficulty for students.
- Consider the mathematical experience (prior knowledge) and grade-level expectations of a typical student.
- Do not rely on verbs (describe, explain, evaluate, etc.). Instead, consider the content complexity required for an adequate response.
- For multiple-choice assessment items, consider the item as a whole—including distractors—to judge complexity.
- An expectation or item that is confusing due to error or wording does not reflect increased content complexity—it simply means the statement needs revisions.