

**California Modified Assessment  
Alignment Study Final Report  
English Language Arts, Science,  
and Mathematics**

**April 10–13, 2012**

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The findings in this study are those of the independent reviewing team and do **not** represent the opinion of the State of California.

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## **Executive Summary**

The California Modified Assessment (CMA) alignment studies in grades 3–11 English language arts, mathematics grades 3–7, Algebra I, and Geometry and grades 5, 8, and high school science were held on April 10–13, 2012, in Sacramento, California. The purpose of each alignment study was to determine the degree of alignment between the content standards for each grade and the test items found on the corresponding grade-level CMA. The alignment study involved eight grade-span groups of eight independent third-party reviewers whose primary role was first to judge the depth-of-knowledge level of each standard and then to judge the depth-of-knowledge level of each test item, including identifying the primary and possibly a secondary standard to which each item was aligned. Overall, the final results indicated that the alignment relationships for the studies are strong and clearly demonstrate that the CMA tests are well aligned to the respective California standards.

Eight reviewers participated in the alignment studies on each committee. Four of the reviewers for each study were California educators who had extensive teaching experience, including teaching students with disabilities and/or administering the CMA and expertise in their content areas. The other four reviewers for each alignment study were national content experts. Each national content expert also had expertise in their content area and experience in standards development, curriculum and instruction development, test development, and alignment studies. In addition, one of the national content experts also served as a group leader. The list of the reviewers and a brief summary of each national expert's professional qualifications is provided in Appendix G.

In addition to the alignment study reviewers, a national alignment study expert, Dr. Carsten Wilmes of the Wisconsin Center for Education Research (WCER) Consortium, also participated in the study. Dr. Wilmes is a well-known alignment expert who has broad experience in conducting alignment studies using the Webb model. Over the years he has worked closely with Dr. Norman Webb and Dr. Gary Cook, of the Wisconsin Center for Education Research. The national alignment study expert's role was to oversee the entire alignment process, ensuring that procedures were followed correctly. The national alignment study expert also provided reviewers with alignment training.

## Introduction

The California Modified Assessment (CMA) is an assessment of students' mastery of California content standards for English language arts, mathematics, and science developed for students with an individualized education program (IEP) who meet the CMA eligibility criteria approved by the California State Board of Education. The tests are given in grades 3–11 English language arts; grades 3–7 mathematics, Algebra I, and Geometry; and grades 5, 8, and high school science. They consist of multiple-choice tests in English language arts, mathematics, and science. The CMA measures student achievement based on California's content standards.

The CMA alignment studies are based on the work of Norman Webb, Wisconsin Center for Education Research, University of Wisconsin–Madison, who states that the alignment of the standards for student learning with assessments for measuring students' fulfillment of these expectations is an essential component for an effective standards-based education system. This study models Webb's procedures, including the use of the alignment criteria of categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation, as well as Webb's definition of alignment. The definition is as follows:

Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide the 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 a specific attribute of either of these two system components. Alignment describes the match between expectations and assessment that can be legitimately improved by changing either student expectations or assessments. Seen as a relationship between two or more system components, alignment can be determined by using the multiple criteria described in detail in a National Institute of Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments* (Webb, 2002).

Dr. Carsten Wilmes provided training for all reviewers to understand Webb's alignment model, depth-of-knowledge categories, and alignment criteria. He first trained the reviewers to identify the depth-of-knowledge (DOK) level for the content standards and the test questions. The training included reviewing the definitions and key words of the depth-of-knowledge levels, as defined by Webb (2006), and reviewing examples of test questions aligned to depth-of-knowledge levels. For more information regarding the process, see the section titled Alignment Study Process. Dr. Wilmes's professional qualifications are provided in Appendix G.

## Study Design

The California Modified Assessment alignment studies were designed to address the Elementary and Secondary Education Act (ESEA) and the United States Department of Education Standards and Assessments Peer Review Guidance for accountability. Using Dr. Norman Webb's criteria of categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation along with qualitative and quantitative results, the study was based on the following requirements.

1. The alignment of the California Modified Assessments (CMA) with the content standards and how the cognitive load differs from the California Standards Test (CST).
2. The state's assessment system involves multiple measures (measures that assess higher-order thinking skills and understanding of challenging content).
3. The CMA measures the knowledge and skills described in its academic content standards and not knowledge, skills, or other characteristics that are not specified in the academic content standards or grade-level expectations.
4. The CMA items are tapping the intended cognitive processes and the items and tasks are at the appropriate grade level.
5. The CMA and reporting structures are consistent with the subdomain structures of its academic content standards.

### **Requirement 1:**

- The alignment of the California Modified Assessment (CMA) with the content standards and how the cognitive load differs from the California Standards Test (CST).

Reviewers used the CMA content standards which were identical in structure and wording to the CST standards. However, some of the CST standards were not included in the CMA blueprints. Categorical concurrence, or the number of items per reporting cluster, was determined when the number of times reviewers assigned an item to a standard within a reporting cluster was averaged. Webb's criteria of six items per reporting cluster indicated acceptable alignment.

The depth of knowledge for each standard was determined by individual reviewers and, following discussion, consensus ratings were reached for all the English language arts, science, and mathematics standards. These CMA consensus values were compared to the CST consensus values, and it was determined whether the CMA values were below, at, or above the CST values.

### **Requirement 2:**

- The state's assessment system involves multiple measures (measures that assess higher-order thinking skills and understanding of challenging content).

Webb's English language arts, science, and mathematics depth-of-knowledge definitions and California-specific CMA sample items were provided and discussed in the large-group training led by Dr. Carsten Wilmes. After the large group training, more content-specific training of the

definitions and samples were presented by each group leader. (See Appendix A.) The content-specific training included rich discussions of the depth-of-knowledge levels and the nuances of the content in relation to the depth-of-knowledge levels. After training, the reviewers reached consensus on the depth-of-knowledge of the standards for English language arts, science, and mathematics. The reviewers then independently aligned the items of the assessment to the CMA standards and assigned a DOK rating to each item.

**Requirement 3:**

- The CMA measures the knowledge and skills described in its academic content standards and not knowledge, skills, or other characteristics that are not specified in the academic content standards or grade-level expectations.

Reviewers assigned a primary and/or secondary standard for all items with the exception of the mathematic reasoning standards. Only content standards from the specific grades' blueprint were provided to the reviewers.

**Requirement 4:**

- The CMA items are tapping the intended cognitive processes and the items and tasks are at the appropriate grade level.

As in Requirement 2, reviewers first came to consensus as to the depth-of-knowledge level of each of the standards and then independently assigned only one depth-of-knowledge level to each of the items. Intraclass correlation was calculated to help determine the reliability of the results and consistency among reviewers.

Also, Webb's criterion of depth-of-knowledge consistency indicates that reviewers were assigning the depth of knowledge to the items that were the intended cognitive demand of the standards. Reviewers were able to align items to the content standards for the applicable grade without difficulty.

**Requirement 5:**

- The CMA and reporting structures are consistent with the subdomain structures of its academic content standards.

When the reviewers independently determined which standard aligned to an item, the judgment was recorded as a hit. The total number of hits was averaged to determine how many items were assessed in each reporting cluster. The average number of reviewers' hits was compared to the state-approved blueprint for each assessment and its reporting clusters.

# Study Methodology

## Alignment Criteria

The California Modified Assessment alignment studies were based on the work of Dr. Norman Webb, Wisconsin Center for Education Research, University of Wisconsin–Madison. In his work, Dr. Webb states that the alignment of the standards for student learning with tests for measuring students’ fulfillment of these expectations is an essential component for an effective standards-based education system. The CMA alignment studies were designed to follow Webb’s procedures, including the use of depth-of-knowledge levels, and Webb’s definition of alignment (Webb, 2002). Webb’s alignment model is based upon four criteria as follows:

*Categorical Concurrence*—According to Webb (2002), an important aspect of alignment between each reporting cluster and the test is whether both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting cluster and the test incorporate the same content. For these alignment studies, this criterion was judged by first allowing reviewers to make a determination as to whether the test as a whole included questions measuring content from each of the reporting clusters. The reviewers used their professional opinions, as well as Webb’s suggested criteria, to determine that at least six questions measuring content from each reporting cluster is a good indicator of categorical concurrence between the reporting cluster and the test (Webb, 2002).

Using Webb’s methodology, the number of questions used to determine categorical concurrence—six for this study—is based on estimating the number of questions 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 a reasonable number, including the reliability of the subscale, the mean score, and the 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 0.1, it was estimated that six questions would produce an agreement coefficient of at least 0.63. This indicates that about 63% of the group would be consistently classified as either masters or non-masters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score was increased to one standard deviation from the mean to 0.77 and, with a cutoff score of 1.5 standard deviations from the mean, to 0.88.

For the CMA alignment studies, the criterion was judged by first allowing reviewers to align the items to the standards that measure the reporting clusters. Six questions were assumed as a minimum for a test measuring content knowledge related to a reporting cluster and as a basis for making some decisions about students’ knowledge of that reporting cluster. If the mean for six questions is three and one standard deviation is one question, then a cutoff score set at four would produce an agreement coefficient of 0.77. Any fewer questions with a mean of one-half of the questions would require a cutoff that would allow a student to miss only one question. This would be a very stringent requirement considering a reasonable standard error of measurement on the subscale. (See Appendix C.)

*Depth-of-Knowledge Consistency*—For the purpose of this study, Webb’s definition of depth-of-knowledge consistency was used. According to Webb (2002), depth-of-knowledge consistency

between content standards and test items indicates acceptable alignment if what is elicited from students on the test is at least as demanding cognitively as what students are expected to know and do as stated in the content standards. Therefore, for consistency to exist between the test items and the standards, each item should be coded the same depth-of-knowledge level as the standard or one level above the depth-of-knowledge level of the standard. According to the Webb model, as a measure of consistency, at least 50% of the items corresponding to a reporting cluster should be at or above the depth-of-knowledge level of the standard. For depth-of-knowledge consistency, this criterion was judged by first allowing reviewers to assign a depth-of-knowledge level to each item. (See Appendix C.)

The depth-of-knowledge definitions used for this alignment study are as follows: Level 1 (Recall and Reproduction), Level 2 (Skills and Concepts), and Level 3 (Strategic and Extended Thinking). Additional information concerning the levels can be found in Appendix A.

*Range-of-Knowledge Correspondence*—For the reporting clusters and the test questions to be aligned, the breadth of knowledge required on both must be comparable. The range-of-knowledge criterion is used to judge whether the span of knowledge expected of students by a reporting cluster is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the test questions associated with that reporting cluster. For an acceptable range of knowledge, at least 50% of the standards for a reporting cluster must have at least one related test question. The range-of-knowledge correspondence criterion was judged by first allowing reviewers to align the items to the standards that measure the reporting cluster and then evaluating the range-of-knowledge correspondence based on that data. (See Appendix C.)

*Balance of Representation*—The balance of representation is met if the emphasis of content and performance supplied by the questions (primary, secondary, or both) corresponds to the standards for the test as a whole. Reviewers determined whether the test questions were distributed among the standards that were assessed. (See Appendix C.)

The balance-of-representation criterion is used to indicate the degree to which one standard is given more emphasis on the test than another. An index is used to judge the distribution of the test questions. This index only considers the standard for a reporting cluster that has at least one related assessment item. The index in this study was computed by considering the difference between the proportion of standards and the proportion of hits (questions corresponding to eligible content) assigned to the standards. An index value of one signifies perfect balance and is obtained if the hits are equally distributed among the standards. Index values that approach zero signify that a large proportion of the hits are on only one or two of all of the content standards. Depending on the number of content standards and the number of hits, a unimodal distribution has an index value of less than 0.5. A bimodal distribution has an index value of around 0.55 or 0.6. Index values of 0.7 or higher indicate that questions are distributed among all of the standards, at least to some degree. Index values between 0.6 and 0.7 indicate the balance-of-representation criterion has only been “moderately” met. The balance-of-representation criterion was judged by first allowing reviewers to align the items to the standards that measure the reporting clusters.

The Webb model provides a reliable set of procedures and criteria for conducting alignment analysis studies. The model combines qualitative expert reviewers’ judgments and quantified coding and analysis of standards and test items. This final alignment study report includes a set

of statistics for each reporting cluster and grade on the degree of alignment between the content embedded in the standards for a given grade and the content in the items on the corresponding CMA.

The Webb model has been used extensively in many alignment studies throughout the country and has been recommended for use by the Chief Council of State School Officers (CCSSO). The alignment criteria of the Webb model adhere to the guidelines specified in the United States Department of Education’s Standards and Tests Peer Review documents and are in compliance with the requirements specified by the No Child Left Behind (NCLB) legislation.

A summary of Webb’s alignment criteria can be found in Table 1.

**Table 1: Alignment Levels for the Four Criteria**

<b>Alignment Level</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Categorical Concurrence</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
Yes	50%	mean is 6 or more	50%	0.70
Yes*	40%–49%	mean is 5 to 5.9	40%–49%	0.60–0.69
Weaker	less than 40%	mean is less than 5	less than 40%	less than 0.60

\*Indicates acceptable alignment; however, the alignment is not as strong as Yes.

The results for each of the four criteria discussed in this section were calculated using Webb’s methodology, reviewers’ averaged ratings, and reviewers’ comments. The results for depth-of-knowledge consistency, categorical concurrence, range-of-knowledge correspondence, and balance of representation are found in Appendix C.

### **Source of Challenge**

The purpose of each alignment study was to determine the degree of alignment among the content standards for each grade and the test items found on the corresponding grade-level CMA. In addition, the electronic data capture tool provided opportunities for reviewers to offer comments and/or feedback on how the test questions were written. Reviewers were also encouraged to note whether there was a source-of-challenge issue with a particular test question or questions. A source-of-challenge issue might include a reviewer’s opinion that a particular question contained misleading information or that a particular question might require prior knowledge. All comments about the items and/or source-of-challenge issues were provided to the California State Department of Education (CDE) for review and subsequent action, if required.

The source-of-challenge comments are not provided in this report. The final results of this alignment study reflect only the agreement between the standards and the corresponding CMA. In other words, the purpose of the alignment study was not to provide an opinion or to verify the general quality of the California standards or the test. Rather, the purpose of the study was to determine the degree of alignment.

## **Alignment Study Process**

Reviewers were asked to determine the degree of alignment between the standards (what students should know and be able to do) for each grade and the test questions found on the corresponding California Modified Assessment. In order to accomplish this task, the alignment study process involved four major steps:

- Training
- Assigning depth-of-knowledge levels to the standards for each grade or course
- Taking each test
- Determining what each item measures and identifying the depth-of-knowledge level for each item

A high-level overview of the steps in the process is provided on the next page. The alignment study process also involved the electronic capture of data. Information about the electronic data capture tool and its use in the process is provided below.

### **Use of the Electronic Data Capture Tool**

An electronic data capture tool was used in the alignment studies. The tool was designed specifically to facilitate the gathering of independent reviewers' judgments. The application automated the process of aligning the standards for a given content area and the test items found on the corresponding CMA. The tool and its reports made it possible to gauge in a timely manner the alignment between the standards and the items on the CMA on the basis of the criteria. In addition, the tool also provided opportunities for reviewers to provide additional information regarding items, including providing comments related to source of challenge. The item-by-standard codings by reviewers were then aggregated and analyzed.

The national alignment expert, Dr. Carsten Wilmes, provided training on the overall alignment process and the depth-of-knowledge levels and also served as the lead facilitator. Dr. Wilmes has extensive experience training third-party independent review committee members in the use of electronic data capture software for alignment studies. The training provided information on understanding not only the depth-of-knowledge levels but also on how to use the electronic data capture tool when assigning a depth-of-knowledge level to each standard and item.

## Alignment Study Process

### **Step 1: Receiving training**

Reviewers received training on Webb's depth-of-knowledge levels, the alignment process, and the use of the electronic data capture tool. The training was provided by the national alignment expert, Dr. Carsten Wilmes.

### **Step 2: Dividing into content-area groups**

Reviewers were divided into groups according to content area: English language arts, mathematics, and science. Reviewers received additional hands-on training on the use of the depth-of-knowledge levels.

### **Step 3: Determining the depth-of-knowledge level of each California standard**

Using the electronic data capture tool, reviewers individually determined the depth-of-knowledge level of each of the California standards. A group discussion followed. Reviewers reached consensus.

### **Step 4: Taking the test**

Reviewers took the CMA assessment, recording their answers in the test booklet.

### **Step 5: Determining what each item measured and the depth-of-knowledge of each item using the electronic data capture tool**

Using the electronic data capture tool, reviewers independently determined the depth-of-knowledge level for each item and then identified matches to the content standards. (Note: Reviewers were allowed to align each test item with up to two standards, one primary and one secondary, and enter the information into the electronic data capture tool. However, reviewers were allowed to determine and enter only one depth-of-knowledge level for a given item into the electronic data capture tool. The reviewers for Mathematics grades 3–7 were also asked to align each item to a mathematical reasoning standard.)

Throughout the alignment process, reviewers independently noted any source of challenge for each test item, providing written comments as necessary.

### **Step 6: Answering debriefing questions**

Using the electronic data capture tool, reviewers independently responded to debriefing questions.

## Alignment Study Participants

The CMA alignment study was composed of grade span groups for English language arts, science, and mathematics. Each group was composed of eight reviewers. Four of the reviewers for each study were California educators who had extensive teaching experience, including teaching students with disabilities and/or administering the CMA, and expertise in their content areas. The other four reviewers for each alignment study were national content experts. Each national content expert also had expertise in their content area and experience in standards development, curriculum and instruction development, test development, and alignment studies. In addition, one of the national content experts also served as a group leader for each group. The group leader’s task was to provide content-specific training on the depth-of-knowledge definitions and to facilitate the process described later in this section.

### California Experts

When selecting reviewers for the CMA alignment studies, care was taken so that the unique diversity of California students would be represented in the California alignment reviewers. An application letter was emailed to California District Coordinators to disperse to the field of teachers and administrators. Prospective applicants submitted the application electronically. Preliminary selection of participants with at least one alternate per grade span was made and submitted to CDE for approval. Verification was completed to ensure the applicants either had experience teaching students with disabilities in their classrooms or had administered the CMA. It was determined that 100% of the participants had experience teaching students with disabilities and 56% of the participants had administered the CMA.

The demographics that were considered in selecting participants are provided in the tables below, and the actual criteria for selecting the groups can be found in Appendix H.

**Table 2: California Reviewers’ Demographics—Region, Gender, and Ethnicity**

	n =	Region of California			Gender		Participants' Ethnicity				
		North	Central	South	Male	Female	Asian	Black	Hispanic	Two or More Races	White
<b>Reviewers</b>	32	8	6	18	7	25	2	2	4	4	20
<b>Teachers</b>	24	7	3	14	6	18	1	1	2	4	16
<b>Administrators</b>	8	1	3	4	1	7	1	1	2	0	4

**Table 3: California Reviewers’ Demographics—Certification and School Type**

	n =	SPED Certified	Mean Years in SPED	ELL Certified	Mean Years Education Experience	Schools by Type		
						Rural	Suburban/Town	Metro/Urban
<b>Reviewers</b>	32	23	10.2	23	11.1	6	16	10
<b>Teachers</b>	24	18	8.1	17	11	6	10	8
<b>Administrators</b>	8	5	17.8	6	11.4	0	6	2

**Table 4: California Reviewers’ Demographics—Representation and Experience**

	n =	Number of Schools Represented	Number of Districts Represented	Number Experienced at Working with Special Needs Students	Number with Experience Administering CMA
<b>Reviewers</b>	32	27	17	32	18
<b>Teachers</b>	24	23	15	24	13
<b>Administrators</b>	8	4	8	8	5

The list of the California reviewers and the national content experts can be found in Appendix G.

### **National Content Experts**

The national content experts were from various locations in the United States, including Alabama, California, Florida, Georgia, Illinois, Massachusetts, Minnesota, North Carolina, Pennsylvania, Texas, West Virginia, and Wisconsin. Their expertise includes degrees in their content along with experience in item and standard development, test design, teacher education, measurement, and curriculum development at the state and local levels.

A brief summary of each national content expert’s professional qualifications are provided in Appendix G. Also included in the appendix are the summaries of the alignment study trainer, project advisor, project manager, the special populations’ expert, bias and sensitivity expert, the participant logistics manager, and the data analyst. These experts provided support in their area of expertise and ensured that the training, process, and overall alignment study followed the prescribed procedures.

## Data Analysis Results—English Language Arts

### Summary of Results

Using the electronic data capturing tool, reviewers independently entered the depth-of-knowledge level of each mathematics item. They also determined what each item measured. The tool provided the statistical data to determine whether each English language arts assessment as a whole at a given grade level included items measuring content from each of the reporting clusters. The tool also provided the statistical data to determine categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation. A high-level summary alignment analysis for categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation is provided in Table 5. The results of the alignment relationship between the CMA standards for English language arts and the corresponding English language arts CMA for grades 3–11 is very strong, as noted in the interpretation of Table 5. Detailed information can be found in Appendix C and Appendix E.

**Table 5: Summary of Alignment**

<b>Grade/Course</b>	<b>Reporting Cluster</b>	<b>Categorical Concurrence</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
<b>3</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>4</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>5</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>6</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>7</b>	Vocabulary	Yes	Weaker	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes*
	Language	Yes	Yes	Yes	Yes
<b>8</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Weaker	Yes	Yes
	Language	Yes	Yes	Yes	Yes

**Table 5: Summary of Alignment (Continued)**

<b>Grade/Course</b>	<b>Reporting Cluster</b>	<b>Categorical Concurrence</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
<b>9</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>10</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes	Yes	Yes
<b>11</b>	Vocabulary	Yes	Yes	Yes	Yes
	Reading for Understanding	Yes	Yes	Yes	Yes
	Language	Yes	Yes*	Yes	Yes

\*Indicates acceptable alignment; however, the alignment is not as strong as Yes.

### **Depth-of-Knowledge Consensus**

Table 6 summarizes the eight reviewers' consensus on the depth-of-knowledge levels of the standards by grade for English language arts. Appendix B provides the depth-of-knowledge consensus values for each standard as determined by the reviewers.

**Table 6: Depth-of-Knowledge Consensus**

<b>Grade</b>	<b>Number of Standards per Grade</b>	<b>Depth-of-Knowledge Level</b>	<b>Number of Standards by Depth-of-Knowledge Level and Percentage</b>	
			<b>Number</b>	<b>Percentage</b>
<b>3</b>	33	1	18	55%
		2	12	36%
		3	3	9%
<b>4</b>	31	1	10	32%
		2	13	42%
		3	8	26%
<b>5</b>	30	1	8	27%
		2	12	40%
		3	10	33%
<b>6</b>	31	1	11	35%
		2	7	23%
		3	13	42%
<b>7</b>	28	1	10	36%
		2	6	21%
		3	12	43%

**Table 6: Depth-of-Knowledge Consensus (Continued)**

Grade	Number of Standards per Grade	Depth-of-Knowledge Level	Number of Standards by Depth-of-Knowledge Level and Percentage	
			Number	Percentage
8	27	1	2	7%
		2	9	33%
		3	14	52%
		4	2	7%
9	34	1	7	21%
		2	12	35%
		3	15	44%
10	34	1	8	24%
		2	14	41%
		3	12	35%
11	28	1	1	4%
		2	13	46%
		3	14	50%

## Conclusions and Recommendations

### Categorical Concurrence

#### **Conclusion**

The CMA for English language arts grades 3–11 includes standards in three reporting clusters: Vocabulary, Reading for Understanding, and Language. According to Webb (2002), an important aspect of alignment between each reporting cluster and the test is whether both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting clusters and the test incorporate the same content. The acceptable level for categorical concurrence of six items was met for all reporting clusters across all grades.

#### **Recommendation**

No recommendations are given as the CMAs for English language arts for all grades were in alignment for categorical concurrence.

### Depth-of-Knowledge Consistency

#### **Conclusion**

As stated earlier in this report, depth-of-knowledge consistency between standards and test items indicates alignment if what is elicited from students on the test is at least as demanding cognitively as what students are expected to know and do as stated in the standards. Therefore, for consistency to exist between the test items and the standards, each item should be coded at or above the same depth-of-knowledge level as the standard or one level above the depth-of-knowledge level of the standard. According to the Webb model, as a measure of consistency, at least 50% of the items must be at or above the depth-of-knowledge level of the corresponding

standard. The results indicate that the acceptable depth-of-knowledge consistency of 50% was met for most reporting clusters across the grade levels.

### **Recommendation**

Grade 7 Vocabulary and grade 8 Reading for Understanding were not as strong as the other standards. One possible solution for grade 7 Vocabulary and grade 8 Reading for Understanding is for future development to focus on including more depth-of-knowledge Level 2 and Level 3 items where applicable. It may also be beneficial to pay special attention to grade 11 Language to ensure that the items have sufficient cognitive demand in relation to the standards they are measuring. It should also be noted that the review committee determined that standards R3.5 and R3.7 in grade 8 Reading for Understanding were a depth-of-knowledge Level 4. It is generally assumed that depth-of-knowledge Level 4 items cannot be written for multiple-choice or constructed-response items used for standardized testing, and in this case, all items aligned to these two standards were below depth-of-knowledge Level 4, which contributed to the possible need for improvement. Grade 11 Language was met at an acceptable level but was not as strong as 50%.

### Range-of-Knowledge Correspondence

#### **Conclusion**

According to Webb's model, for reporting clusters and the items on a given test to be aligned, the breadth of knowledge required on both should be comparable. This is called range-of-knowledge correspondence. The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a reporting cluster is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the items on the test. For an acceptable range-of-knowledge correspondence, according to Webb's model, at least 50% of the standards with a given reporting cluster should have at least one item aligned to them. The results indicate that the range-of-knowledge criterion of 50% was met for all reporting clusters in all grades.

#### **Recommendation**

No recommendations are given as the CMAs for English language arts for all grades were in alignment for range-of-knowledge correspondence.

### Balance of Representation

As stated earlier in this report, balance of representation is the degree to which one standard in a reporting cluster is given more emphasis on the test than another standard within the same reporting cluster. An index is used to judge the distribution of the test items.

#### **Conclusion**

The results indicate the balance of representation was sufficient for all grades but was not as strong for grade 7 Reading for Understanding. It may be beneficial to pay special attention in the development of future assessments to ensure that there continues to be a distribution of standards being tested across the grade 7 Reading for Understanding reporting cluster.

#### **Recommendation**

No recommendations are given as the CMAs for English language arts for all grades were in alignment for balance of representation.

### **ESEA Requirements**

Using Dr. Norman Webb’s criteria of categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation along with qualitative and quantitative results, it was determined that the CMAs for English language arts are aligned and meet the following Elementary and Secondary Education Act (ESEA) requirements.

1. The alignment of the California Modified Assessments (CMA) with the content standards and how the cognitive load differs from the California Standards Test (CST).

As previously discussed in the Study Design, the CMA is aligned with the English language arts content standards. The Webb criterion of categorical concurrence indicates alignment between each reporting cluster and the test if both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting cluster and the test incorporate the same content. The reviewers found that for all grades and reporting clusters of English language arts there was alignment to the standards as indicated in Table 5 by “Yes.” Therefore, the CMAs do measure the content standards. (See Appendix C.)

The cognitive load for the CMA differs from that for the CST. As indicated in the table below, the cognitive load or the depth-of-knowledge consensus of the CMA is at, below, or above that of the CST. Taking into consideration the population of students being assessed by each assessment and the fact that each was reviewed by a different group of participants, the depth-of-knowledge of the standards could be rated differently.

**Table 7: Comparison of the Depth-of-Knowledge Consensus of the CMA Standards to the CST Standards**

<b>Grade</b>	<b>Number of CMA Standards Below the CST</b>	<b>Number of CMA Standards At the CST</b>	<b>Number of CMA Standards Above the CST</b>
<b>3</b>	6	25	1
<b>4</b>	8	21	0
<b>5</b>	17	9	0
<b>6</b>	16	14	0
<b>7</b>	17	11	0
<b>8</b>	14	11	2
<b>9*</b>	n/a	n/a	n/a
<b>10*</b>	n/a	n/a	n/a
<b>11*</b>	n/a	n/a	n/a

\*Note: Grades 9–11 CST depth-of-knowledge consensus was not available for comparison.

2. The state’s assessment system involves multiple measures (measures that assess high-order thinking skills and understanding of challenging content).

The English language arts depth-of-knowledge consensus in Table 6 shows the percentage of the standards that are depth-of-knowledge levels 1, 2, and 3. This indicates the assessments for all grades assess a range of high-order thinking skills and understanding of challenging content. (See Appendix B.)

Additionally, Table 5 shows depth-of knowledge consistency, which indicates that the items on the assessments are measuring the standards at or above the depth-of-knowledge level, except for the grade 7 Vocabulary and grade 8 Reading for Understanding reporting clusters. This result indicates that the items are measuring a range of high-order thinking skills and understanding of challenging content but not as strongly for grade 7 Vocabulary and grade 8 Reading for Understanding that are measuring the content lower than the depth of knowledge of the standards. (See Appendix C.)

3. The CMA measures the knowledge and skills described in its academic content standards and not knowledge, skills, or other characteristics that are not specified in the academic content standards or grade-level expectations.

The English language arts range-of-knowledge correspondence indicates whether there is at least one item aligned to at least 50% of the standards within a reporting cluster. This criterion gives an indication of whether the breadth of content within each reporting cluster is being assessed and whether students are being asked to show a wide range of what they are expected to know and be able to do. The range-of-knowledge results for all the grades of English language arts indicate that there is an acceptable range of items across the standards, and the CMA measures the breadth of knowledge in its academic content standards. Reviewers were able to align items to the grade level standards which indicates that the items were testing the knowledge and skills specified in its academic content standards and not knowledge and skills not specified in its academic content standards. (See Appendix C.)

4. The CMA items are tapping the intended cognitive processes, and the items and tasks are at the appropriate grade level.

Since Webb’s criterion of depth-of-knowledge was consistently met it indicates that reviewers were assigning the depth of knowledge to the items that were the intended cognitive demand of the standards. English language arts reviewers were able to align items to the content standards for each grade without difficulty. The reliability among reviewers was good, indicating reviewers were consistent in assigning the depth-of-knowledge levels. (See Appendix F.)

5. The CMA and reporting structures are consistent with the subdomain structures of its academic content standards.

When the average number of reviewers’ hits is compared to the CMA blueprints the results showed that Webb’s criterion of balance of representation for the reporting clusters was being met, reporting clusters, and the test as a whole. As shown in the following tables the

average number of hits is equal to, or almost equal to, the intended number of items on the CMA blueprints for the English language arts for grades 3–11. This may be a result of reviewers sometimes aligning the items to a primary and/or secondary standard, where applicable.

**Table 8: Comparison of Grades 3 and 4 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 3</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 4</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
Vocabulary	14	15.25	Vocabulary	11	12.13
Reading for Understanding	17	17.75	Reading for Understanding	16	18.13
Language	17	16.75	Language	21	19.5

**Table 9: Comparison of Grades 5 and 6 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 5</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 6</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
Vocabulary	8	10.88	Vocabulary	9	10.5
Reading for Understanding	18	17.88	Reading for Understanding	22	24.63
Language	22	22.5	Language	23	19.63

**Table 10: Comparison of Grades 7 and 8 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 7</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 8</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
Vocabulary	8	8.75	Vocabulary	6	7.25
Reading for Understanding	22	26.13	Reading for Understanding	24	24.75
Language	24	22.25	Language	24	24.13

**Table 11: Comparison of Grades 9 and 10 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 9</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 10</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
Vocabulary	7	8.13	Vocabulary	7	7
Reading for Understanding	27	25	Reading for Understanding	27	29.38
Language	26	26.25	Language	26	26.75

**Table 12: Comparison of Grade 11 Blueprint to the Average Number of Hits for Each Grade**

<b>Grade 11</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Vocabulary</b>	7	7.38
<b>Reading for Understanding</b>	29	31.88
<b>Language</b>	24	24.63

Webb’s balance-of-representation index was also calculated for all grades, which gives an indication if one standard is receiving more emphasis on the test than another standard within a reporting cluster. In this way it can be determined by reporting cluster if there are any areas that may be overemphasized and possibly deviate from the intended blueprint. The balance of representation for all English language arts grades was “Yes” with the exception of grade 7 Reading for Understanding standard which was “Yes\*.” Both “Yes” and “Yes\*” indicate acceptable alignment; however, “Yes\*” indicates the alignment is not as strong as “Yes” and may need more items distributed among the standards within those reporting clusters. (See Appendix C.)

### **Reliability among Reviewers**

The intraclass correlation is based on the mean squares from the analysis of variance of a two-way random effects model, reviewers crossed with items (Shrout and Fleiss, 1979) as described in Appendix F. The overall intraclass correlation among the reviewers’ assignment of depth-of-knowledge levels to items was reasonably high for English language arts because the correlations for all grades is .70 or above. If there is a low variance among the reviewers’ coding in assigning depth-of-knowledge levels to items, the intraclass correlation has greater error. Table 13 provides a summary of the intraclass correlation.

**Table 13: Summary of Reliability**

<b>Grade</b>	<b>Intraclass Correlation</b>
<b>3</b>	.92
<b>4</b>	.86
<b>5</b>	.89
<b>6</b>	.86
<b>7</b>	.94
<b>8</b>	.84
<b>9</b>	.85
<b>10</b>	.88
<b>11</b>	.81

## Data Analysis Results—Science

### Summary of Results

Using the electronic data capturing tool, reviewers independently entered the depth-of-knowledge level of each mathematics item. They also determined what each item measured. The tool provided the statistical data to determine whether each science assessment as a whole at a given grade level included items measuring content from each of the reporting clusters. The tool also provided the statistical data to determine categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation. A high-level summary alignment analysis for categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation is provided in Table 14. The results of the alignment relationship between the standards for science and the corresponding science CMA for grades 5, 8, and high school is very strong, as noted in the interpretation of Table 14. Detailed information can be found in Appendix C and Appendix E.

**Table 14: Summary of Alignment**

<b>Grade/Course</b>	<b>Reporting Cluster</b>	<b>Categorical Concurrence</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
<b>5</b>	Physical Science	Yes	Yes	Yes	Yes
	Life Science	Yes	Yes	Yes	Yes
	Earth Science	Yes	Yes	Yes	Yes
	Investigation and Experimentation	Yes*	Yes*	Yes	Yes
<b>8</b>	Motion	Yes	Yes	Yes	Yes
	Earth Science	Yes	Yes	Yes	Yes
	Matter	Yes	Yes	Yes	Yes
	Investigation and Experimentation	Yes*	Weaker	Yes	Yes
<b>High School</b>	Cell Biology and Genetics	Yes	Yes	Yes	Yes
	Evolution and Ecology	Yes	Yes	Yes	Yes
	Physiology	Yes	Yes*	Yes	Yes
	Investigation and Experimentation	Yes	Yes	Weaker	Yes

### Depth-of-Knowledge Consensus

Table 15 summarizes the eight reviewers' consensus on the depth-of-knowledge levels of the standards for science by grade. Appendix B provides the depth-of-knowledge consensus values for each standard as determined by the reviewers.

**Table 15: Depth-of-Knowledge Consensus**

Grade	Number of Standards per Grade	Depth-of-Knowledge Level	Number of Standards by Depth-of-Knowledge Level and Percentage	
			Number	Percentage
5	43	1	24	56%
		2	14	33%
		3	5	12%
8	43	1	29	67%
		2	11	26%
		3	3	7%
High School	52	1	29	56%
		2	22	42%
		3	1	2%

## Conclusions and Recommendations

### Categorical Concurrence

#### **Conclusion**

The CMA for science grades 5, 8, and high school includes reporting clusters at grade 5 for Physical Science, Life Science, Earth Science, and Investigation and Experimentation; at grade 8 for Motion, Earth Science, Matter, and Investigation and Experimentation; and in high school for Cell Biology and Genetics, Evolution and Ecology, Physiology, and Investigation and Experimentation. According to Webb (2002), an important aspect of alignment between each reporting cluster and the test is whether both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting clusters and the test incorporate the same content.

The acceptable level for categorical concurrence of six items was met for most standards across all grades. Categorical concurrence did meet an acceptable level but was not as strong for grades 5 and 8 Investigation and Experimentation.

#### **Recommendation**

No recommendations are given as the science CMA for all grades was in alignment for categorical concurrence. However, since the Investigation and Experimentation reporting cluster was not as strong in grades 5 and 8, it may be beneficial to pay special attention to the Investigation and Experimentation reporting cluster for future assessments to ensure that at least six items are present in that reporting cluster.

## Depth-of-Knowledge Consistency

### **Conclusion**

As stated earlier in this report, depth-of-knowledge consistency between standards and test items indicates alignment if what is elicited from students on the test is at least as demanding cognitively as what students are expected to know and do as stated in the standards. Therefore, for consistency to exist between the test items and the standards, each item should be coded at or above the same depth-of-knowledge level as the standard or one level above the depth-of-knowledge level of the standard. According to the Webb model, as a measure of consistency, at least 50% of the items must be at or above the depth-of-knowledge level of the corresponding standard.

The results indicate that the acceptable depth-of-knowledge consistency of 50% was met for most reporting clusters for grade 5, grade 8, and high school. However, grade 5 Investigation and Experimentation was acceptable but not as strong as the other reporting clusters.

Grade 8 Investigation and Experimentation may need improvement because less than 50% of the items were at or above the depth of knowledge levels of the standards.

The high school reporting cluster Physiology was acceptable but not as strong as other reporting clusters.

### **Recommendation**

Since grade 5 Investigation and Experimentation was acceptable but not as strong as other reporting clusters, it may be beneficial to pay close attention to this reporting cluster for future assessments to ensure that the items in the assessment are at or above the depth-of-knowledge levels of the standard.

Future development for grade 8 Investigation and Experimentation should possibly focus on depth-of-knowledge Level 3 items for those standards that the committee determined to be depth-of-knowledge Level 3 during the consensus process. The standards are IE8.9.a, IE8.9.b, and IE8.9.e.

The reporting cluster Physiology for high school was acceptable but not as strong as other reporting clusters, so it may be beneficial to pay close attention to this reporting cluster for future assessments to ensure that the items in the assessment are at or above the depth-of-knowledge level of the standard.

## Range-of-Knowledge Correspondence

### **Conclusion**

According to Webb's model, for reporting clusters and the items on a given test to be aligned, the breadth of knowledge required for both should be comparable. This is called range-of-knowledge correspondence. The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a reporting cluster is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the items on the test. For an acceptable range-of-knowledge correspondence, according to Webb's model, at least 50% of the standards within a reporting cluster should have at least one item aligned to

them. The results indicate that the range-of-knowledge criterion of 50% was met for all reporting clusters except high school Investigation and Experimentation, which may need improvement. The high school Investigation and Experimentation reporting cluster did not receive any hits and had no items aligned to it. (See Appendix C.)

### **Recommendation**

One possible solution for the high school Investigation and Experimentation reporting cluster may be to review and ensure that there is sufficient coverage across the standards within the reporting cluster and to target future development for those standards that have less representation within the Investigation and Experimentation reporting cluster.

### Balance of Representation

### **Conclusion**

As stated earlier in this report, balance of representation is the degree to which one standard in a reporting cluster is given more emphasis on the test than another standard within the same reporting cluster. An index is used to judge the distribution of the test items. The results indicate that the balance-of-representation criterion was met for all science grades across all reporting clusters.

### **Recommendation**

No recommendations are given as the science CMA for all grades was in alignment for balance of representation.

### **ESEA Requirements**

Using Dr. Norman Webb’s criteria of categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation along with qualitative and quantitative results, it was determined that the science California Modified Assessments are aligned and meet the following Elementary and Secondary Education Act (ESEA) requirements.

1. The alignment of the California Modified Assessments (CMA) with the content standards and how the cognitive load differs from the California Standards Test (CST).

As previously discussed in the Study Design, the science CMAs are aligned with the science content standards. The Webb criterion of categorical concurrence indicates alignment between each reporting cluster and the test if both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting cluster and the test incorporate the same content. The reviewers found that for all grades and reporting clusters of science there was alignment to the standards as indicated in Table 14 by “Yes” or “Yes\*.” The CMAs do measure the content standards, however, not as strongly in grades 5 and 8 in the Investigation and Experimentation reporting cluster. (See Appendix C.) As previously stated in the Recommendation section for categorical concurrence, it may be beneficial to pay special attention to the Investigation and Experimentation reporting cluster for future assessments to ensure that at least six items are present in that reporting cluster.

The cognitive load for the CMA differs from that for the CST. As indicated in the following table, the cognitive load or the depth-of-knowledge consensus of the CMA is at, below, or

above that of the CST. Taking into consideration the population of students being assessed by each assessment and the fact that each was reviewed by a different group of participants, the depth-of-knowledge level of the standards could be rated differently.

**Table 16: Comparison of the Depth-of-Knowledge Consensus of the CMA Standards to the CST Standards**

<b>Grade</b>	<b>Number of CMA Standards Below the CST</b>	<b>Number of CMA Standards At the CST</b>	<b>Number of CMA Standards Above the CST</b>
<b>5</b>	23	20	0
<b>8</b>	24	18	1
<b>High School</b>	39	13	0

2. The state’s assessment system involves multiple measures (measures that assess high-order thinking skills and understanding of challenging content).

The science depth-of-knowledge consensus in Table 15 shows the percentage of the standards that are depth-of-knowledge levels 1, 2, and 3. These results indicate the science assessments for grades 5, 8 and high school assess a range of high-order thinking skills and understanding of challenging content. (See Appendix B.)

Additionally, Table 14 shows depth-of knowledge consistency indicating that the items in the assessments are measuring the reporting clusters at or above the depth-of-knowledge level except for grades 5 and 8 Investigation and Experimentation reporting clusters. This indicates that the items are measuring a range of high-order thinking skills and understanding of challenging content, but some of the items for grades 5 and 8 Investigation and Experimentation are below the depth-of-knowledge level of the standard. (See Appendix C.)

3. The CMA measures the knowledge and skills described in its academic content standards and not knowledge, skills, or other characteristics that are not specified in the academic content standards or grade-level expectations.

The range-of-knowledge correspondence indicates whether there is at least one item aligned to at least 50% of the standards within a reporting cluster. This criterion gives an indication of whether the breadth of the content within each reporting cluster is being assessed and whether students are being asked to show a wide range of what they are expected to know and be able to do. The range-of-knowledge results for science grades 5 and 8 indicate that there is an acceptable range of items across the standards, and the CMA measures the breadth of knowledge in its academic content standards. However, the high school science reporting cluster Investigation and Experimentation does not have items in 50% of the standards and, as noted in the Recommendation section for range of knowledge, there should be a review of the form to ensure that there is sufficient coverage across the standards within the reporting cluster and to target future development for those standards that have less representation within the Investigation and Experimentation reporting cluster. Reviewers were able to align

items to the grade level standards which indicates that the items were testing the knowledge and skills specified in its academic content standards and not knowledge and skills not specified in its academic content standards. (See Appendix C.)

4. The CMA items are tapping the intended cognitive processes, and the items and tasks are at the appropriate grade level.

Since Webb’s criterion of depth-of-knowledge was consistently met it indicates that reviewers were assigning the depth of knowledge to the items that were the intended cognitive demand of the standards. However, for grades 5 and 8 Investigation and Experimentation, items were assigned a depth of knowledge lower than the standard. Reviewers were able to align items to the content standards for each grade without difficulty. The reliability among reviewers was good, indicating reviewer consistency in assigning depth-of-knowledge levels. (See Appendix F.)

5. The CMA and reporting structures are consistent with the subdomain structures of its academic content standards.

When the average number of reviewers’ hits is compared to the CMA blueprints the results showed that Webb’s criterion of balance of representation for the reporting clusters was being met. As shown in the tables below, the average number of hits equals, or almost equals, the intended number of items on the CMA blueprints for science grades 5, 8, and high school. This may be a result of reviewers sometimes aligning the items to a primary and/or secondary standard, where applicable.

**Table 17: Comparison of Grades 5 and 8 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 5</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 8</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Physical Science</b>	14	15.5	<b>Motion</b>	19	25.63
<b>Life Science</b>	14	14.38	<b>Earth Science</b>	7	7.5
<b>Earth Science</b>	14	15.75	<b>Matter</b>	23	27.38
<b>Investigation and Experimentation</b>	6	5.75	<b>Investigation and Experimentation</b>	5	5

**Table 18: Comparison of the High School Blueprint to the Average Number of Hits for High School**

<b>High School</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Cell Biology and Genetics</b>	22	24.5
<b>Evolution and Ecology</b>	22	25.88
<b>Physiology</b>	10	10
<b>Investigation and Experimentation</b>	6	6.13

Webb’s balance-of-representation index was also calculated for science grades 5, 8, and high school, which is an indication if one standard is receiving more emphasis on the test than another standard within a reporting cluster. In this way it can be determined by reporting cluster if there are any areas that may be overemphasized and possibly deviate from the intended blueprint. The balance of representation for science grades 5, 8, and high school was “Yes,” which indicates acceptable alignment of items across the reporting clusters. (See Appendix C.)

### **Reliability among Reviewers**

The intraclass correlation is based on the mean squares from the analysis of variance of a two-way random effects model, reviewers crossed with items (Shrout and Fleiss, 1979) as described in Appendix F. The overall intraclass correlation among the reviewers’ assignment of depth-of-knowledge levels to items was good for science grades 5, 8, and high school because the correlation is .70 or above. If there is a low variance among the reviewers’ coding in assigning depth-of-knowledge levels to items, the intraclass correlation has greater error. Table 19 provides a summary of the intraclass correlation.

**Table 19: Summary of Reliability**

<b>Grade</b>	<b>Intraclass Correlation</b>
<b>5</b>	.76
<b>8</b>	.71
<b>High School</b>	.87

## Data Analysis Results—Mathematics

### Summary of Results

Using the electronic data capturing tool, reviewers independently entered the depth-of-knowledge level of each mathematics item. They also determined what each item measured. The tool provided the statistical data to determine whether each mathematics assessment as a whole at a given grade level included items measuring content from each of the reporting clusters. The tool also provided the statistical data to determine categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation. A high-level summary alignment analysis for categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation is provided in Table 20. The results of the alignment relationship between the standards for mathematics and the corresponding mathematics California Modified Assessment for grades 3–7, Algebra I, and Geometry is very strong, as noted in the interpretation of Table 20. Detailed information can be found in Appendix C and Appendix E.

**Table 20: Summary of Alignment**

<b>Grade/Course</b>	<b>Reporting Cluster</b>	<b>Categorical Concurrence</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
<b>3</b>	Number Sense	Yes	Yes	Yes	Yes
	Algebra and Data Analysis	Yes	Yes	Yes	Yes
	Measurement and Geometry	Yes	Yes	Yes	Yes
	Mathematical Reasoning	Yes	Weaker	Yes	Weaker
<b>4</b>	Number Sense	Yes	Yes	Yes	Yes
	Algebra and Data Analysis	Yes	Yes	Yes	Yes
	Measurement and Geometry	Yes	Yes	Yes	Yes
	Mathematical Reasoning	Yes	Weaker	Yes	Weaker
<b>5</b>	Number Sense	Yes	Yes	Yes	Yes
	Algebra and Data Analysis	Yes	Yes	Yes	Yes
	Measurement and Geometry	Yes	Yes	Yes	Yes
	Mathematical Reasoning	Yes	Weaker	Yes	Weaker

**Table 20: Summary of Alignment (Continued)**

<b>Grade/Course</b>	<b>Reporting Cluster</b>	<b>Categorical Concurrence</b>	<b>Depth-of-Knowledge Consistency</b>	<b>Range-of-Knowledge Correspondence</b>	<b>Balance of Representation</b>
<b>6</b>	Number Sense	Yes	Yes*	Yes	Yes
	Algebra and Data Analysis	Yes	Yes	Yes	Yes
	Measurement and Geometry	Yes	Yes*	Yes	Yes
	Mathematical Reasoning	Yes	Weaker	Yes	Yes*
<b>7</b>	Number Sense	Yes	Yes	Yes	Yes
	Algebra and Data Analysis	Yes	Yes	Yes	Yes
	Measurement and Geometry	Yes	Yes	Yes	Yes
	Mathematical Reasoning	Yes	Yes*	Yes	Yes
<b>Algebra I</b>	Number Properties, Operations, and Linear Equations	Yes	Yes	Yes	Yes
	Graphing and Systems of Linear Equations	Yes	Yes	Yes	Yes
	Quadratics and Polynomials	Yes	Yes	Yes	Yes
	Functions and Rational Expressions	Yes	Yes	Yes	Yes
<b>Geometry</b>	Logic and Geometric Proofs	Yes	Weaker	Yes	Yes
	Volume and Area Formulas	Yes	Yes	Yes	Yes
	Angle Relationships, Constructions, and Lines	Yes	Yes	Yes	Yes
	Trigonometry	Yes	Yes	Yes	Yes

## Depth-of-Knowledge Consensus

Table 21 summarizes the eight reviewers' consensus on the depth-of-knowledge levels of the standards for mathematics by grade. Appendix B provides the depth-of-knowledge consensus values for each standard as determined by the reviewers.

**Table 21: Depth-of-Knowledge Consensus**

Grade	Number of Standards per Grade	Depth-of-Knowledge Level	Number of Standards by Depth-of-Knowledge Level and Percentage	
			Number	Percentage
3	33	1	16	48%
		2	17	52%
		3	0	0%
4	38	1	26	68%
		2	11	29%
		3	1	3%
5	24	1	12	50%
		2	12	50%
		3	0	0%
6	27	1	10	37%
		2	17	63%
		3	0	0%
7	37	1	9	24%
		2	28	76%
		3	0	0%
Algebra I	22	1	3	14%
		2	14	64%
		3	5	23%
Geometry	22	1	5	23%
		2	9	41%
		3	8	36%

## Conclusions and Recommendations

### Categorical Concurrence

#### **Conclusion**

The CMA for mathematics grades 3–7 includes standards in four reporting clusters: Number Sense, Algebra and Data Analysis, Measurement and Geometry, and Mathematical Reasoning. For Algebra I the reporting clusters are Number Properties, Operations, and Linear Equations; Graphing and Systems of Linear Equations; Quadratics and Polynomials; and Functions and

Rational Expressions. For Geometry the reporting clusters are Logic and Geometric Proofs; Volume and Area Formulas; Angle Relationships, Constructions, and Lines; and Trigonometry. According to Webb (2002), an important aspect of alignment between each reporting cluster and the test is whether both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting clusters and the test incorporate the same content. The acceptable level for categorical concurrence of six items was met for all reporting clusters across all grades.

### **Recommendation**

No recommendations are given as the mathematics CMA for all grades was in alignment for categorical concurrence.

### Depth-of-Knowledge Consistency

#### **Conclusion**

As stated earlier in this report, depth-of-knowledge consistency between standards and test items indicates alignment if what is elicited from students on the test is at least as demanding cognitively as what students are expected to know and do as stated in the standards. Therefore, for consistency to exist between the test items and the standards, each item should be coded at or above the same depth-of-knowledge level as the standard or one level above the depth-of-knowledge level of the standard. According to the Webb model, as a measure of consistency, at least 50% of the items must be at or above the depth-of-knowledge level of the corresponding standard.

The results indicate that the acceptable depth-of-knowledge consistency of 50% was met for most standards across all grades except for grade 6 Number Sense and Measurement and Geometry, which were not as strong. It may be beneficial to look at future assessments for grade 6 Number Sense to ensure that the items meet the cognitive demand of the standards. Grades 3–6 Mathematical Reasoning and the Geometry reporting cluster Logic and Geometric Proofs may need improvement also. One possible remedy for Logic and Geometric Proofs is that future development be focused on depth-of-knowledge Level 3 items, especially for standards that the committee determined to be depth-of-knowledge Level 3 (i.e., 2.0, 3.0, 4.0, 5.0, and 7.0). Grade 7 Mathematical Reasoning met the criterion but was not as strong.

While the grades 3–6 Mathematical Reasoning results show that this reporting cluster may need improvement, it should be noted that Mathematical Reasoning is embedded in all of the items throughout the test. This means that items were not specifically written to the standards within this reporting cluster but were written to standards in other reporting clusters. As indicated in the Alignment Study Process section of this report, each item was aligned to a primary and, if applicable, a secondary standard. In addition, for grades 3–7, mathematics items were also assigned a Mathematical Reasoning standard. The primary standard alignment for each item was the standard each reviewer determined the item was written to. These standards vary in depth-of-knowledge level but on average are at a lower depth-of-knowledge level than the Mathematical Reasoning standard, resulting in a lower depth-of-knowledge consistency rating.

**Recommendation**

The items were not specifically written to the Mathematical Reasoning standards and by design the Mathematical Reasoning standard is an embedded standard, so no additional recommendations are suggested.

Range-of-Knowledge Correspondence**Conclusion**

According to Webb’s model, for reporting clusters and the items on a given test to be aligned, the breadth of knowledge required on both should be comparable. This is called range-of-knowledge correspondence. The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a reporting cluster is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the items on the test. For an acceptable range-of-knowledge correspondence, according to Webb’s model, at least 50% of the standards within a reporting cluster should have at least one item aligned to them. The results indicate that the range-of-knowledge criterion of 50% was met for all grades across all reporting clusters.

**Recommendation**

No recommendations are given as the CMA mathematics for all grades was in alignment for range-of-knowledge correspondence.

Balance of Representation**Conclusion**

As stated earlier in this report, balance of representation is the degree to which one standard in a reporting cluster is given more emphasis on the test than another standard within the same reporting cluster. An index is used to judge the distribution of the test items. The results indicate that the balance of representation was met for all grades across all reporting clusters with the exception of the Mathematical Reasoning cluster for grades 3–6. As stated earlier, the Mathematical Reasoning reporting cluster is an embedded cluster that is assessed on each item in addition to the primary and possibly secondary standard that the item is aligned to.

**Recommendation**

While it is noted that the Mathematical Reasoning reporting cluster appears not to meet the balance-of-representation criterion, no changes are suggested because the test design includes this standard as an embedded standard.

## ESEA Requirements

Using Dr. Norman Webb’s criteria of categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation along with qualitative and quantitative results, it was determined that the mathematics California Modified Assessments are aligned and meet the following Elementary and Secondary Education Act (ESEA) requirements.

1. The alignment of the California Modified Assessments (CMA) with the content standards and how the cognitive load differs from the California Standards Test (CST).

As previously discussed in the Study Design, the mathematics CMAs are aligned with the mathematics content standards. The Webb criterion of categorical concurrence indicates alignment between each reporting cluster and the test if both address the same content categories. The categorical concurrence criterion provides a general indication of alignment if the reporting cluster and the test incorporate the same content. The reviewers found that for all grades and reporting clusters of mathematics there was alignment to the standards as indicated in Table 20 by “Yes.” (See Appendix C.)

The cognitive load for the CMA differs from that of the CST. As indicated in the table below, the cognitive load or the depth-of-knowledge consensus of the CMA is at, below, or above that of the CST. Taking into consideration the population of students being assessed by each assessment and the fact that each was reviewed by a different group of participants, the depth-of-knowledge level of the standards could be rated differently.

**Table 22: Comparison of the Depth-of-Knowledge Consensus of the CMA Standards to the CST Standards**

<b>Grade</b>	<b>Number of CMA Standards Below the CST</b>	<b>Number of CMA Standards At the CST</b>	<b>Number of CMA Standards Above the CST</b>
<b>3</b>	17	22	4
<b>4</b>	23	22	3
<b>5</b>	22	11	3
<b>6</b>	21	16	0
<b>7</b>	27	22	2
<b>Algebra I</b>	7	12	3
<b>Geometry</b>	9	11	2

2. The state’s assessment system involves multiple measures (measures that assess high-order thinking skills and understanding of challenging content).

The mathematics depth-of-knowledge consensus in Table 21 shows the percentage of the standards that are depth-of-knowledge levels 1, 2, and 3. This information indicates that the mathematics assessments for grades 4, Algebra I, and Geometry assess a range of high-order

thinking skills and understanding of challenging content. Grades 3, 5, 6, and 7 have standards that were rated at depth-of-knowledge Level 1 and Level 2, and not Level 3. (See Appendix B.)

Additionally, Table 20 shows depth-of knowledge consistency indicating that the items on the assessments measure the reporting clusters at or above the depth-of-knowledge levels for the grades 3–6 Mathematical Reasoning, Grade 6 Number Sense and Measurement and Geometry, and Geometry Logic and Geometric Proofs reporting clusters. This result indicates that the items measure a range of high-order thinking skills and understanding of challenging content for most of the items, but some of the items in grades 3–6 Mathematical Reasoning, Grade 6 Number Sense and Measurement and Geometry, and Geometry Logic and Geometric Proofs reporting clusters are below the depth-of-knowledge levels of the standard. (See Appendix C.)

3. The CMA measures the knowledge and skills described in its academic content standards and not knowledge, skills, or other characteristics that are not specified in the academic content standards or grade-level expectations.

The range-of-knowledge correspondence indicates whether there is at least one item aligned to at least 50% of the standards within a reporting cluster. This criterion gives an indication of whether the breadth of the content within each reporting cluster is being assessed and whether students are being asked to show a wide range of what they are expected to know and be able to do. The range-of knowledge results for grades 3–7, Algebra I and Geometry indicate that there is an acceptable range of items across the mathematics standards and that the mathematics CMAs measure the breadth of knowledge in the academic content standards. Reviewers were able to align items to the grade level standards which indicates that the items were testing the knowledge and skills specified in its academic content standards and not knowledge and skills not specified in its academic content standards. (See Appendix C.)

4. The CMA items are tapping the intended cognitive processes and the items and tasks are at the appropriate grade level.

Since Webb’s criterion of depth-of-knowledge was consistently met it indicates that reviewers were assigning the depth of knowledge to the items that were the intended cognitive demand of the standards. However, in grades 3–6 Mathematical Reasoning, Grade 6 Number Sense and Measurement and Geometry, and Geometry Logic and Geometric Proofs, items were assigned a depth of knowledge lower than that of the standard. Reviewers aligned the items to the content standards for each grade without difficulty. The reliability among reviewers was good, indicating reviewer consistency in assigning the depth-of-knowledge levels. (See Appendix F.)

5. The CMA and reporting structures are consistent with the subdomain structures of its academic content standards.

When the average number of reviewers’ hits is compared to the CMA blueprints the results showed that Webb’s criterion of balance of representation for the reporting clusters was being met. As shown in the following tables, the average number of hits equals, or almost equals, the intended number of items on the CMA blueprints for mathematics grades 3–7,

Algebra I, and Geometry. This finding may be a result of reviewers sometimes aligning the items to a primary and/or secondary standard, where applicable.

**Table 23: Comparison of Grades 3 and 4 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 3</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 4</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Number Sense</b>	24	27.13	<b>Number Sense</b>	23	26.75
<b>Algebra and Data Analysis</b>	13	14.75	<b>Algebra and Data Analysis</b>	15	18.38
<b>Measurement and Geometry</b>	11	10.38	<b>Measurement and Geometry</b>	10	10.88

**Table 24: Comparison of Grades 5 and 6 Blueprints to the Average Number of Hits for Each Grade**

<b>Grade 5</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Grade 6</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Number Sense</b>	21	21.13	<b>Number Sense</b>	21	24.63
<b>Algebra and Data Analysis</b>	17	20.88	<b>Algebra and Data Analysis</b>	25	24.25
<b>Measurement and Geometry</b>	10	10.13	<b>Measurement and Geometry</b>	8	8.13

**Table 25: Comparison of the Grade 7 Blueprint to the Average Number of Hits for Grade 7**

<b>Grade 7</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Number Sense</b>	18	22.13
<b>Algebra and Data Analysis</b>	25	24.75
<b>Measurement and Geometry</b>	11	12

**Table 26: Comparison of Algebra I and Geometry Blueprints to the Average Number of Hits for Each Course**

<b>Algebra I</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>	<b>Geometry</b>	<b>CMA Blueprint</b>	<b>Average Hits</b>
<b>Number Properties, Operations, and Linear Equations</b>	15	16.5	<b>Logic and Geometric Proofs</b>	18	24.13
<b>Graphing and Systems of Linear Equations</b>	14	15	<b>Volume and Area Formulas</b>	11	13.88
<b>Quadratics and Polynomials</b>	19	20.88	<b>Angle Relationships, Constructions, and Lines</b>	13	17.63
<b>Functions and Rational Expressions</b>	12	12	<b>Trigonometry</b>	12	13.25

Webb’s balance-of-representation index was also calculated for mathematics grades 3–7, Algebra I, and Geometry, which is an indication of whether one standard is receiving more emphasis on the test than another standard within a reporting cluster. In this way it can be determined by reporting cluster if there are any areas that may be overemphasized and possibly deviate from the intended blueprint. The balance of representation for mathematics grades 3–5 and 7 was “Yes” for all the reporting clusters except Mathematical Reasoning, which was deemed “Weaker” for grades 3–5, and “Yes\*” for grade 6. This indicates acceptable alignment of the items across the reporting clusters but is not as strong for the reporting clusters with “Yes\*” and “Weaker.” It should also be noted that Mathematical Reasoning is not part of the test design and is embedded in the items. (See Appendix C.)

### **Reliability among Reviewers**

The intraclass correlation is based on the mean squares from the analysis of variance of a two-way random effects model, reviewers crossed with items (Shrout and Fleiss, 1979) as described in Appendix F. The overall intraclass correlation in the reviewers’ assignment of depth-of-knowledge levels to items was reasonably high for mathematics because the correlations for all grades are .70 or above. If there is a low variance in the reviewers’ coding in assigning depth-of-knowledge levels to items, the intraclass correlation has greater error. Table 27 provides a summary of the intraclass correlation.

**Table 27: Summary of Reliability**

<b>Grade</b>	<b>Intraclass Correlation</b>
<b>3</b>	.82
<b>4</b>	.81
<b>5</b>	.77
<b>6</b>	.72
<b>7</b>	.71
<b>Algebra I</b>	.79
<b>Geometry</b>	.75

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# **Appendix A**

## **Depth-of-Knowledge Levels**

# English Language Arts Depth-of-Knowledge Levels

## Reading Depth-of-Knowledge Levels

In English language arts, four DOK levels were used to judge both reading and writing objectives and assessment tasks. The reading levels are based on Valencia and Wixson (2000, pp. 909-935). The writing levels were developed by Marshá Horton, Sharon O’Neal, and Phoebe Winter.

*Reading Level 1.* Level 1 requires students to receive or recite facts or to use simple skills or abilities. Oral reading that does not include analysis of the text, as well as basic comprehension of a text, is included. Items 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. Some examples that represent, but do not constitute all of, Level 1 performance are:

- Support ideas by 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.

*Reading Level 2.* Level 2 includes 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 of inference is required. Some important concepts are covered, but not in a complex way. Standards and items at this level may include words such as summarize, interpret, infer, classify, organize, collect, display, compare, and determine whether fact or opinion. Literal main ideas are stressed. A Level 2 assessment item may require students to apply skills and concepts that are covered in Level 1. However, items require closer understanding of text, possibly through the item’s paraphrasing of both the question and the answer. Some examples that represent, but do not constitute all of, Level 2 performance are:

- 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.

*Reading Level 3.* Deep knowledge becomes a greater focus at Level 3. 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. Standards and items at Level 3 involve reasoning and planning. Students must be able to support their thinking. Items may involve abstract theme identification, inference across an entire passage, or students’ application of prior knowledge. Items may also involve more superficial connections between texts. Some examples that represent, but do not constitute all of, Level 3 performance are:

- 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.

*Reading Level 4.* Higher-order thinking is central and knowledge is deep at Level 4. The standard or assessment item at this level will probably be an extended activity, with extended time provided for completing it. 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. Students take information from at least one passage of a text 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. Some examples that represent, but do not constitute all of, Level 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.

### **Writing Depth-of-Knowledge Levels**

*Writing Level 1.* Level 1 requires the student to write or recite simple facts. The focus of this writing or recitation is not on complex synthesis or analysis, but on basic ideas. The students are asked to list ideas or words, as in a brainstorming activity, prior to written composition; are engaged in a simple spelling or vocabulary assessment; or are asked to write simple sentences. Students are expected to write, speak, and edit using the conventions of Standard English. This includes using appropriate grammar, punctuation, capitalization, and spelling. Students demonstrate a basic understanding and appropriate use of such reference materials as a dictionary, thesaurus, or Web site. Some examples that represent, but do not constitute all of, Level 1 performance are:

- Use punctuation marks correctly.
- Identify Standard English grammatical structures, including the correct use of verb tenses.

*Writing Level 2.* Level 2 requires some mental processing. At this level, students are engaged in first-draft writing or brief extemporaneous speaking for a limited number of purposes and audiences. Students are expected to begin connecting ideas, using a simple organizational structure. For example, students may be engaged in note-taking, outlining, or simple summaries. Text may be limited to one paragraph. Some examples that represent, but do not constitute all of, Level 2 performance are:

- Construct or edit compound or complex sentences, with attention to correct use of phrases and clauses.
- Use simple organizational strategies to structure written work.
- Write summaries that contain the main idea of the reading selection and pertinent details.

*Writing Level 3.* Level 3 requires some higher-level mental processing. Students are engaged in developing compositions that include multiple paragraphs. These compositions may include complex sentence structure and may demonstrate some synthesis and analysis. Students show awareness of their audience and purpose through focus, organization, and the use of appropriate compositional elements. The use of appropriate compositional elements includes such things as

addressing chronological order in a narrative, or including supporting facts and details in an informational report. At this stage, students are engaged in editing and revising to improve the quality of the composition. Some examples that represent, but do not constitute all of, Level 3 performance are:

- Support ideas with details and examples.
- Use voice appropriate to the purpose and audience.
- Edit writing to produce a logical progression of ideas.

*Writing Level 4.* Higher-level thinking is central to Level 4. The standard at this level is a multi-paragraph composition that demonstrates the ability to synthesize and analyze complex ideas or themes. There is evidence of a deep awareness of purpose and audience. For example, informational papers include hypotheses and supporting evidence. Students are expected to create compositions that demonstrate a distinct voice and that stimulate the reader or listener to consider new perspectives on the addressed ideas and themes. An example that represents, but does not constitute all of, Level 4 performance is:

- Write an analysis of two selections, identifying the common theme and generating a purpose that is appropriate for both.

## Science Depth-of-Knowledge Levels

*Level 1 (Recall and Reproduction)* requires the recall of information, such as a fact, definition, term, or a simple procedure, as well as performance of a simple science process or procedure. Level 1 only requires students to demonstrate a rote response, use a well-known formula, follow a set procedure (like a recipe), or perform a clearly defined series of steps. A “simple” procedure is well defined and typically involves only one step. Verbs such as “identify,” “recall,” “recognize,” “use,” “calculate,” and “measure” generally represent cognitive work at the recall and reproduction level. Simple word problems that can be directly translated into and solved by a formula are considered Level 1. Verbs such as “describe” and “explain” could be classified at different DOK levels, depending on the complexity of what is to be described and explained.

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.” In other words, if the knowledge necessary to answer an item automatically provides the answer to it, then the item is at Level 1. If the knowledge needed to answer the item is not automatically provided in the stem, the item is at least at Level 2. Some examples that represent, but do not constitute all of, Level 1 performance are:

- Recall or recognize a fact, term, or property.
- Represent in words or diagrams a scientific concept or relationship.
- Provide or recognize a standard scientific representation for simple phenomenon.
- Perform a routine procedure, such as measuring length.

*Level 2 (Skills and Concepts)* includes the engagement of some mental processing beyond recalling or reproducing a response. The content knowledge or process involved is **more complex** than in Level 1. Items require students to make some decisions as to how to approach the question or problem. Key words that generally distinguish a Level 2 item include “classify,” “organize,” “estimate,” “make observations,” “collect and display data,” and “compare data.” These actions imply **more than one step**. For example, to compare data requires first identifying characteristics of the objects or phenomena and then grouping or ordering the objects. Level 2 activities include making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts. Some action verbs, such as “explain,” “describe,” or “interpret,” could be classified at different DOK levels, depending on the complexity of the action. For example, interpreting information from a simple graph, and requiring reading information from the graph, is a Level 2. An item that requires interpretation from a complex graph, such as making decisions regarding features of the graph that need to be considered and how information from the graph can be aggregated, is at Level 3. Some examples that represent, but do not constitute all of, Level 2 performance, are:

- Specify and explain the relationship between facts, terms, properties, or variables.
- Describe and explain examples and non-examples of science concepts.
- Select a procedure according to specified criteria and perform it.
- Formulate a routine problem, given data and conditions.
- Organize, represent, and interpret data.

*Level 3 (Strategic Thinking)* requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. The cognitive demands at Level 3 are complex and

abstract. The complexity does not result only from the fact that there could be multiple answers, a possibility for both Levels 1 and 2, but because the multi-step task requires more demanding reasoning. In most instances, requiring students to explain their thinking is at Level 3; requiring a very simple explanation or a word or two should be at Level 2. An activity that has more than one possible answer and requires students to justify the response they give would most likely be a Level 3. Experimental designs in Level 3 typically involve more than one dependent variable. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve non-routine problems. Some examples that represent, but do not constitute all of Level 3 performance, are:

- Identify research questions and design investigations for a scientific problem.
- Solve non-routine problems.
- Develop a scientific model for a complex situation.
- Form conclusions from experimental data.

*Level 4 (Extended Thinking)* involves high cognitive demands and complexity. Students are required to make several connections—relate ideas within the content area or among content areas—and have to select or devise one approach among many alternatives to solve the problem. Many on-demand assessment instruments will not include any assessment activities that could be classified as Level 4. However, standards, goals, and objectives can be stated in such a way as to expect students to perform extended thinking. “Develop generalizations of the results obtained and the strategies used and apply them to new problem situations,” is an example of a grade 8 objective that is a Level 4. Many, but not all, performance assessments and open-ended assessment activities requiring significant thought will be Level 4.

Level 4 requires complex reasoning, experimental design and planning, and probably will require an extended period of time either for the science investigation required by an objective, or for carrying out the multiple steps of an assessment item. However, 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, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2 activity. However, if the student conducts a river study that requires taking into

## Mathematics Depth-of-Knowledge Levels

*Level 1 (Recall)* includes the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in mathematics, a one-step, well-defined, and straight algorithmic procedure should be included at this lowest level. Other key words that signify Level 1 include “identify,” “recall,” “recognize,” “use,” and “measure.” Verbs such as “describe” and “explain” could be classified at different levels, depending on what is to be described and explained.

*Level 2 (Skill/Concept)* includes the engagement of some mental processing beyond an habitual response. A Level 2 assessment item requires students to make some decisions as to how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe), or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include “classify,” “organize,” “estimate,” “make observations,” “collect and display data,” and “compare data.” These actions imply more than one step. For example, to compare data requires first identifying characteristics of objects or phenomena and then grouping or ordering the objects. Some action verbs, such as “explain,” “describe,” or “interpret,” could be classified at different levels depending on the object of the action. For example, interpreting information from a simple graph, or reading information from the graph, also are at Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is at Level 3. Level 2 activities are not limited only to number skills, but may involve visualization skills and probability skills. Other Level 2 activities include noticing or describing non-trivial patterns; explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

*Level 3 (Strategic Thinking)* requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is at Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3.

Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and deciding which concepts to apply in order to solve a complex problem.

*Level 4 (Extended Thinking)* requires complex reasoning, planning, developing, and thinking, most likely over an extended period of time. 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, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2. However, if the student is to conduct a river study that requires taking

into consideration a number of variables, this would be a Level 4. At Level 4, the cognitive demands of the task should be high and the work should be very complex. Students should be required to make several connections—relate ideas *within* the content area or *among* content areas—and have to select one approach among many alternatives on how the situation should be solved, in order to be at this highest level. Level 4 activities include designing *and* conducting experiments and projects; developing and proving conjectures; making connections between a finding and related concepts and phenomena; combining and synthesizing ideas into new concepts; and critiquing experimental designs.

## **Appendix B**

### **Depth-of-Knowledge Consensus Values**

## English Language Arts Depth-of-Knowledge Consensus

**Table B1:**  
**Grade 3 English Language Arts DOK Consensus**

Standards	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students understand the basic features of reading. They select letter patterns and know how to translate them into spoken language by using phonics, syllabication, and word parts. They apply this knowledge to achieve fluent oral and silent reading.	
R1.1 <b>Decoding and Word Recognition:</b> know and use complex word families when reading (e.g., -ight) to decode unfamiliar words	1
R1.2 <b>Decoding and Word Recognition:</b> decode regular multisyllabic words	1
R1.4 <b>Vocabulary and Concept Development:</b> use knowledge of antonyms, synonyms, homophones, and homographs to determine the meanings of words	2
R1.5 <b>Vocabulary and Concept Development:</b> demonstrate knowledge of levels of specificity among grade-appropriate words and explain the importance of these relations (e.g., dog/mammal/animal/living things)	2
R1.6 <b>Vocabulary and Concept Development:</b> use sentence and word context to find the meaning of unknown words	2
R1.7 <b>Vocabulary and Concept Development:</b> use a dictionary to learn the meaning and other features of unknown words	1
R1.8 <b>Vocabulary and Concept Development:</b> use knowledge of prefixes (e.g., un-, re-, pre-, bi-, mis-, dis-) and suffixes (e.g., -er, -est, -ful) to determine the meaning of words	2

**Grade 3 English Language Arts (Continued)**

Standards	Consensus
<b>Reading for Understanding</b>	
<p><b>R2.0 READING COMPREHENSION: Students read and understand grade-level-appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, by grade four, students read one-half million words annually, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade three, students make substantial progress toward this goal.</b></p>	
<p><b>R2.1 Structural Features of Informational Materials:</b> use titles, tables of contents, chapter headings, glossaries, and indexes to locate information in text</p>	1
<p><b>R2.2 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> ask questions and support answers by connecting prior knowledge with literal information found in, and inferred from, the text</p>	3
<p><b>R2.3 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> demonstrate comprehension by identifying answers in the text</p>	1
<p><b>R2.4 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> recall major points in the text and make and modify predictions about forthcoming information</p>	2
<p><b>R2.5 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> distinguish between main idea and supporting details in expository text</p>	2
<p><b>R2.6 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> extract appropriate and significant information from the text, including problems and solutions</p>	2
<p><b>R2.7 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> follow simple multiple-step written instructions (e.g., how to assemble a product or play a board game)</p>	2
<p><b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to a wide variety of significant works of children’s literature. They distinguish between the structural features of text and the literary terms or elements (i.e., theme, plot, setting, characters). The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b></p>	
<p><b>R3.1 Structural Features of Literature:</b> distinguish common forms of literature (e.g., poetry, drama, fiction, non-fiction)</p>	1

### Grade 3 English Language Arts (Continued)

Standards	Consensus
<b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> comprehend basic plots of classic fairy tales, myths, folktales, legends, and fables from around the world	2
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> determine what characters are like by what they say or do and by how the author or illustrator portrays them	2
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> determine the underlying theme or author’s message in fictional and non-fiction text	3
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> recognize the similarities of sounds in words and rhythmical patterns (e.g., alliteration, onomatopoeia) in a selection	1
<b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify the speaker or narrator in a selection	1
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to this grade level.</b>	
<b>W1.1 Sentence Structure:</b> understand and be able to use complete and correct declarative, interrogative, imperative, and exclamatory sentences in writing and speaking	1
<b>W1.2 Grammar:</b> identify subjects and verbs that are in agreement and identify and use pronouns, adjectives, compound words, and articles correctly in writing and speaking	1
<b>W1.3 Grammar:</b> identify and use past, present, and future verb tenses properly in writing and speaking	1
<b>W1.4 Grammar:</b> identify and use subjects and verbs correctly in speaking and writing simple sentences	1
<b>W1.5 Punctuation:</b> punctuate dates, city and state, and titles of books correctly	1
<b>W1.6 Punctuation:</b> use commas in dates, locations, and addresses and for items in a series	1
<b>W1.7 Capitalization:</b> capitalize geographical names, holidays, historical periods, and special events correctly	1
<b>W1.8 Spelling:</b> spell correctly one-syllable words that have blends, contractions, compounds, orthographic patterns (e.g., qu, consonant doubling, changing the ending of a word from y to ies when forming the plural), and common homophones (e.g., hair-hare)	1
<b>W1.9 Spelling:</b> arrange words in alphabetical order	1

**Grade 3 English Language Arts (Continued)**

Standards	Consensus
<p><b>WS1.0 WRITING STRATEGIES:</b> Students write clear and coherent sentences and paragraphs that develop a central idea. Their writing shows they consider the audience and purpose. Students progress through the stages of the writing process (e.g., pre-writing, drafting, revising, editing successive versions).</p>	
<p><b>WS1.1 Organization and Focus:</b> create a single paragraph that</p>	
<p>WS1.1.1 develops a topic sentence</p>	2
<p>WS1.1.2 includes simple supporting facts and details</p>	2
<p><b>WS1.3 Research &amp; Technology:</b> understand the structure and organization of various reference materials (e.g., dictionary, thesaurus, atlas, encyclopedia)</p>	1
<p><b>WS1.4 Evaluation and Revision:</b> revise drafts to improve the coherence and logical progression of ideas by using an established rubric</p>	3

**Table B2:  
Grade 4 English Language Arts DOK Consensus**

Standards	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students understand the basic features of reading. They select letter patterns and know how to translate them into spoken language by using phonics, syllabication, and word parts. They apply this knowledge to achieve fluent oral and silent reading.	
<b>R1.2 Vocabulary and Concept Development:</b> apply knowledge of word origins, derivations, synonyms, antonyms, and idioms to determine the meaning of words and phrases	2
<b>R1.3 Vocabulary and Concept Development:</b> use knowledge of root words to determine the meaning of unknown words within a passage	2
<b>R1.4 Vocabulary and Concept Development:</b> know common roots and affixes derived from Greek and Latin and use this knowledge to analyze the meaning of complex words (e.g., international)	2
<b>R1.5 Vocabulary and Concept Development:</b> use a thesaurus to determine related words and concepts	1
<b>R1.6 Vocabulary and Concept Development:</b> distinguish and interpret multiple meaning words	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION:</b> Students read and understand grade-level-appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, students read one-half million words annually, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information).	
<b>R2.1 Structural Features of Informational Materials:</b> identify structural patterns found in informational text (e.g., compare and contrast, cause and effect, sequential or chronological order, proposition and support) to strengthen comprehension	2
<b>R2.3 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> make and confirm predictions about text by using prior knowledge and ideas presented in the text itself, including illustrations, titles, topic sentences, important words, and foreshadowing clues	2

## Grade 4 English Language Arts (Continued)

Standards	Consensus
<b>R2.4 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> evaluate new information and hypotheses by testing them against known information and ideas	3
<b>R2.5 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> compare and contrast information on the same topic after reading several passages or articles	3
<b>R2.6 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> distinguish between cause and effect and between fact and opinion in expository text	2
<b>R2.7 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> follow multiple-step instructions in a basic technical manual (e.g., how to use computer commands or video games)	2
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to a wide variety of significant works of children’s literature. They distinguish between the structural features of the text and the literary terms or elements (e.g., theme, plot, setting, characters). The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b>	
<b>R3.1 Structural Features of Literature:</b> describe the structural differences of various imaginative forms of literature, including fantasies, fables, myths, legends, and fairy tales	2
<b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify the main events of the plot, their causes, and the influence of each event on future actions	2
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> use knowledge of the situation and setting and of a character’s traits and motivations to determine the causes for that character’s actions	3
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> compare and contrast tales from different cultures by tracing the exploits of one character type and develop theories to account for similar tales in diverse cultures (e.g., trickster tales)	3
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> define figurative language (e.g., simile, metaphor, hyperbole, personification) and identify its use in literary works	1
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to this grade level.</b>	
<b>W1.1 Sentence Structure:</b> use simple and compound sentences in writing and speaking	2
<b>W1.2 Sentence Structure:</b> combine short, related sentences with appositives, participial phrases, adjectives, adverbs, and prepositional phrases	2

### Grade 4 English Language Arts (Continued)

Standards	Consensus
W1.3 <b>Grammar:</b> identify and use regular and irregular verbs, adverbs, prepositions, and coordinating conjunctions in writing and speaking	1
W1.4 <b>Punctuation:</b> use parentheses, commas in direct quotations, apostrophes in the possessive case of nouns and in contractions	1
W1.5 <b>Punctuation:</b> use underlining, quotations marks, or italics to identify titles of documents	1
W1.6 <b>Capitalization:</b> capitalize names of magazines, newspapers, works of art, musical compositions, organizations, and the first word in quotations when appropriate	1
W1.7 <b>Spelling:</b> spell correctly roots, inflections, suffixes and prefixes, and syllable constructions	1
<b>WS1.0 WRITING STRATEGIES: Students write clear, coherent sentences and paragraphs that develop a central idea. Their writing shows they consider the audience and purpose. Students progress through the stages of the writing process (i.e., pre-writing, drafting, revising, editing successive versions).</b>	
WS1.1 <b>Organization and Focus:</b> select a focus, an organizational structure, and a point of view based upon purpose, audience, length, and format requirements	3
WS1.2 <b>Organization and Focus:</b> create multiple-paragraph compositions that	
WS1.2.2 establish and support a central idea with a topic sentence at or near the beginning of the first paragraph	2
WS1.2.3 include supporting paragraphs with simple facts, details, and explanations	3
WS1.2.4 conclude with a paragraph that summarizes the points	3
WS1.6 <b>Research and Technology:</b> locate information in reference texts by using organizational features (e.g., prefaces, appendices)	1
WS1.7 <b>Research and Technology:</b> use various reference materials (e.g., dictionary, thesaurus, card catalog, encyclopedia, on-line information) as an aid to writing	1
WS1.8 <b>Research and Technology:</b> understand the organization of almanacs, newspapers, and periodicals and how to use those print materials	1
WS1.10 <b>Evaluation and Revision:</b> edit and revise selected drafts to improve coherence and progression by adding, deleting, consolidating, and rearranging text	3

**Table B3:  
Grade 5 English Language Arts DOK Consensus**

Standards	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students use their knowledge of word origins and word relationships, as well as historical and literary context clues, to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level appropriate words.	
R1.2 <b>Vocabulary and Concept Development:</b> use word origins to determine the meaning of unknown words	1
R1.3 <b>Vocabulary and Concept Development:</b> understand and explain frequently used synonyms, antonyms and homographs	1
R1.4 <b>Vocabulary and Concept Development:</b> know abstract, derived roots and affixes from Greek and Latin, and use this knowledge to analyze the meaning of complex words (e.g., controversial)	2
R1.5 <b>Vocabulary and Concept Development:</b> understand and explain the figurative and metaphorical use of words in context	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade eight, students read one million words annually on their own, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade five, students make progress toward this goal.	
R2.1 <b>Structural Features of Informational Materials:</b> understand how text features (e.g., format, graphics, sequence, diagrams, illustrations, charts, maps) make information accessible and usable	2
R2.2 <b>Structural Features of Informational Materials:</b> analyze text that is organized in sequential or chronological order	2
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> discern main ideas and concepts presented in texts, identifying and assessing evidence that supports those ideas	2
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> draw inferences, conclusions, or generalizations about text and support them with textual evidence and prior knowledge	3
R2.5 <b>Expository Critique:</b> distinguish facts, supported inferences, and opinions in text	2

**Grade 5 English Language Arts (Continued)**

Standards	Consensus
<p><b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature. They begin to find ways to clarify the ideas and make connections between literary works. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b></p>	
<p><b>R3.1 Structural Features of Literature:</b> identify and analyze the characteristics of poetry, drama, fiction, and nonfiction and explain the appropriateness of the literary forms chosen by an author for a specific purpose</p>	3
<p><b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify the main problem or conflict of the plot and how it is resolved</p>	2
<p><b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> contrast the actions, motives (loyalty, selfishness, conscientiousness), and appearances of characters in a work of fiction and discuss the importance of the contrasts to the plot or theme</p>	3
<p><b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> understand that theme refers to the meaning or moral of a selection and recognize themes (whether implied or stated directly) in sample works</p>	3
<p><b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> describe the function and effect of common literary devices (e.g., imagery, metaphor, symbolism)</p>	2
<p><b>R3.6 Literary Criticism:</b> evaluate the meaning of archetypal patterns and symbols that are found in myth and tradition by using literature from different eras and cultures</p>	3
<p><b>R3.7 Literary Criticism:</b> evaluate the author’s use of various techniques (e.g., appeal of characters in a picture book, logic and credibility of plots and settings, use of figurative language) to influence readers’ perspectives</p>	3
<b>Language</b>	
<p><b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to this grade level.</b></p>	
<p><b>W1.1 Sentence Structure:</b> identify and correctly use prepositional phrases, appositives, and independent and dependent clauses; use transitions and conjunctions to connect ideas</p>	2
<p><b>W1.2 Grammar:</b> identify and correctly use verbs that are often misused (e.g., lie/lay, sit/set, rise/raise), modifiers, and pronouns</p>	1
<p><b>W1.3 Punctuation:</b> use a colon to separate hours and minutes and to introduce a list; use quotation marks around the exact words of speaker and titles of poems, songs, short stories, and so forth</p>	1
<p><b>W1.4 Capitalization:</b> use correct capitalization</p>	1

**Grade 5 English Language Arts (Continued)**

Standards	Consensus
W1.5 <b>Spelling:</b> spell roots, suffixes, prefixes, contractions, and syllable constructions correctly	1
<b>WS1.0 WRITING STRATEGIES: Students write clear, coherent, and focused essays. The writing exhibits the students' awareness of the audience and purpose. Essays contain formal introductions, supporting evidence, and conclusions. Students progress through the stages of the writing process as needed.</b>	
WS1.1 <b>Organization and Focus:</b> create multiple-paragraph narrative compositions	
WS1.1.1 establish and develop a situation or plot	2
WS1.1.2 describe the setting	2
WS1.1.3 present an ending	2
WS1.2 <b>Organization and Focus:</b> create multiple-paragraph expository compositions	
WS1.2.1 establish a topic, important ideas, or events in sequence or chronological order	3
WS1.2.2 provide details and transitional expressions that link one paragraph to another in a clear line of thought	3
WS1.2.3 offer a concluding paragraph that summarizes important ideas and details	3
WS1.3 <b>Research and Technology:</b> use organizational features of printed text (e.g., citations, end notes, bibliographic references) to locate relevant information	1
WS1.5 <b>Research and Technology:</b> use a thesaurus to identify alternative word choices and meanings	1
WS1.6 <b>Evaluation and Revision:</b> edit and revise manuscripts to improve the meaning and focus of writing by adding, deleting, consolidating, clarifying, and rearranging words and sentences	3

**Table B4:  
Grade 6 English Language Arts DOK Consensus**

Standard	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students use their knowledge of word origins and word relationships, as well as historical and literary context clues, to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.	
R1.2 <b>Vocabulary and Concept Development:</b> identify and interpret figurative language and words with multiple meanings	2
R1.3 <b>Vocabulary and Concept Development:</b> recognize the origins and meanings of frequently used foreign words in English and use these words accurately in speaking and writing	1
R1.4 <b>Vocabulary and Concept Development:</b> monitor expository text for unknown words or words with novel meanings by using word, sentence, and paragraph clues to determine meaning	2
R1.5 <b>Vocabulary and Concept Development:</b> understand and explain “shades of meaning” in related words (e.g., softly and quietly)	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade eight, students read one million words annually on their own, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade six, students continue to make progress toward this goal.	
R2.1 <b>Structural Features of Informational Materials:</b> identify the structural features of popular media (e.g., newspapers, magazines, online information) and use the features to obtain information	1
R2.2 <b>Structural Features of Informational Materials:</b> analyze text that uses the compare-and-contrast organizational pattern	2
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> connect and clarify main ideas by identifying their relationships to other sources and related topics	3
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> clarify an understanding of texts by creating outlines, logical notes, summaries, or reports	2

## Grade 6 English Language Arts (Continued)

Standard	Consensus
<b>R2.5 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> follow multiple-step instructions for preparing applications (e.g., for a public library card, bank savings account, sports club, league membership)	1
<b>R2.6 Expository Critique:</b> determine the adequacy and appropriateness of the evidence for an author’s conclusions	3
<b>R2.7 Expository Critique:</b> make reasonable assertions about a text through accurate, supporting citations	3
<b>R2.8 Expository Critique:</b> note instances of unsupported inferences, fallacious reasoning, persuasion, and propaganda in text	1
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They clarify the ideas and connect them to other literary works. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b>	
<b>R3.1 Structural Features of Literature:</b> identify the forms of fiction and describe the major characteristics of each form	1
<b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the effect of the qualities of the character (e.g., courage or cowardice, ambition or laziness) on the plot and the resolution of the conflict	3
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the influence of setting on the problem and its resolution	3
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> define how tone or meaning is conveyed in poetry through word choice, figurative language, sentence structure, line length, punctuation, rhythm, repetition, and rhyme	3
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify the speaker and recognize the difference between first- and third-person narration (e.g., autobiography compared with biography)	1
<b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify and analyze features of themes conveyed through characters, actions, and images	3
<b>R3.7 Narrative Analysis of Grade-Level-Appropriate Text:</b> explain the effects of common literary devices (e.g., symbolism, imagery, metaphor) in a variety of fictional and nonfictional texts	3
<b>R3.8 Literary Criticism:</b> critique the credibility of characterization and the degree to which a plot is contrived or realistic (e.g., compare use of fact and fantasy in historical fiction)	3

**Grade 6 English Language Arts (Continued)**

Standard	Consensus
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to this grade level.</b>	
<b>W1.1 Sentence Structure:</b> use simple, compound, and compound-complex sentences; use effective coordination and subordination of ideas to express complete thoughts	2
<b>W1.2 Grammar:</b> identify and properly use indefinite pronouns and present perfect, past perfect, and future perfect verb tenses; ensure that verbs agree with compound subjects	1
<b>W1.3 Punctuation:</b> use colons after the salutation in business letters, semi-colons to connect independent clauses, and commas when linking two clauses with a conjunction in compound sentences	1
<b>W1.4 Capitalization:</b> use correct capitalization	1
<b>W1.5 Spelling:</b> spell frequently misspelled words correctly (e.g., their, they're, there)	1
<b>WS1.0 WRITING STRATEGIES: Students write clear, coherent, and focused essays. The writing exhibits students' awareness of the audience and purpose. Essays contain formal introductions, supporting evidence, and conclusions. Students progress through the stages of the writing process as needed.</b>	
<b>WS1.1 Organization and Focus:</b> choose the form of writing (e.g., personal letter, letter to the editor, review, poem, report, narrative) that best suits the intended purpose	2
<b>WS1.2 Organization and Focus:</b> create multiple-paragraph expository compositions	
<b>WS1.2.2</b> develop the topic with supportive details and precise verbs, nouns, and adjectives to paint a visual image in the mind of the reader	3
<b>WS1.2.3</b> conclude with a detailed summary linked to the purpose of composition	3
<b>WS1.3 Organization and Focus:</b> use a variety of effective and coherent organizational patterns, including comparison and contrast; organization by categories; and arrangement of spatial order, order of importance, or climactic order	3
<b>WS1.4 Research and Technology:</b> use organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate information	1
<b>WS1.6 Evaluation and Revision:</b> revise writing to improve organization and consistency of ideas within and between paragraphs	3

**Table B5:  
Grade 7 English Language Arts DOK Consensus**

Standard	Consensus
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students use their knowledge of word origins and word relationships, as well as historical and literary context clues, to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.	
R1.1 <b>Vocabulary and Concept Development:</b> identify idioms, analogies, metaphors, and similes in prose and poetry	1
R1.2 <b>Vocabulary and Concept Development:</b> use knowledge of Greek, Latin, and Anglo-Saxon roots and affixes to understand content-area vocabulary	2
R1.3 <b>Vocabulary and Concept Development:</b> clarify word meanings through the use of definition, example, restatement, or contrast	2
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade eight, students read one million words annually on their own, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade seven, students make substantial progress toward this goal.	
R2.1 <b>Structural Features of Informational Materials:</b> understand and analyze the differences in structure and purpose between various categories of informational materials (e.g., textbooks, newspapers, instructional manuals, signs)	3
R2.2 <b>Structural Features of Informational Materials:</b> locate information by using a variety of consumer, workplace, and public documents	1
R2.3 <b>Structural Features of Informational Materials:</b> analyze text that uses cause-and-effect organizational pattern	2
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> identify and trace the development of an author’s argument, point of view, or perspective in text	3
R2.5 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> understand and explain the use of a simple mechanical device by following technical directions	2

## Grade 7 English Language Arts (Continued)

Standard	Consensus
R2.6 <b>Expository Critique:</b> assess the adequacy, accuracy, and appropriateness of the author’s evidence to support claims and assertions, noting instances of bias and stereotyping	3
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They clarify the ideas and connect them to other literary works. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b>	
R3.1 <b>Structural Features of Literature:</b> articulate the expressed purposes and characteristics of different forms of prose (e.g., short story, novel, novella, essay)	1
R3.2 <b>Narrative Analysis of Grade-Level-Appropriate Text:</b> identify events that advance the plot, and determine how each event explains past or present action(s) or foreshadows future action(s)	3
R3.3 <b>Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze characterization as delineated through a character’s thoughts, words, speech patterns, and actions; the narrator’s description; and the thoughts, words, and actions of other characters	3
R3.4 <b>Narrative Analysis of Grade-Level-Appropriate Text:</b> identify and analyze recurring themes across works (e.g., the value of bravery, loyalty, and friendship; the effects of loneliness)	3
R3.5 <b>Narrative Analysis of Grade-Level-Appropriate Text:</b> contrast points of view (e.g., first and third person, limited and omniscient, subjective and objective) in narrative text and explain how they affect the overall theme of the work	3
R3.6 <b>Literary Criticism:</b> analyze a range of responses to a literary work and determine the extent to which the literary elements in the work shaped those responses	3
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to the grade level.</b>	
W1.1 <b>Sentence Structure:</b> place modifiers properly, and use the active voice	2
W1.2 <b>Grammar:</b> identify and use infinitives and participles and make clear references between pronouns and antecedents	1
W1.3 <b>Grammar:</b> identify all parts of speech and types and structure of sentences	1
W1.4 <b>Grammar:</b> demonstrate the mechanics of writing (e.g., quotation marks, commas at end of dependent clauses) and appropriate English usage (e.g., pronoun reference)	1
W1.5 <b>Punctuation:</b> identify hyphens, dashes, brackets, and semi-colons and use them correctly	1

**Grade 7 English Language Arts (Continued)**

Standard	Consensus
W1.6 <b>Capitalization:</b> use correct capitalization	1
W1.7 <b>Spelling:</b> spell derivatives correctly by applying the spellings of bases and affixes	1
<b>WS1.0 WRITING STRATEGIES: Students write clear, coherent, and focused essays. The writing exhibits students' awareness of the audience and purpose. Essays contain formal introductions, supporting evidence, and conclusions. Students progress through the stages of the writing process as needed.</b>	
WS1.1 <b>Organization and Focus:</b> create an organizational structure that balances all aspects of the composition and uses effective transitions between sentences to unify important ideas	3
WS1.2 <b>Organization and Focus:</b> support all statements and claims with anecdotes, descriptions, facts and statistics, and specific examples	3
WS1.3 <b>Organization and Focus:</b> use strategies of note-taking, outlining, and summarizing to impose structure on composition drafts	2
WS1.4 <b>Research and Technology:</b> identify topics; ask and evaluate questions; and develop ideas leading to inquiry, investigation, and research	3
WS1.5 <b>Research and Technology:</b> give credit for both quoted and paraphrased information in a bibliography by using a consistent and sanctioned format and methodology for citations	1
WS1.7 <b>Evaluation and Revision:</b> revise writing to improve organization and word choice after checking the logic of the ideas and the precision of the vocabulary	3

**Table B6:  
Grade 8 English Language Arts DOK Consensus**

Standard	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students use their knowledge of word origins and word relationships, as well as historical and literary context clues, to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level appropriate words.	
R1.1 <b>Vocabulary and Concept Development:</b> analyze idioms, analogies, metaphors, and similes to infer the literal and figurative meanings of phrases	2
R1.2 <b>Vocabulary and Concept Development:</b> understand the most important points in the history of English language and use common word origins to determine the historical influences on English word meanings	2
R1.3 <b>Vocabulary and Concept Development:</b> use word meanings within the appropriate context and show ability to verify those meanings by definition, restatement, example, comparison, or contrast	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students. In addition, students read one million words annually on their own, including a good representation of narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information).	
R2.1 <b>Structural Features of Informational Materials:</b> compare and contrast the features and elements of consumer materials to gain meaning from documents (e.g., warranties, contracts, product information, instruction manuals)	2
R2.2 <b>Structural Features of Informational Materials:</b> analyze text that uses proposition and support patterns	2
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> find similarities and differences between texts in the treatment, scope, or organization of ideas	3
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> compare the original text to a summary to determine whether the summary accurately captures the main ideas, includes critical details, and conveys the underlying meaning	3

## Grade 8 English Language Arts (Continued)

Standard	Consensus
<b>R2.5 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> understand and explain the use of a complex mechanical device by following technical directions	2
<b>R2.6 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> use information from a variety of consumer, workplace, and public documents to explain a situation or decision and to solve a problem	3
<b>R2.7 Expository Critique:</b> evaluate the unity, coherence, logic, internal consistency, and structural patterns of text	3
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They clarify the ideas and connect them to other literary works. The selections in <i>Recommended Readings in Literature, Kindergarten Through Grade Eight</i> illustrate the quality and complexity of the materials to be read by students.</b>	
<b>R3.1 Structural Features of Literature:</b> determine and articulate the relationship among the purposes and characteristics of different forms of poetry (e.g., ballad, lyric, couplet, epic, elegy, ode, sonnet)	3
<b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> evaluate the structural elements of the plot (e.g., subplots, parallel episodes, climax), the plot's development, and the way in which conflicts are (or are not) addressed and resolved	3
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> compare and contrast motivations and reactions of literary characters from different historical eras confronting similar situations or conflicts	3
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the relevance of the setting (e.g., place, time, customs) to the mood, tone, and meaning of the text	3
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify and analyze recurring themes (e.g., good versus evil) across traditional and contemporary works	4
<b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify significant literary devices (e.g., metaphor, symbolism, dialect, irony) that define a writer's style and use those elements to interpret the work	3
<b>R3.7 Literary Criticism:</b> analyze a work of literature, showing how it reflects the heritage, traditions, attitudes, and beliefs of its author (Biographical Approach)	4

**Grade 8 English Language Arts (Continued)**

Standard	Consensus
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions appropriate to this grade level.</b>	
<b>W1.1 Sentence Structure:</b> use correct and varied sentence types and sentence openings to present a lively and effective personal style	2
<b>W1.2 Sentence Structure:</b> identify and use parallelism, including similar grammatical forms, in all written discourse to present items in a series and items juxtaposed for emphasis	2
<b>W1.3 Sentence Structure:</b> use subordination, coordination, apposition, and other devices to indicate clearly the relationship between ideas	2
<b>W1.4 Grammar:</b> edit written manuscripts to ensure that correct grammar is used	3
<b>W1.5 Punctuation and Capitalization:</b> use correct punctuation and capitalization	1
<b>W1.6 Spelling:</b> use correct spelling conventions	1
<b>WS1.0 WRITING STRATEGIES: Students write clear, coherent, and focused essays. The writing exhibits students' awareness of audience and purpose. Essays contain formal introductions, supporting evidence, and conclusions. Students progress through the stages of the writing process as needed.</b>	
<b>WS1.1 Organization and Focus:</b> create compositions that establish a controlling impression, have a coherent thesis, and end with a clear and well-supported conclusion	3
<b>WS1.2 Organization and Focus:</b> establish coherence within and among paragraphs through effective transitions, parallel structures, and similar writing techniques	3
<b>WS1.3 Organization and Focus:</b> support theses or conclusions with analogies, paraphrases, quotations, opinions from authorities, comparisons, and similar devices	3
<b>WS1.6 Evaluation and Revision:</b> revise writing for word choice; appropriate organization; consistent point of view; and transitions between paragraphs, passages, and ideas	3

**Table B7:  
Grade 9 English Language Arts DOK Consensus**

Standard	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students apply their knowledge of word origins to determine the meaning of new words encountered in reading materials and use those words accurately.	
R1.1 <b>Vocabulary and Concept Development:</b> identify and use the literal and figurative meanings of words and understand word derivations	1
R1.2 <b>Vocabulary and Concept Development:</b> distinguish between the denotative and connotative meanings of words and interpret the connotative power of words	2
R1.3 <b>Vocabulary and Concept Development:</b> identify Greek, Roman, and Norse mythology and use the knowledge to understand the origin and meaning of new words (e.g., the word “narcissistic” drawn from the myth of Narcissus and Echo)	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They analyze the organizational patterns, arguments, and positions advanced. The selections in <i>Recommended Readings in Literature, Grades Nine Through Twelve (1990)</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade twelve, students read two million words annually on their own, including a wide variety of classic and contemporary literature, magazines, newspapers, online information. In grades nine and ten, students make substantial progress toward this goal.	
R2.1 <b>Structural Features of Informational Materials:</b> analyze the structure and format of functional workplace documents, including the graphics and headers and explain how authors use the features to achieve their purposes	3
R2.2 <b>Structural Features of Informational Materials:</b> prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents	2
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> generate relevant questions about readings on issues that can be researched	2
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> synthesize the content from several sources or works by a single author dealing with a single issue; paraphrase the ideas and connect them to other sources and related topics to demonstrate comprehension	3

**Grade 9 English Language Arts (Continued)**

Standard	Consensus
<p><b>R2.6 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and access guides World Wide Web sites on the Internet)</p>	1
<p><b>R2.7 Expository Critique:</b> critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings</p>	3
<p><b>R2.8 Expository Critique:</b> evaluate the credibility of an author’s argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author’s intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material)</p>	3
<p><b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They conduct in-depth analyses of recurrent patterns and themes. The selections in <i>Recommended Literature, Grades Nine Through Twelve</i> illustrate the quality and complexity of the materials to be read by students.</b></p>	
<p><b>R3.1 Structural Features of Literature:</b> articulate the relationship between the expressed purposes and the characteristics of different forms of dramatic literature (e.g., comedy, tragedy, drama, dramatic monologue)</p>	2
<p><b>R3.2 Structural Features of Literature:</b> compare and contrast the presentation of a similar theme or topic across genres to explain how the selection of genre shapes the theme or topic</p>	3
<p><b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze interactions between main and subordinate characters in a literary text (e.g., internal and external conflicts, motivations, relationships, influences) and explain the way those interactions affect the plot</p>	3
<p><b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> determine characters’ traits by what the characters say about themselves in narration, dialogue, dramatic monologue, and soliloquy</p>	2
<p><b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> compare works that express a universal theme, and provide evidence to support the ideas expressed in each work</p>	3
<p><b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze and trace an author’s development of time and sequence, including the use of complex literary devices (e.g., foreshadowing, flashbacks)</p>	2

## Grade 9 English Language Arts (Continued)

Standard	Consensus
<b>R3.7 Narrative Analysis of Grade-Level-Appropriate Text:</b> recognize and understand the significance of various literary devices, including figurative language, imagery, allegory, and symbolism, and explain their appeal	2
<b>R3.8 Narrative Analysis of Grade-Level-Appropriate Text:</b> interpret and evaluate the impact of ambiguities, subtleties, contradictions, ironies, and incongruities in a text	3
<b>R3.9 Narrative Analysis of Grade-Level-Appropriate Text:</b> explain how voice, persona, and the choice of a narrator affect characterization and the tone, plot, and credibility of a text	3
<b>R3.10 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify and describe the function of dialogue, scene designs, soliloquies, asides, and character foils in dramatic literature	2
<b>R3.11 Literary Criticism:</b> evaluate the aesthetic qualities of style, including the impact of diction and figurative language on tone, mood, and theme, using the terminology of literary criticism (Aesthetic Approach)	3
<b>R3.12 Literary Criticism:</b> analyze the way in which a work of literature is related to the themes and issues of its historical period (Historical Approach)	3
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions.</b>	
<b>W1.1 Grammar and Mechanics of Writing:</b> identify and correctly use clauses (e.g., main and subordinate), phrases (e.g., gerund, infinitive, and participial), and mechanics of punctuation (e.g., semi-colons, colons, ellipses, hyphens)	2
<b>W1.2 Grammar and Mechanics of Writing:</b> understand sentence construction (e.g., parallel structure, subordination, proper placement of modifiers) and proper English usage (e.g., consistency of verb tenses)	1
<b>W1.3 Grammar and Mechanics of Writing:</b> demonstrate an understanding of proper English usage and control of grammar, paragraph and sentence structure, diction, and syntax	1
<b>W1.4 Manuscript Form:</b> produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization	1
<b>W1.5 Manuscript Form:</b> reflect appropriate manuscript requirements, including 1) title page presentation 2) pagination 3) spacing and margins 4) integration of source and support material (e.g., in-text citation, use of direct quotations, paraphrasing) with appropriate citations	1

**Grade 9 English Language Arts (Continued)**

Standard	Consensus
<b>WS1.0 WRITING STRATEGIES: Students write coherent and focused essays that convey a well-defined perspective and tightly-reasoned argument. The writing demonstrates students' awareness of the audience and purpose. Students progress through the stages of the writing process as needed.</b>	
WS1.1 <b>Organization and Focus:</b> establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing	3
WS1.2 <b>Organization and Focus:</b> use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice	3
WS1.3 <b>Research and Technology:</b> use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources	2
WS1.4 <b>Research and Technology:</b> develop the main ideas within the body of the composition through supportive evidence (e.g., scenarios, commonly held beliefs, hypotheses, definitions)	2
WS1.5 <b>Research and Technology:</b> synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents)	3
WS1.7 <b>Research and Technology:</b> use appropriate conventions for documentation in the text, notes, and bibliographies by adhering to those in style manuals (e.g., the <i>Modern Language Association Handbook</i> , <i>The Chicago Manual of Style</i> )	1
WS1.9 <b>Evaluation and Revision:</b> revise writing to improve the logic and coherence of the organization and controlling perspective, the precision of word choice, and the tone by taking into consideration the audience, purpose, and formality of the context	3

**Table B8:  
Grade 10 English Language Arts DOK Consensus**

Standard	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students apply their knowledge of word origins to determine the meaning of new words encountered in reading materials and use those words accurately.	
R1.1 <b>Vocabulary and Concept Development:</b> identify and use the literal and figurative meanings of words and understand word derivations	1
R1.2 <b>Vocabulary and Concept Development:</b> distinguish between the denotative and connotative meanings of words and interpret the connotative power of words	2
R1.3 <b>Vocabulary and Concept Development:</b> identify Greek, Roman, and Norse mythology and use the knowledge to understand the origin and meaning of new words (e.g., the word “narcissistic” drawn from the myth of Narcissus and Echo)	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They analyze the organizational patterns, arguments, and positions advanced. The selections in <i>Recommended Readings in Literature, Grades Nine Through Twelve (1990)</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade twelve, students read two million words annually on their own, including a wide variety of classic and contemporary literature, magazines, newspapers, online information. In grades nine and ten, students make substantial progress toward this goal.	
R2.1 <b>Structural Features of Informational Materials:</b> analyze the structure and format of functional workplace documents, including the graphics and headers and explain how authors use the features to achieve their purposes	2
R2.2 <b>Structural Features of Informational Materials:</b> prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents	1
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> generate relevant questions about readings on issues that can be researched	2
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> synthesize the content from several sources or works by a single author dealing with a single issue; paraphrase the ideas and connect them to other sources and related topics to demonstrate comprehension	3

## Grade 10 English Language Arts (Continued)

Standard	Consensus
<b>R2.6 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and access guides World Wide Web sites on the Internet)	1
<b>R2.7 Expository Critique:</b> critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings	3
<b>R2.8 Expository Critique:</b> evaluate the credibility of an author’s argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author’s intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material)	3
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They conduct in-depth analyses of recurrent patterns and themes. The selections in <i>Recommended Literature, Grades Nine Through Twelve</i> illustrate the quality and complexity of the materials to be read by students.</b>	
<b>R3.1 Structural Features of Literature:</b> articulate the relationship between the expressed purposes and the characteristics of different forms of dramatic literature (e.g., comedy, tragedy, drama, dramatic monologue)	2
<b>R3.2 Structural Features of Literature:</b> compare and contrast the presentation of a similar theme or topic across genres to explain how the selection of genre shapes the theme or topic	3
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze interactions between main and subordinate characters in a literary text (e.g., internal and external conflicts, motivations, relationships, influences) and explain the way those interactions affect the plot	2
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> determine characters’ traits by what the characters say about themselves in narration, dialogue, dramatic monologue, and soliloquy	2
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> compare works that express a universal theme, and provide evidence to support the ideas expressed in each work	3
<b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze and trace an author’s development of time and sequence, including the use of complex literary devices (e.g., foreshadowing, flashbacks)	2

### Grade 10 English Language Arts (Continued)

Standard	Consensus
<b>R3.7 Narrative Analysis of Grade-Level-Appropriate Text:</b> recognize and understand the significance of various literary devices, including figurative language, imagery, allegory, and symbolism, and explain their appeal	2
<b>R3.8 Narrative Analysis of Grade-Level-Appropriate Text:</b> interpret and evaluate the impact of ambiguities, subtleties, contradictions, ironies, and incongruities in a text	3
<b>R3.9 Narrative Analysis of Grade-Level-Appropriate Text:</b> explain how voice, persona, and the choice of a narrator affect characterization and the tone, plot, and credibility of a text	3
<b>R3.10 Narrative Analysis of Grade-Level-Appropriate Text:</b> identify and describe the function of dialogue, scene designs, soliloquies, asides, and character foils in dramatic literature	2
<b>R3.11 Literary Criticism:</b> evaluate the aesthetic qualities of style, including the impact of diction and figurative language on tone, mood, and theme, using the terminology of literary criticism (Aesthetic Approach)	3
<b>R3.12 Literary Criticism:</b> analyze the way in which a work of literature is related to the themes and issues of its historical period (Historical Approach)	3
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions.</b>	
<b>W1.1 Grammar and Mechanics of Writing:</b> identify and correctly use clauses (e.g., main and subordinate), phrases (e.g., gerund, infinitive, and participial), and mechanics of punctuation (e.g., semicolons, colons, ellipses, hyphens)	1
<b>W1.2 Grammar and Mechanics of Writing:</b> understand sentence construction (e.g., parallel structure, subordination, proper placement of modifiers) and proper English usage (e.g., consistency of verb tenses)	1
<b>W1.3 Grammar and Mechanics of Writing:</b> demonstrate an understanding of proper English usage and control of grammar, paragraph and sentence structure, diction, and syntax	2
<b>W1.4 Manuscript Form:</b> produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization	1
<b>W1.5 Manuscript Form:</b> reflect appropriate manuscript requirements, including 1) title page presentation 2) pagination 3) spacing and margins 4) integration of source and support material (e.g., in-text citation, use of direct quotations, paraphrasing) with appropriate citations	1

## Grade 10 English Language Arts (Continued)

Standard	Consensus
<b>WS1.0 WRITING STRATEGIES: Students write coherent and focused essays that convey a well-defined perspective and tightly-reasoned argument. The writing demonstrates students' awareness of the audience and purpose. Students progress through the stages of the writing process as needed.</b>	
WS1.1 <b>Organization and Focus:</b> establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing	3
WS1.2 <b>Organization and Focus:</b> use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice	2
WS1.3 <b>Research and Technology:</b> use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources	2
WS1.4 <b>Research and Technology:</b> develop the main ideas within the body of the composition through supportive evidence (e.g., scenarios, commonly held beliefs, hypotheses, definitions)	2
WS1.5 <b>Research and Technology:</b> synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents)	3
WS1.7 <b>Research and Technology:</b> use appropriate conventions for documentation in the text, notes, and bibliographies by adhering to those in style manuals (e.g., the <i>Modern Language Association Handbook</i> , <i>The Chicago Manual of Style</i> )	1
WS1.9 <b>Evaluation and Revision:</b> revise writing to improve the logic and coherence of the organization and controlling perspective, the precision of word choice, and the tone by taking into consideration the audience, purpose, and formality of the context	3

**Table B9:  
Grade 11 English Language Arts DOK Consensus**

Standard	Consensus
<b>Vocabulary</b>	
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students apply their knowledge of word origins to determine the meaning of new words encountered in reading materials and use those words accurately.	
R1.1 <b>Vocabulary and Concept Development:</b> trace the etymology of significant terms used in political science and history	2
R1.2 <b>Vocabulary and Concept Development:</b> apply knowledge of Greek, Latin, and Anglo-Saxon roots and affixes to draw inferences concerning the meaning of scientific and mathematical terminology	2
R1.3 <b>Vocabulary and Concept Development:</b> discern the meaning of analogies encountered, analyzing specific comparisons as well as relationships and inferences	2
<b>Reading for Understanding</b>	
<b>R2.0 READING COMPREHENSION (FOCUS ON INFORMATIONAL MATERIALS):</b> Students read and understand grade-level-appropriate material. They analyze the organizational patterns, arguments, and positions advanced. The selections in <i>Recommended Readings in Literature, Grades Nine Through Twelve</i> illustrate the quality and complexity of the materials to be read by students. In addition, by grade twelve, students read two million words annually on their own, including a wide variety of classic and contemporary literature, magazines, newspapers, and online information.	
R2.1 <b>Structural Features of Informational Materials:</b> analyze both the features and the rhetorical devices of different types of public documents (e.g., policy statements, speeches, debates, platforms) and the way in which authors use those features and devices	2
R2.2 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> analyze the way in which clarity of meaning is affected by the patterns of organization, hierarchical structures, repetition of the main ideas, syntax, and word choice in the text	2
R2.3 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> verify and clarify facts presented in other types of expository texts by using a variety of consumer, workplace, and public documents	2
R2.4 <b>Comprehension and Analysis of Grade-Level-Appropriate Text:</b> make warranted and reasonable assertions about the author’s argument by using elements of the text to defend and clarify interpretations	3

## Grade 11 English Language Arts (Continued)

Standard	Consensus
<b>R2.5 Comprehension and Analysis of Grade-Level-Appropriate Text:</b> analyze an author’s implicit and explicit philosophical assumptions and beliefs about a subject	3
<b>R2.6 Expository Critique:</b> critique the power, validity, and truthfulness of arguments set forth in public documents; their appeal to both friendly and hostile audiences; and the extent to which the arguments anticipate and address reader concerns and counterclaims (e.g., appeal to reason, to authority, to pathos and emotion)	3
<b>R3.0 LITERARY RESPONSE AND ANALYSIS: Students read and respond to historically or culturally significant works of literature that reflect and enhance their studies of history and social science. They conduct in-depth analyses of recurrent themes. The selections in <i>Recommended Readings in Literature, Grades Nine Through Twelve</i> illustrate the quality and complexity of the materials to be read by students.</b>	
<b>R3.1 Structural Features of Literature:</b> analyze characteristics of sub-genres (e.g., satire, parody, allegory, pastoral) that are used in poetry, prose, plays, novels, short stories, essays, and other basic genres	2
<b>R3.2 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the way in which the theme or meaning of a selection represents a view or comment on life, using textual evidence to support the claim	3
<b>R3.3 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the way in which irony, tone, mood, the author’s style, and the “sound” of language achieve specific rhetorical or aesthetic purposes or both	2
<b>R3.4 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze ways in which poets use imagery, personification, figures of speech, and sounds to evoke reader’s emotions	2
<b>R3.5 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze recognized works of American literature representing a variety of genres and traditions:	
<b>R3.5.1</b> trace the development of American literature from the Colonial period forward	2
<b>R3.5.2</b> contrast the major periods, themes, styles, and trends and describe how works by members of different cultures relate to one another in each period	3
<b>R3.5.3</b> evaluate the philosophical, political, religious, ethical, and social influences of the historical period that shaped the characters, plots, and settings	3
<b>R3.6 Narrative Analysis of Grade-Level-Appropriate Text:</b> analyze the way in which authors through the centuries have used archetypes drawn from myth and tradition in literature, film, political speeches, and religious writings (e.g., how the archetypes of banishment from an ideal world may be used to interpret Shakespeare’s tragedy <i>Macbeth</i> )	3

## Grade 11 English Language Arts (Continued)

Standard	Consensus
R3.8 <b>Literary Criticism:</b> analyze the clarity and consistency of political assumptions in a selection of literary works or essays on a topic (e.g., suffrage, women’s role in organized labor) (Political Approach)	3
R3.9 <b>Literary Criticism:</b> analyze the philosophical arguments presented in literary works to determine whether the authors’ positions have contributed to the quality of each work and the credibility of its characters (Philosophical Approach)	3
<b>Language</b>	
<b>W1.0 WRITTEN AND ORAL ENGLISH LANGUAGE CONVENTIONS: Students write and speak with a command of standard English conventions.</b>	
W1.1 demonstrate control of grammar, diction, paragraph and sentence structure, and an understanding of English	2
W1.2 produce legible work that shows accurate spelling and correct punctuation and capitalization	1
<b>WS1.0 WRITING STRATEGIES: Students write coherent and focused texts that convey a well-defined perspective and tightly-reasoned argument. The writing demonstrates students’ awareness of the audience and purpose and progression through the stages of the writing process.</b>	
WS1.1 <b>Organization and Focus:</b> demonstrate an understanding of the elements of discourse (e.g., purpose, speaker, audience, form) when completing narrative, expository, persuasive, or descriptive writing assignments	2
WS1.2 <b>Organization and Focus:</b> use point of view, characterization, style (e.g., use of irony), and related elements for specific rhetorical and aesthetic purposes	3
WS1.3 <b>Organization and Focus:</b> structure ideas and arguments in a sustained, persuasive, and sophisticated way and support them with precise and relevant examples	3
WS1.4 <b>Organization and Focus:</b> enhance meaning by employing rhetorical devices, including the extended use of parallelism, repetition, and analogy; the incorporation of visual aids (e.g., graphs, tables, pictures); and the issuance of a call for action	3
WS1.5 <b>Organization and Focus:</b> use language in natural, fresh, and vivid ways to establish a specific tone	3
WS1.7 <b>Research and Technology:</b> use systematic strategies to organize and record information (e.g., anecdotal scripting, annotated bibliographies)	2
WS1.9 <b>Evaluation and Revision:</b> revise text to highlight individual voice, improve sentence variety and style, and enhance subtlety of meaning and tone in ways that are consistent with the purpose, audience, and genre	3

## Science Depth-of-Knowledge Consensus

**Table B10:**  
**Grade 5 Science DOK Consensus**

Standards	Consensus
<b>Physical Science</b>	
<b>5PS.1 Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:</b>	
5PS.1.a <i>Students know</i> that during chemical reactions the atoms in the reactants rearrange to form products with different properties.	1
5PS.1.b <i>Students know</i> all matter is made of atoms, which may combine to form molecules.	1
5PS.1.c <i>Students know</i> metals have properties in common, such as high electrical and thermal conductivity. Some metals, such as aluminum (Al), iron (Fe), nickel (Ni), copper (Cu), silver (Ag), and gold (Au), are pure elements; others, such as steel and brass, are composed of a combination of elemental metals.	1
5PS.1.d <i>Students know</i> that each element is made of one kind of atom and that the elements are organized in the periodic table by their chemical properties.	1
5PS.1.f <i>Students know</i> differences in chemical and physical properties of substances are used to separate mixtures and identify compounds.	1
5PS.1.g <i>Students know</i> properties of solid, liquid, and gaseous substances, such as sugar (C <sub>6</sub> H <sub>12</sub> O <sub>6</sub> ), water (H <sub>2</sub> O), helium (He), oxygen (O <sub>2</sub> ), nitrogen (N <sub>2</sub> ), and carbon dioxide (CO <sub>2</sub> ).	1
<b>4PS.1 Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept:</b>	
4PS.1.a <i>Students know</i> how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.	3
4PS.1.b <i>Students know</i> how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.	2
4PS.1.c <i>Students know</i> electric currents produce magnetic fields and know how to build a simple electromagnet.	2
4PS.1.f <i>Students know</i> that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.	1
4PS.1.g <i>Students know</i> electrical energy can be converted to heat, light, and motion.	1

**Grade 5 Science (Continued)**

Standards	Consensus
<b>Life Science</b>	
<b>5LS.2 Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:</b>	
5LS.2.b <i>Students know</i> how blood circulates through the heart chambers, lungs, and body and how carbon dioxide (CO <sub>2</sub> ) and oxygen (O <sub>2</sub> ) are exchanged in the lungs and tissues.	2
5LS.2.c <i>Students know</i> the sequential steps of digestion and the roles of teeth and the mouth, esophagus, stomach, small intestine, large intestine, and colon in the function of the digestive system.	2
5LS.2.d <i>Students know</i> the role of the kidney in removing cellular waste from blood and converting it into urine, which is stored in the bladder.	1
5LS.2.e <i>Students know</i> how sugar, water, and minerals are transported in a vascular plant.	2
5LS.2.f <i>Students know</i> plants use carbon dioxide (CO <sub>2</sub> ) and energy from sunlight to build molecules of sugar and release oxygen.	1
5LS.2.g <i>Students know</i> plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO <sub>2</sub> ) and water (respiration).	1
<b>4LS.2 All organisms need energy and matter to live and grow. As a basis for understanding this concept:</b>	
4LS.2.a <i>Students know</i> plants are the primary source of matter and energy entering most food chains.	1
4LS.2.b <i>Students know</i> producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.	2
4LS.2.c <i>Students know</i> decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.	1
<b>4LS.3 Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:</b>	
4LS.3.a <i>Students know</i> ecosystems can be characterized by their living and nonliving components.	1
4LS.3.b <i>Students know</i> that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.	2
4LS.3.c <i>Students know</i> many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.	1

**Grade 5 Science (Continued)**

Standards	Consensus
<b>Earth Science</b>	
<b>5ES.3 Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:</b>	
5ES.3.a <i>Students know</i> most of Earth's water is present as salt water in the oceans, which cover most of Earth's surface.	1
5ES.3.b <i>Students know</i> when liquid water evaporates, it turns into water vapor in the air and can reappear as a liquid when cooled or as a solid if cooled below the freezing point of water.	1
5ES.3.c <i>Students know</i> water vapor in the air moves from one place to another and can form fog or clouds, which are tiny droplets of water or ice, and can fall to Earth as rain, hail, sleet, or snow.	1
5ES.3.d <i>Students know</i> that the amount of fresh water located in rivers, lakes, underground sources, and glaciers is limited and that its availability can be extended by recycling and decreasing the use of water.	1
<b>5ES.4 Energy from the Sun heats Earth unevenly, causing air movements that result in changing weather patterns. As a basis for understanding this concept:</b>	
5ES.4.d <i>Students know</i> how to use weather maps and data to predict local weather and know that weather forecasts depend on many variables.	3
<b>5ES.5 The solar system consists of planets and other bodies that orbit the Sun in predictable paths. As a basis for understanding this concept:</b>	
5ES.5.a <i>Students know</i> the Sun, an average star, is the central and largest body in the solar system and is composed primarily of hydrogen and helium.	1
5ES.5.b <i>Students know</i> the solar system includes the planet Earth, the Moon, the Sun, eight other planets and their satellites, and smaller objects, such as asteroids and comets.	1
<b>4ES.4 The properties of rocks and minerals reflect the processes that formed them. As a basis for understanding this concept:</b>	
4ES.4.a <i>Students know</i> how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).	2
4ES.4.b <i>Students know</i> how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.	2
<b>4ES.5. Waves, wind, water, and ice shape and reshape Earth's land surface. As a basis for understanding this concept:</b>	
4ES.5.a <i>Students know</i> some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.	1

### Grade 5 Science (Continued)

Standards	Consensus
4ES.5.b <i>Students know</i> natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.	1
4ES.5.c <i>Students know</i> moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).	1
<b>Investigation and Experimentation</b>	
<b>5IE.6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b>	
5IE.6.a Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.	2
5IE.6.d Identify the dependent and controlled variables in an investigation.	2
5IE.6.f Select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.	2
5IE.6.g Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.	3
5IE.6.h Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.	3
<b>4IE.6 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b>	
4IE.6.a Differentiate observation from inference (interpretation) and know scientists' explanations come partly from that they observe and partly from how they interpret their observations.	2
4IE.6.b Measure and estimate the weight, length, or volume of objects.	2
4IE.6.c Formulate and justify predictions based on cause-and-effect relationships.	3

**Table B11:**  
**Grade 8 Science DOK Consensus**

Standard	Consensus
<b>Motion</b>	
<b>M8.1. The velocity of an object is the rate of change of its position. As a basis for understanding this concept:</b>	
M8.1.a <i>Students know</i> position is defined in relation to some choice of a standard reference point and a set of reference directions.	1
M8.1.b <i>Students know</i> that average speed is the total distance traveled divided by the total time elapsed and that the speed of an object along the path traveled can vary.	1
M8.1.c <i>Students know</i> how to solve problems involving distance, time, and average speed.	2
M8.1.d <i>Students know</i> the velocity of an object must be described by specifying both the direction and the speed of the object.	1
M8.1.e <i>Students know</i> changes in velocity may be due to changes in speed, direction, or both.	1
M8.1.f <i>Students know</i> how to interpret graphs of position versus time and graphs of speed versus time for motion in a single direction.	2
<b>F8.2 Unbalanced forces cause changes in velocity. As a basis for understanding this concept:</b>	
F8.2.a <i>Students know</i> a force has both direction and magnitude.	1
F8.2.b <i>Students know</i> when an object is subject to two or more forces at once, the result is the cumulative effect of all the forces.	2
F8.2.c <i>Students know</i> when the forces on an object are balanced, the motion of the object does not change.	1
F8.2.d <i>Students know</i> how to identify separately the two or more forces that are acting on a single static object, including gravity, elastic forces due to tension or compression in matter, and friction.	2
F8.2.e <i>Students know</i> that when the forces on an object are unbalanced, the object will change its velocity (that is, it will speed up, slow down, or change direction).	1
F8.2.f <i>Students know</i> the greater the mass of an object, the more force is needed to achieve the same rate of change in motion.	1
F8.2.g <i>Students know</i> the role of gravity in forming and maintaining the shapes of planets, stars, and the solar system.	1
<b>DB8.8 All objects experience a buoyant force when immersed in a fluid. As a basis for understanding this concept:</b>	
DB8.8.a <i>Students know</i> density is mass per unit volume.	1
DB8.8.b <i>Students know</i> how to calculate the density of substances (regular and irregular solids and liquids) from measurements of mass and volume.	2
DB8.8.c <i>Students know</i> the buoyant force on an object in a fluid is an upward force equal to the weight of the fluid the object has displaced.	1
DB8.8.d <i>Students know</i> how to predict whether an object will float or sink.	2

**Grade 8 Science (Continued)**

Standard	Consensus
<b>Earth Science</b>	
<b>ES8.4. The structure and composition of the universe can be learned from studying stars and galaxies and their evolution. As a basis for understanding this concept:</b>	
ES8.4.a <i>Students know</i> galaxies are clusters of billions of stars and may have different shapes.	1
ES8.4.b <i>Students know</i> that the Sun is one of many stars in the Milky Way galaxy and that stars may differ in size, temperature, and color.	1
ES8.4.d <i>Students know</i> that stars are the source of light for all bright objects in outer space and that the Moon and planets shine by reflected sunlight, not by their own light.	1
ES8.4.e <i>Students know</i> the appearance, general composition, relative position and size, and motion of objects in the solar system, including planets, planetary satellites, comets, and asteroids.	1
<b>Matter</b>	
<b>SM8.3 Each of the more than 100 elements of matter has distinct properties and a distinct atomic structure. All forms of matter are composed of one or more of the elements. As a basis for understanding this concept:</b>	
SM8.3.a <i>Students know</i> the structure of the atom and know it is composed of protons, neutrons, and electrons.	1
SM8.3.b <i>Students know</i> that compounds are formed by combining two or more different elements and that compounds have properties that are different from their constituent elements.	1
SM8.3.c <i>Students know</i> atoms and molecules form solids by building up repeating patterns, such as the crystal structure of NaCl or long-chain polymers.	1
SM8.3.d <i>Students know</i> the states of matter (solid, liquid, gas) depend on molecular motion.	1
SM8.3.e <i>Students know</i> that in solids the atoms are closely locked in position and can only vibrate; in liquids the atoms and molecules are more loosely connected and can collide with and move past one another; and in gases the atoms and molecules are free to move independently, colliding frequently.	1
SM8.3.f <i>Students know</i> how to use the periodic table to identify elements in simple compounds.	1
<b>R8.5 Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept:</b>	
R8.5.a <i>Students know</i> reactant atoms and molecules interact to form products with different chemical properties.	1
R8.5.b <i>Students know</i> the idea of atoms explains the conservation of matter: In chemical reactions the number of atoms stays the same no matter how they are arranged, so their total mass stays the same.	1

## Grade 8 Science (Continued)

Standard	Consensus
R8.5.c <i>Students know</i> chemical reactions usually liberate heat or absorb heat.	1
R8.5.d <i>Students know</i> physical processes include freezing and boiling, in which a material changes form with no chemical reaction.	1
R8.5.e <i>Students know</i> how to determine whether a solution is acidic, basic, or neutral.	2
<b>LS8.6 Principles of chemistry underlie the functioning of biological systems. As a basis for understanding this concept:</b>	
LS8.6.a <i>Students know</i> that carbon, because of its ability to combine in many ways with itself and other elements, has a central role in the chemistry of living organisms.	1
LS8.6.b <i>Students know</i> that living organisms are made of molecules consisting largely of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.	1
LS8.6.c <i>Students know</i> that living organisms have many different kinds of molecules, including small ones, such as water and salt, and very large ones, such as carbohydrates, fats, proteins, and DNA.	1
<b>PT8.7 The organization of the periodic table is based on the properties of the elements and reflects the structure of atoms. As a basis for understanding this concept:</b>	
PT8.7.a <i>Students know</i> how to identify regions corresponding to metals, nonmetals, and inert gases.	2
PT8.7.b <i>Students know</i> each element has a specific number of protons in the nucleus (the atomic number) and each isotope of the element has a different but specific number of neutrons in the nucleus.	1
PT8.7.c <i>Students know</i> substances can be classified by their properties, including their melting temperature, density, hardness, and thermal and electrical conductivity.	2
<b>Investigation and Experimentation</b>	
<b>IE8.9 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b>	
IE8.9.a Plan and conduct a scientific investigation to test a hypothesis.	3
IE8.9.b Evaluate the accuracy and reproducibility of data.	3
IE8.9.c Distinguish between variable and controlled parameters in a test.	2
IE8.9.e Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.	3
IE8.9.f Apply simple mathematic relationships to determine a missing quantity in a mathematic expression, given the two remaining terms (including speed = distance/time, density = mass/volume, force = pressure x area, volume = area x height).	2

**Table B12:**  
**High School Science DOK Consensus**

Standards	Consensus
<b>Cell Biology and Genetics</b>	
<b>7CB.1 All living organisms are composed of cells, from just one to many trillions, whose details usually are visible only through a microscope. As a basis for understanding this concept:</b>	
7CB.1.c <i>Students know</i> the nucleus is the repository for genetic information in plant and animal cells.	1
7CB.1.d <i>Students know</i> that mitochondria liberate energy for the work that cells do and that chloroplasts capture sunlight energy for photosynthesis.	1
7CB.1.e <i>Students know</i> cells divide to increase their numbers through a process of mitosis, which results in two daughter cells with identical sets of chromosomes.	1
<b>8CB.6 Principles of chemistry underlie the functioning of biological systems. As a basis for understanding this concept:</b>	
8CB.6.b <i>Students know</i> that living organisms are made of molecules consisting largely of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.	1
8CB.6.c <i>Students know</i> that living organisms have many different kinds of molecules, including small ones, such as water and salt, and very large ones, such as carbohydrates, fats, proteins, and DNA.	1
<b>LS.1 The fundamental life processes of plants and animals depend on a variety of chemical reactions that occur in specialized areas of the organism's cells. As a basis for understanding this concept:</b>	
LS.1.a <i>Students know</i> cells are enclosed within semipermeable membranes that regulate their interaction with their surroundings.	1
LS.1.c <i>Students know</i> how prokaryotic cells, eukaryotic cells (including those from plants and animals), and viruses differ in complexity and general structure.	2
LS.1.f <i>Students know</i> usable energy is captured from sunlight by chloroplasts and is stored through the synthesis of sugar from carbon dioxide.	1
<b>G7.2 A typical cell of any organism contains genetic instructions that specify its traits. Those traits may be modified by environmental influences. As a basis for understanding this concept:</b>	
G7.2.a <i>Students know</i> the differences between the life cycles and reproduction methods of sexual and asexual organisms.	2
G7.2.c <i>Students know</i> an inherited trait can be determined by one or more genes.	1
G7.2.d <i>Students know</i> plant and animal cells contain many thousands of different genes and typically have two copies of every gene. The two copies (or alleles) of the gene may or may not be identical, and one may be dominant in determining the phenotype while the other is recessive.	1

## High School Science (Continued)

Standards	Consensus
G7.2.e <i>Students know</i> DNA (deoxyribonucleic acid) is the genetic material of living organisms and is located in the chromosomes of each cell.	1
<b>LS.2 Mutation and sexual reproduction lead to genetic variation in a population. As a basis for understanding this concept:</b>	
LS.2.b <i>Students know</i> only certain cells in a multicellular organism undergo meiosis.	1
LS.2.d <i>Students know</i> new combinations of alleles may be generated in a zygote through the fusion of male and female gametes (fertilization).	1
LS.2.e <i>Students know</i> why approximately half of an individual's DNA sequence comes from each parent.	2
LS.2.f <i>Students know</i> the role of chromosomes in determining an individual's sex.	1
<b>LS.3 A multicellular organism develops from a single zygote, and its phenotype depends on its genotype, which is established at fertilization. As a basis for understanding this concept:</b>	
LS.3.a <i>Students know</i> how to predict the probable outcome of phenotypes in a genetic cross from the genotypes of the parents and mode of inheritance (autosomal or X-linked, dominant or recessive).	2
<b>LS.5 The genetic composition of cells can be altered by incorporation of exogenous DNA into the cells. As a basis for understanding this concept:</b>	
LS.5.a <i>Students know</i> the general structures and functions of DNA, RNA, and protein.	1
<b>Evolution and Ecology</b>	
<b>7EV.3 Biological evolution accounts for the diversity of species developed through gradual processes over many generations. As a basis for understanding this concept:</b>	
7EV.3.a <i>Students know</i> both genetic variation and environmental factors are causes of evolution and diversity of organisms.	1
7EV.3.b <i>Students know</i> the reasoning used by Charles Darwin in reaching his conclusion that natural selection is the mechanism of evolution.	1
7EV.3.c <i>Students know</i> how independent lines of evidence from geology, fossils, and comparative anatomy provide the bases for the theory of evolution.	2
<b>LS.7 The frequency of an allele in a gene pool of a population depends on many factors and may be stable or unstable over time. As a basis for understanding this concept:</b>	
LS.7.a <i>Students know</i> why natural selection acts on the phenotype rather than the genotype of an organism.	2
LS.7.c <i>Students know</i> new mutations are constantly being generated in a gene pool.	1

## High School Science (Continued)

Standards	Consensus
LS.7.d <i>Students know</i> variation within a species increases the likelihood that at least some members of a species will survive under changed environmental conditions.	1
<b>LS.8 Evolution is the result of genetic changes that occur in constantly changing environments. As a basis for understanding this concept:</b>	
LS.8.a <i>Students know</i> how natural selection determines the differential survival of groups of organisms.	2
LS.8.b <i>Students know</i> a great diversity of species increases the chance that at least some organisms survive major changes in the environment.	1
LS.8.e <i>Students know</i> how to analyze fossil evidence with regard to biological diversity, episodic speciation, and mass extinction.	2
<b>6EC.5 Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:</b>	
6EC.5.b <i>Students know</i> matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.	1
6EC.5.c <i>Students know</i> populations of organisms can be categorized by the functions they serve in an ecosystem.	1
6EC.5.e <i>Students know</i> the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.	1
<b>LS.6 Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:</b>	
LS.6.a <i>Students know</i> biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.	1
LS.6.b <i>Students know</i> how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.	2
LS.6.c <i>Students know</i> how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.	2
LS.6.d <i>Students know</i> how water, carbon, and nitrogen cycle between abiotic resources and organic matter in the ecosystem and how oxygen cycles through photosynthesis and respiration.	2
LS.6.e <i>Students know</i> a vital part of an ecosystem is the stability of its producers and decomposers.	1
LS.6.f <i>Students know</i> at each link in a food web some energy is stored in newly made structures but much energy is dissipated into the environment as heat. This dissipation may be represented in an energy pyramid.	1

## High School Science (Continued)

Standards	Consensus
<b>Physiology</b>	
<b>7P.5 The anatomy and physiology of plants and animals illustrate the complementary nature of structure and function. As a basis for understanding this concept:</b>	
7P.5.a <i>Students know</i> plants and animals have levels of organization for structure and function, including cells, tissues, organs, organ systems, and the whole organism.	1
7P.5.c <i>Students know</i> how bones and muscles work together to provide a structural framework for movement.	2
<b>7P.6. Physical principles underlie biological structures and functions. As a basis for understanding this concept:</b>	
7P.6.j <i>Students know</i> that contractions of the heart generate blood pressure and that heart valves prevent backflow of blood in the circulatory system.	1
<b>LS.9 As a result of the coordinated structures and functions of organ systems, the internal environment of the human body remains relatively stable (homeostatic) despite changes in the outside environment. As a basis for understanding this concept:</b>	
LS.9.a <i>Students know</i> how the complementary activity of major body systems provides cells with oxygen and nutrients and removes toxic waste products such as carbon dioxide.	2
LS.9.b <i>Students know</i> how the nervous system mediates communication between different parts of the body and the body's interactions with the environment.	2
<b>LS.10 Organisms have a variety of mechanisms to combat disease. As a basis for understanding the human immune response:</b>	
LS.10.b <i>Students know</i> the role of antibodies in the body's response to infection.	1
LS.10.c <i>Students know</i> how vaccination protects an individual from infectious diseases.	2
LS.10.d <i>Students know</i> there are important differences between bacteria and viruses with respect to their requirements for growth and replication, the body's primary defenses against bacterial and viral infections, and effective treatments of these infections.	2
<b>Investigation and Experimentation</b>	
<b>6IE.7 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b>	
6IE.7.c Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.	2
6IE.7.e Recognize whether evidence is consistent with a proposed explanation.	2

### High School Science (Continued)

Standards	Consensus
<b>7IE.7 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:</b>	
7IE.7.c Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.	3
<b>8IE.9 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in other three strands, students should develop their own questions and perform investigations. Students will:</b>	
8IE.9.c Distinguish between variable and controlled parameters in a test.	2
<b>9-12IE.1 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:</b>	
9-12IE.1.c Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.	2
9-12IE.1.f Distinguish between hypothesis and theory as scientific terms.	1
9-12IE.1.i Analyze the locations, sequences, or time intervals that are characteristic of natural phenomena (e.g., relative ages of rocks, locations of planets over time, and succession of species in an ecosystem).	2
9-12IE.1.j Recognize the issues of statistical variability and the need for controlled tests.	2

## Mathematics Depth-of-Knowledge Consensus

**Table B13:**  
**Grade 3 Mathematics DOK Consensus**

Standards	Consensus
<b>Number Sense</b>	
<b>NS1.0 Students understand the place value of whole numbers:</b>	
NS1.1 Count, read, and write whole numbers to 10,000.	1
NS1.2 Compare and order whole numbers to 10,000.	2
NS1.3 Identify the place value for each digit in numbers to 10,000.	1
NS1.4 Round off numbers to 10,000 to the nearest ten, hundred, and thousand.	2
NS1.5 Use expanded notation to represent numbers (e.g., $3,206 = 3,000 + 200 + 6$ ).	1
<b>NS2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:</b>	
NS2.1 Find the sum or difference of two whole numbers between 0 and 10,000.	1
NS2.3 Use the inverse relationship of multiplication and division to compute and check results.	2
NS2.4 Solve simple problems involving multiplication of multidigit numbers by one-digit numbers ( $3,671 \times 3 = \underline{\quad}$ ).	1
NS2.5 Solve division problems in which a multidigit number is evenly divided by a one-digit number ( $135 \div 5 = \underline{\quad}$ ).	1
NS2.6 Understand the special properties of 0 and 1 in multiplication and division.	1
NS2.8 Solve problems that require two or more of the skills mentioned above.	2
<b>NS3.0 Students understand the relationship between whole numbers, simple fractions, and decimals:</b>	
NS3.1 Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context (e.g., $\frac{1}{2}$ of a pizza is the same amount as $\frac{2}{4}$ of another pizza that is the same size; show that $\frac{3}{8}$ is larger than $\frac{1}{4}$ ).	2
NS3.2 Add and subtract simple fractions (e.g., determine that $\frac{1}{8} + \frac{3}{8}$ is the same as $\frac{1}{2}$ ).	2
NS3.3 Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation and multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.	2
NS3.4 Know and understand that fractions and decimals are two different representations of the same concept (e.g., 50 cents is $\frac{1}{2}$ of a dollar, 75 cents is $\frac{3}{4}$ of a dollar).	2

### Grade 3 Mathematics (Continued)

Standards	Consensus
<b>Algebra and Data Analysis</b>	
<b>AF1.0 Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships:</b>	
AF1.1 Represent relationships of quantities in the form of mathematical expressions, equations, or inequalities.	1
AF1.2 Solve problems involving numeric equations or inequalities.	1
AF1.4 Express simple unit conversions in symbolic form (e.g., _____ inches = _____ feet $\times$ 12).	2
AF1.5 Recognize and use the commutative and associative properties of multiplication (e.g., if $5 \times 7 = 35$ , then what is $7 \times 5$ ? and if $5 \times 7 \times 3 = 105$ , then what is $7 \times 3 \times 5$ ?).	1
<b>AF2.0 Students represent simple functional relationships:</b>	
AF2.1 Solve simple problems involving a functional relationship between two quantities (e.g., find the total cost of multiple items given the cost per unit).	2
AF2.2 Extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).	2
<b>S1.0 Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions:</b>	
S1.1 Identify whether common events are certain, likely, unlikely, or improbable.	2
S1.2 Record the possible outcomes for a simple event (e.g., tossing a coin) and systematically keep track of the outcomes when the event is repeated many times.	2
S1.3 Summarize and display the results of probability experiments in a clear and organized way (e.g., use a bar graph or a line plot).	2
<b>Measurement and Geometry</b>	
<b>MG1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:</b>	
MG1.1 Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.	2
MG1.2 Estimate or determine the area and volume of solid figures by covering them with squares or by counting the number of cubes that would fill them.	2
MG1.3 Find the perimeter of a polygon with integer sides.	1
MG1.4 Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).	2
<b>MG2.0 Students describe and compare the attributes of plane and solid geometric figures and use their understanding to show relationships and solve problems:</b>	

### Grade 3 Mathematics (Continued)

Standards	Consensus
MG2.1 Identify, describe, and classify polygons (including pentagons, hexagons, and octagons).	1
MG2.2 Identify attributes of triangles (e.g., two equal sides for the isosceles triangle, three equal sides for the equilateral triangle, right angle for the right triangle).	1
MG2.3 Identify attributes of quadrilaterals (e.g., parallel sides for the parallelogram, right angles for the rectangle, equal sides and right angles for the square).	1
MG2.4 Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle.	1
MG2.5 Identify, describe, and classify common three-dimensional geometric objects (e.g., cube, rectangular solid, sphere, prism, pyramid, cone, cylinder).	1
<b>Mathematical Reasoning</b>	
<b>MR1.0 Students make decisions about how to approach problems:</b>	
MR1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	2
MR1.2 Determine when and how to break a problem into simpler parts.	2
<b>MR2.0 Students use strategies, skills, and concepts in finding solutions:</b>	
MR2.1 Use estimation to verify the reasonableness of calculated results.	2
MR2.2 Apply strategies and results from simpler problems to more complex problems.	2
MR2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	3
MR2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	3
MR2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	2
MR2.6 Make precise calculations and check the validity of the results from the context of the problem.	2
<b>MR3.0 Students move beyond a particular problem by generalizing to other situations:</b>	
MR3.1 Evaluate the reasonableness of the solution in the context of the original situation.	2
MR3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	2
MR3.3 Develop generalizations of the results obtained and apply them in other circumstances.	2

**Table B14:  
Grade 4 Mathematics DOK Consensus**

Standard	Consensus
<b>Number Sense</b>	
<b>NS1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:</b>	
NS1.1 Read and write whole numbers in the millions.	1
NS1.2 Order and compare whole numbers and decimals to two decimal places.	1
NS1.3 Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand.	1
NS1.5 Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions (see Standard 4.0).	2
NS1.6 Write tenths and hundredths in decimal and fraction notations, and know the fraction and decimal equivalents for halves and fourths (e.g., $\frac{1}{2} = 0.5$ or $.50$ ; $\frac{7}{4} = 1\frac{3}{4} = 1.75$ ).	1
NS1.7 Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; and relate a fraction to a simple decimal on a number line.	1
NS1.8 Use concepts of negative numbers (e.g., on a number line, in counting, in temperature, in “owing”).	1
NS1.9 Identify on a number line the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places.	1
<b>NS2.0 Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals:</b>	
NS2.1 Estimate and compute the sum or difference of whole numbers and positive decimals to two places.	2
NS2.2 Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.	2
<b>NS3.0 Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations:</b>	
NS3.1 Demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers.	1
NS3.2 Demonstrate an understanding of, and the ability to use, standard algorithms for multiplying a multidigit number by a two-digit number and for dividing a multidigit number by a one-digit number; use relationships between them to simplify computations and to check results.	1
NS3.3 Solve problems involving multiplication of multidigit numbers by two-digit numbers	1

## Grade 4 Mathematics (Continued)

Standard	Consensus
NS3.4 Solve problems involving division of multidigit numbers by one-digit numbers.	1
<b>NS4.0 Students know how to factor small whole numbers:</b>	
NS4.1 Understand that many whole numbers break down in different ways (e.g., $12 = 4 \times 3 = 2 \times 6 = 2 \times 2 \times 3$ ).	1
NS4.2 Know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 and themselves and that such numbers are called prime numbers.	1
<b>Algebra and Data Analysis</b>	
<b>AF1.0 Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences:</b>	
AF1.1 Use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate an understanding and the use of the concept of a variable).	1
AF1.2 Interpret and evaluate mathematical expressions that now use parentheses.	1
AF1.3 Use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.	1
AF1.4 Use and interpret formulas (e.g., area = length $\times$ width or $A = lw$ ) to answer questions about quantities and their relationships.	2
AF1.5 Understand that an equation such as $y = 3x + 5$ is a prescription for determining a second number when a first number is given.	1
<b>AF2.0 Students know how to manipulate equations:</b>	
AF2.1 Know and understand that equals added to equals are equal.	1
AF2.2 Know and understand that equals multiplied by equals are equal.	1
<b>S1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:</b>	
S1.1 Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.	3
S1.2 Identify the mode(s) for sets of categorical data and the mode(s), median, and any apparent outliers for numerical data sets.	1
S1.3 Interpret one- and two-variable data graphs to answer questions about a situation.	2
<b>S2.0 Students make predictions for simple probability situations:</b>	
S2.1 Represent all possible outcomes for a simple probability situation in an organized way (e.g., tables, grids, tree diagrams).	2
S2.2 Express outcomes of experimental probability situations verbally and numerically (e.g., 3 out of 4; $\frac{3}{4}$ ).	1

## Grade 4 Mathematics (Continued)

Standard	Consensus
<b>Measurement and Geometry</b>	
<b>MG1.0 Students understand perimeter and area:</b>	
MG1.1 Measure the area of rectangular shapes by using appropriate units such as square centimeter (cm <sup>2</sup> ), square meter (m <sup>2</sup> ), square kilometer (km <sup>2</sup> ), square inch (in <sup>2</sup> ), square yard (yd <sup>2</sup> ), or square mile (mi <sup>2</sup> ).	1
MG1.4 Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares. Use those formulas to find the areas of more complex figures by dividing the figures into basic shapes.	2
<b>MG2.0 Students use two-dimensional coordinate grids to represent points and graph lines and simple figures:</b>	
MG2.1 Draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation $y = 3x$ and connect them by using a straight line).	2
MG2.2 Understand that the length of a horizontal line segment equals the difference of the $x$ -coordinates.	2
MG2.3 Understand that the length of a vertical line segment equals the difference of the $y$ -coordinates.	2
<b>MG3.0 Students demonstrate an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems:</b>	
MG3.1 Identify lines that are parallel and perpendicular.	1
MG3.2 Identify the radius and diameter of a circle.	1
MG3.3 Identify congruent figures.	1
MG3.5 Know the definitions of a right angle, an acute angle, and an obtuse angle. Understand that 90°, 180°, 270°, and 360° are associated, respectively with $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , and full turns.	1
MG3.6 Visualize, describe, and make models of geometric solids (e.g., prisms, pyramids) in terms of the number and shape of faces, edges, and vertices; interpret two-dimensional representations of three-dimensional objects; and draw patterns (of faces) for a solid that, when cut and folded, will make a model of the solid.	2
<b>Mathematical Reasoning</b>	
<b>MR1.0 Students make decisions about how to approach problems:</b>	
MR1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	2
MR1.2 Determine when and how to break a problem into simpler parts.	2
<b>MR2.0 Students use strategies, skills, and concepts in finding solutions:</b>	
MR2.1 Use estimation to verify the reasonableness of calculated results.	2
MR2.2 Apply strategies and results from simpler problems to more complex problems.	2

**Grade 4 Mathematics (Continued)**

<b>Standard</b>	<b>Consensus</b>
MR2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	3
MR2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	3
MR2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	2
MR2.6 Make precise calculations and check the validity of the results from the context of the problem.	2
<b>MR3.0 Students move beyond a particular problem by generalizing to other situations:</b>	
MR3.1 Evaluate the reasonableness of the solution in the context of the original situation.	2
MR3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	2
MR3.3 Develop generalizations of the results obtained and apply them in other circumstances.	2

**Table B15:  
Grade 5 Mathematics DOK Consensus**

<b>Standard</b>	<b>Consensus</b>
<b>Number Sense</b>	
<b>NS1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:</b>	
NS1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.	1
NS1.2 Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number.	2
NS1.3 Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication.	1
NS1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$ ).	1
NS1.5 Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.	1
<b>NS2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:</b>	
NS2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.	1
NS2.2 Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.	1
NS2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.	2
NS2.5 Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	2
<b>Algebra and Data Analysis</b>	
<b>AF1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:</b>	
AF1.1 Use information taken from a graph or equation to answer questions about a problem situation.	2
AF1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.	2
AF1.3 Know and use the distributive property in equations and expressions with variables.	1
AF1.4 Identify and graph ordered pairs in the four quadrants of the coordinate plane.	1

## Grade 5 Mathematics (Continued)

Standard	Consensus
AF1.5 Solve problems involving linear functions with integer values; write the equation; and graph the resulting ordered pairs of integers on a grid.	2
<b>S1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:</b>	
S1.1 Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ.	2
S1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.	2
S1.4 Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph.	2
S1.5 Know how to write ordered pairs correctly; for example, (x, y).	1
<b>Measurement and Geometry</b>	
<b>MG1.0 Students understand and compute the volumes and areas of simple objects:</b>	
MG1.1 Derive and use the formula for the area of a triangle and of a parallelogram by comparing it with the formula for the area of a rectangle (i.e., two of the same triangles make a parallelogram with twice the area; a parallelogram is compared with a rectangle of the same area by cutting and pasting a right triangle on the parallelogram).	2
MG1.2 Construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.	2
MG1.3 Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter[cm <sup>3</sup> ], cubic meter[m <sup>3</sup> ], cubic inch[in <sup>3</sup> ], cubic yard[yd <sup>3</sup> ]) to compute the volume of rectangular solids.	2
MG1.4 Differentiate between and use appropriate units of measures for, two- and three- dimensional objects (i.e., find perimeter, area, volume).	1
<b>MG2.0 Students identify, describe, and classify the properties of, and the relationships between, plane and solid geometric figures:</b>	
MG2.1 Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools (e.g., straightedge, ruler, compass, protractor, drawing software).	1
MG2.2 Know that the sum of the angles of any triangle is 180° and the sum of the angles of any quadrilateral is 360° and use this information to solve problems.	1
<b>Mathematical Reasoning</b>	
<b>MR1.0 Students make decisions about how to approach problems:</b>	
MR1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	2
MR1.2 Determine when and how to break a problem into simpler parts.	2

**Grade 5 Mathematics (Continued)**

<b>Standard</b>	<b>Consensus</b>
<b>MR2.0 Students use strategies, skills, and concepts in finding solutions:</b>	
MR2.1 Use estimation to verify the reasonableness of calculated results.	2
MR2.2 Apply strategies and results from simpler problems to more complex problems.	2
MR2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	3
MR2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	3
MR2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	2
MR2.6 Make precise calculations and check the validity of the results from the context of the problem.	2
<b>MR3.0 Students move beyond a particular problem by generalizing to other situations:</b>	
MR3.1 Evaluate the reasonableness of the solution in the context of the original situation.	2
MR3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	2
MR3.3 Develop generalizations of the results obtained and apply them in other circumstances.	2

**Table B16:**  
**Grade 6 Mathematics DOK Consensus**

Standards	Consensus
<b>Number Sense</b>	
<b>NS1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:</b>	
NS1.1 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.	2
NS1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations ( $a/b$ , $a$ to $b$ , $a:b$ ).	2
NS1.3 Use proportions to solve problems (e.g., determine the value of $N$ if $4/7 = N/21$ , find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.	2
NS1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.	2
<b>NS2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:</b>	
NS2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.	2
NS2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations (e.g., $5/8$ divided by $15/16 = 5/8 \times 16/15 = 2/3$ ).	1
NS2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.	2
NS2.4 Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction).	1
<b>Algebra and Data Analysis</b>	
<b>AF1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:</b>	
AF1.1 Write and solve one-step linear equations in one variable.	2
AF1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.	2
AF1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process.	2
AF1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator.	1

## Grade 6 Mathematics (Continued)

Standards	Consensus
<b>AF2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:</b>	
AF2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).	1
AF2.2 Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity.	2
AF2.3 Solve problems involving rates, average speed, distance, and time.	2
<b>AF3.0 Students investigate geometric patterns and describe them algebraically:</b>	
AF3.1 Use variables in expressions describing geometric quantities (e.g., $P = 2w + 2l$ , $A = \frac{1}{2}bh$ , $C = \pi d$ – the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).	1
AF3.2 Express in symbolic form simple relationships arising from geometry.	1
<b>S1.0 Students compute and analyze statistical measurements for data sets:</b>	
S1.1 Compute the range, mean, median, and mode of data sets.	1
<b>S2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:</b>	
S2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.	2
<b>S3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:</b>	
S3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.	2
S3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if $P$ is the probability of an event, $1 - P$ is the probability of an event not occurring.	2
S3.5 Understand the difference between independent and dependent events.	1
<b>Measurement and Geometry</b>	
<b>MG1.0 Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems:</b>	
MG1.1 Understand the concept of a constant such as $\pi$ ; know the formulas for the circumference and area of a circle.	1
MG1.2 Know common estimates of $\pi$ (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements.	2

## Grade 6 Mathematics (Continued)

Standards	Consensus
<b>MG2.0 Students identify and describe the properties of two-dimensional figures:</b>	
MG2.1 Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.	1
MG2.2 Use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle.	2
MG2.3 Draw quadrilaterals and triangles from given information about them (e.g., a quadrilateral having equal sides but no right angles, a right isosceles triangle).	2
<b>Mathematical Reasoning</b>	
<b>MR1.0 Students make decisions about how to approach problems.</b>	
MR1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	2
MR1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.	3
MR1.3 Determine when and how to break a problem into simpler parts.	2
<b>MR2.0 Students use strategies, skills, and concepts in finding solutions:</b>	
MR2.1 Use estimation to verify the reasonableness of calculated results.	2
MR2.2 Apply strategies and results from simpler problems to more complex problems.	2
MR2.3 Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.	2
MR2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	2
MR2.5 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	2
MR2.6 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	2
MR2.7 Make precise calculations and check the validity of the results from the context of the problem.	2
<b>MR3.0 Students move beyond a particular problem by generalizing to other situations.</b>	
MR3.1 Evaluate the reasonableness of the solution in the context of the original situation.	2
MR3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	3
MR3.3 Develop generalizations of the results obtained and the strategies used and apply them in new problem situations.	3

**Table B17:  
Grade 7 Mathematics DOK Consensus**

<b>Standard</b>	<b>Consensus</b>
<b>Number Sense</b>	
<b>NS1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:</b>	
NS1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation.	1
NS1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.	1
NS1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.	2
NS1.4 Differentiate between rational and irrational numbers.	1
NS1.5 Know that every rational number is either a terminating or repeating decimal and be able to convert terminating decimals into reduced fractions.	1
NS1.6 Calculate the percentage of increases and decreases of a quantity.	2
NS1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.	2
<b>NS2.0 Students use exponents, powers, and roots and use exponents in working with fractions:</b>	
NS2.1 Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base.	2
NS2.2 Add and subtract fractions by using factoring to find common denominators.	1
NS2.3 Multiply, divide, and simplify rational numbers by using exponent rules.	1
NS2.4 Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why.	2
NS2.5 Understand the meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.	2
<b>Algebra and Data Analysis</b>	
<b>AF1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:</b>	
AF1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).	2
AF1.2 Use the correct order of operations to evaluate algebraic expressions such as $3(2x + 5)^2$ .	1

## Grade 7 Mathematics (Continued)

Standard	Consensus
AF1.3 Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse, distributive, associative, commutative) and justify the process used.	2
AF1.4 Use algebraic terminology (e.g., variable, equation, term, coefficient, inequality, expression, constant) correctly.	1
AF1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.	2
<b>AF2.0 Students interpret and evaluate expressions involving integer powers and simple roots:</b>	
AF2.1 Interpret positive whole-number powers as repeated multiplication and negative whole-number powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents.	2
AF2.2 Multiply and divide monomials; extend the process of taking powers and extracting roots to monomials when the latter results in a monomial with an integer exponent.	2
<b>AF3.0 Students graph and interpret linear and some nonlinear functions:</b>	
AF3.1 Graph functions of the form $y = nx^2$ and $y = nx^3$ and use in solving problems.	2
AF3.3 Graph linear functions, noting that the vertical change (change in $y$ -value) per unit of horizontal change (change in $x$ -value) is always the same and know that the ratio (“rise over run”) is called the slope of a graph.	2
AF3.4 Plot the values of quantities whose ratios are always the same (e.g., cost to the number of an item, feet to inches, circumference to diameter of a circle). Fit a line to the plot and understand that the slope of the line equals the quantities.	2
<b>AF4.0 Students solve simple linear equations and inequalities over the rational numbers:</b>	
AF4.1 Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results.	2
AF4.2 Solve multistep problems involving rate, average speed, distance, and time or a direct variation.	2
<b>S1.0 Students collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set by hand and through the use of an electronic spreadsheet software program:</b>	
S1.1 Know various forms of display for data sets, including a stem-and-leaf plot or box-and-whisker plot; use the forms to display a single set of data or to compare two sets of data.	2

## Grade 7 Mathematics (Continued)

Standard	Consensus
S1.2 Represent two numerical variables on a scatterplot and informally describe how the data points are distributed and any apparent relationship that exists between the two variables (e.g., between time spent on homework and grade level).	2
S1.3 Understand the meaning of, and be able to compute, the minimum, the lower quartile, the median, the upper quartile, and the maximum of a data set.	2
<b>Measurement and Geometry</b>	
<b>MG1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:</b>	
MG1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).	2
MG1.2 Construct and read drawings and models made to scale.	2
MG1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.	2
<b>MG2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:</b>	
MG2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.	1
MG2.2 Estimate and compute the area of more complex or irregular two- and three-dimensional figures by breaking the figures down into more basic geometric objects.	2
MG2.3 Compute the length of the perimeter, the surface area of the faces, and the volume of a three-dimensional object built from rectangular solids. Understand that when the lengths of all dimensions are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the volume is multiplied by the cube of the scale factor.	2
MG2.4 Relate the changes in measurement with a change of scale to the units used (e.g., square inches, cubic feet) and to conversions between units (1 square foot = 144 square inches or $[1 \text{ ft}^2] = [144 \text{ in}^2]$ , 1 cubic inch is approximately 16.38 cubic centimeters or $[1 \text{ in}^3] = [16.38 \text{ cm}^3]$ ).	2

### Grade 7 Mathematics (Continued)

Standard	Consensus
<b>MG3.0 Students know the Pythagorean theorem and deepen their understanding of plane and solid geometric shapes by constructing figures that meet given conditions and by identifying attributes of figures:</b>	
MG3.2 Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine their image under translations and reflections.	2
MG3.3 Know and understand the Pythagorean theorem and its converse and use it to find the length of the missing side of a right triangle and the lengths of other line segments and, in some situations, empirically verify the Pythagorean theorem by direct measurement.	2
MG3.4 Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.	2
<b>Mathematical Reasoning</b>	
<b>MR1.0 Students make decisions about how to approach problems:</b>	
MR1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	2
MR1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.	2
MR1.3 Determine when and how to break a problem into simpler parts.	2
<b>MR2.0 Students use strategies, skills, and concepts in finding solutions:</b>	
MR2.1 Use estimation to verify the reasonableness of calculated results.	2
MR2.2 Apply strategies and results from simpler problems to more complex problems.	2
MR2.3 Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.	2
MR2.4 Make and test conjectures by using both inductive and deductive reasoning.	3
MR2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	2
MR2.6 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	2
MR2.7 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	2
MR2.8 Make precise calculations and check the validity of the results from the context of the problem.	2

**Grade 7 Mathematics (Continued)**

<b>Standard</b>	<b>Consensus</b>
<b>MR3.0 Students determine a solution is complete and move beyond a particular problem by generalizing to other situations:</b>	
MR3.1 Evaluate the reasonableness of the solution in the context of the original situation.	2
MR3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	2
MR3.3 Develop generalizations of the results obtained and the strategies used and apply them to new problem situations.	3

**Table B18:**  
**Algebra I DOK Consensus**

<b>Standards</b>	<b>Consensus</b>
<b>Number Properties, Operations, and Linear Equations</b>	
2.0 Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.	1
3.0 Students solve equations and inequalities involving absolute values.	2
4.0 Students simplify expressions prior to solving linear equations and inequalities in one variable, such as $3(2x-5) + 4(x-2) = 12$ .	2
5.0 Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.	3
24.2 Students identify the hypothesis and conclusion in logical deduction.	1
<b>Graphing and Systems of Linear Equations</b>	
6.0 Students graph a linear equation and compute the $x$ - and $y$ -intercepts (e.g., graph $2x + 6y = 4$ ). They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$ ).	2
7.0 Students verify that a point lies on a line, given an equation of the line. Students are able to derive linear equations using the point-slope formula.	2
8.0 Students understand the concepts of parallel lines and perpendicular lines and how those slopes are related. Students are able to find the equation of a line perpendicular to a given line that passes through a given point.	2
9.0 Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets.	2
<b>Quadratics and Polynomials</b>	
10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.	2
11.0 Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.	1
14.0 Students solve a quadratic equation by factoring or completing the square.	2
19.0 Students know the quadratic formula and are familiar with its proof by completing the square.	2
20.0 Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.	3

**Algebra I (Continued)**

<b>Standards</b>	<b>Consensus</b>
21.0 Students graph quadratic functions and know that their roots are the $x$ -intercepts.	2
22.0 Students use the quadratic formula or factoring techniques or both to determine whether the graph of a quadratic function will intersect the $x$ -axis in zero, one, or two points.	3
23.0 Students apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.	3
<b>Functions and Rational Expressions</b>	
12.0 Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.	2
13.0 Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.	2
15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.	2
17.0 Students determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs, or a symbolic expression.	2
18.0 Students determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify the conclusion.	3

**Table B19:  
Geometry DOK Consensus**

<b>Standard</b>	<b>Consensus</b>
<b>Logic and Geometric Proofs</b>	
1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	1
2.0 Students write geometric proofs, including proofs by contradiction.	3
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	3
4.0 Students prove basic theorems involving congruence and similarity.	3
5.0 Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	3
6.0 Students know and are able to use the triangle inequality theorem.	2
7.0 Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.	3
<b>Volume and Area Formulas</b>	
8.0 Students know, derive, and solve problems involving perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	2
9.0 Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.	2
10.0 Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	1
11.0 Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	2
<b>Angle Relationships, Constructions, and Lines</b>	
12.0 Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	2
13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	2
14.0 Students prove the Pythagorean theorem.	3
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	2
16.0 Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.	1
17.0 Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	3

**Geometry (Continued)**

<b>Standard</b>	<b>Consensus</b>
<b>Trigonometry</b>	
18.0 Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x)/\cos(x)$ , $(\sin(x))^2 + (\cos(x))^2 = 1$ .	1
19.0 Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.	2
20.0 Students know and are able to use angle and side relationships in problems with special right triangles, such as $30^\circ$ , $60^\circ$ , and $90^\circ$ triangles and $45^\circ$ , $45^\circ$ , and $90^\circ$ triangles.	1
21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.	3
22.0 Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.	2

**Appendix C**  
**Summary Tables**

## English Language Arts Summary Tables

### Grade 3 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	7	15.25	1.28	34%	0.23	62%	0.19	3%	0.05	Yes
<b>Reading for Understanding</b>	13	17.75	2.05	21%	0.22	59%	0.18	20%	0.14	Yes
<b>Language</b>	13	16.75	2.25	2%	0.05	93%	0.07	5%	0.05	Yes
<b>Total</b>	33	16.58	1.26	19%	0.16	72%	0.18	9%	0.09	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	7	1	3	43%	15.25	1.28	Yes
		2	4	57%			
		3	0	0%			
<b>Reading for Understanding</b>	13	1	5	38%	17.75	2.05	Yes
		2	6	46%			
		3	2	15%			
<b>Language</b>	13	1	10	77%	16.75	2.25	Yes
		2	2	15%			
		3	1	8%			
<b>Total</b>	33	1	18	55%	16.58	1.26	Yes
		2	12	36%			
		3	3	9%			

**Grade 3 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	7	15.25	1.28	6.75	0.46	96%	0.07	Yes
<b>Reading for Understanding</b>	13	17.75	2.05	8.63	0.74	66%	0.06	Yes
<b>Language</b>	13	16.75	2.25	10.00	1.69	77%	0.13	Yes
<b>Total</b>	33	16.58	1.26	8.46	1.63	80%	0.15	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	7	31%	0.03	0.80	0.04	Yes
<b>Reading for Understanding</b>	13	36%	0.03	0.73	0.04	Yes
<b>Language</b>	13	34%	0.04	0.81	0.02	Yes
<b>Total</b>	33	33%	0.02	0.78	0.04	

Grade 4 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	5	12.13	1.13	33%	0.29	61%	0.33	7%	0.08	Yes
<b>Reading for Understanding</b>	11	18.13	4.02	37%	0.19	56%	0.17	7%	0.10	Yes
<b>Language</b>	15	19.50	4.21	20%	0.11	74%	0.08	6%	0.08	Yes
<b>Total</b>	31	16.58	3.92	30%	0.09	64%	0.09	7%	0.01	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	5	1	1	20%	12.13	1.13	Yes
		2	4	80%			
		3	0	0%			
<b>Reading for Understanding</b>	11	1	1	9%	18.13	4.02	Yes
		2	6	55%			
		3	4	36%			
<b>Language</b>	15	1	8	53%	19.50	4.21	Yes
		2	3	20%			
		3	4	27%			
<b>Total</b>	31	1	10	32%	16.58	3.92	
		2	13	42%			
		3	8	26%			

Grade 4 English Language Arts (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	5	12.13	1.13	3.63	0.74	73%	0.15	Yes
Reading for Understanding	11	18.13	4.02	7.75	1.58	70%	0.14	Yes
Language	15	19.50	4.21	11.38	2.26	76%	0.15	Yes
<b>Total</b>	31	16.58	3.92	7.58	3.88	73%	0.03	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	5	24%	0.01	0.76	0.05	Yes
Reading for Understanding	11	36%	0.07	0.73	0.07	Yes
Language	15	39%	0.08	0.80	0.04	Yes
<b>Total</b>	31	33%	0.08	0.76	0.03	

Grade 5 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	4	10.88	1.81	34%	0.26	59%	0.22	7%	0.11	Yes
<b>Reading for Understanding</b>	12	17.88	3.94	48%	0.26	50%	0.25	1%	0.03	Yes
<b>Language</b>	14	22.50	3.59	26%	0.14	70%	0.10	4%	0.05	Yes
<b>Total</b>	30	17.08	5.85	36%	0.11	60%	0.10	4%	0.03	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	4	1	2	50%	10.88	1.81	Yes
		2	2	50%			
		3	0	0%			
<b>Reading for Understanding</b>	12	1	0	0%	17.88	3.94	Yes
		2	6	50%			
		3	6	50%			
<b>Language</b>	14	1	6	43%	22.50	3.59	Yes
		2	4	29%			
		3	4	29%			
<b>Total</b>	30	1	8	27%	17.08	5.85	
		2	12	40%			
		3	10	33%			

**Grade 5 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	4	10.88	1.81	3.75	0.46	94%	0.12	Yes
<b>Reading for Understanding</b>	12	17.88	3.94	8.75	1.98	73%	0.17	Yes
<b>Language</b>	14	22.50	3.59	11.13	2.30	79%	0.16	Yes
<b>Total</b>	30	17.08	5.85	7.88	3.76	82%	0.11	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Standards		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	4	21%	0.03	0.83	0.06	Yes
<b>Reading for Understanding</b>	12	35%	0.06	0.75	0.09	Yes
<b>Language</b>	14	44%	0.07	0.74	0.05	Yes
<b>Total</b>	30	33%	0.11	0.77	0.05	

Grade 6 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	4	10.50	1.60	35%	0.20	62%	0.21	4%	0.05	Yes
<b>Reading for Understanding</b>	16	24.63	2.67	41%	0.25	52%	0.26	7%	0.06	Yes
<b>Language</b>	11	19.63	4.57	33%	0.13	63%	0.10	3%	0.05	Yes
<b>Total</b>	31	18.25	7.16	36%	0.04	59%	0.06	5%	0.02	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	4	1 2 3	1 3 0	25% 75% 0%	10.50	1.60	Yes
<b>Reading for Understanding</b>	16	1 2 3	5 2 9	31% 13% 56%	24.63	2.67	Yes
<b>Language</b>	11	1 2 3	5 2 4	45% 18% 36%	19.63	4.57	Yes
<b>Total</b>	31	1 2 3	11 7 13	35% 23% 42%	18.25	7.16	

Grade 6 English Language Arts (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	4	10.50	1.60	3.75	0.46	94%	0.12	Yes
<b>Reading for Understanding</b>	16	24.63	2.67	12.88	2.03	80%	0.13	Yes
<b>Language</b>	11	19.63	4.57	9.50	1.93	86%	0.18	Yes
<b>Total</b>	31	18.25	7.16	8.71	4.61	87%	0.07	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Vocabulary</b>	4	19%	0.03	0.79	0.06	Yes
<b>Reading for Understanding</b>	16	45%	0.06	0.74	0.06	Yes
<b>Language</b>	11	36%	0.08	0.78	0.03	Yes
<b>Total</b>	31	33%	0.13	0.77	0.03	

Grade 7 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	3	8.75	1.04	64%	0.31	33%	0.29	3%	0.06	Weaker
<b>Reading for Understanding</b>	12	26.13	3.76	46%	0.20	29%	0.17	26%	0.09	Yes
<b>Language</b>	13	22.25	3.24	22%	0.11	77%	0.12	2%	0.02	Yes
<b>Total</b>	28	19.04	9.12	44%	0.21	46%	0.26	10%	0.13	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	3	1 2 3	1 2 0	33% 67% 0%	8.75	1.04	Yes
<b>Reading for Understanding</b>	12	1 2 3	2 2 8	17% 17% 67%	26.13	3.76	Yes
<b>Language</b>	13	1 2 3	7 2 4	54% 15% 31%	22.25	3.24	Yes
<b>Total</b>	28	1 2 3	10 6 12	36% 21% 43%	19.04	9.12	

**Grade 7 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	8.75	1.04	3	0	100%	0	Yes
Reading for Understanding	12	26.13	3.76	9.88	1.96	82%	0.16	Yes
Language	13	22.25	3.24	11.25	1.83	87%	0.14	Yes
<b>Total</b>	28	19.04	9.12	8.04	4.42	90%	0.09	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	15%	0.02	0.70	0.06	Yes
Reading for Understanding	12	46%	0.05	0.67	0.06	Yes*
Language	13	39%	0.06	0.82	0.03	Yes
<b>Total</b>	28	33%	0.16	0.73	0.08	

Grade 8 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	3	7.25	2.19	46%	0.36	54%	0.36	0%	0.00	Yes
<b>Reading for Understanding</b>	14	24.75	0.89	65%	0.24	33%	0.23	3%	0.03	Weaker
<b>Language</b>	10	24.13	1.89	45%	0.17	52%	0.17	3%	0.03	Yes
<b>Total</b>	27	18.71	9.93	52%	0.11	46%	0.11	2%	0.01	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	3	1 2 3	0 2 0	0% 100% 0%	7.25	2.19	Yes
<b>Reading for Understanding</b>	14	1 2 3 4	0 3 9 2	0% 21% 64% 14%	24.75	0.89	Yes
<b>Language</b>	10	1 2 3	2 3 5	20% 30% 50%	24.13	1.89	Yes
<b>Total</b>	27	1 2 3 4	2 9 14 2	7% 33% 52% 7%	18.71	9.93	

**Grade 8 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	7.25	2.19	2.88	0.35	96%	0.12	Yes
Reading for Understanding	14	24.75	0.89	12.00	0.76	86%	0.05	Yes
Language	10	24.13	1.89	9.00	0.93	90%	0.09	Yes
<b>Total</b>	<b>27</b>	<b>18.71</b>	<b>9.93</b>	<b>7.96</b>	<b>4.65</b>	<b>91%</b>	<b>0.05</b>	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	13%	0.03	0.77	0.11	Yes
Reading for Understanding	14	44%	0.02	0.78	0.05	Yes
Language	10	43%	0.02	0.77	0.06	Yes
<b>Total</b>	<b>27</b>	<b>33%</b>	<b>0.18</b>	<b>0.77</b>	<b>0.01</b>	

**Grade 9 English Language Arts**

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	3	8.13	2.47	16%	0.14	77%	0.20	7%	0.16	Yes
<b>Reading for Understanding</b>	19	25.00	3.07	32%	0.17	64%	0.22	5%	0.07	Yes
<b>Language</b>	12	26.25	2.38	28%	0.19	52%	0.13	20%	0.11	Yes
<b>Total</b>	34	19.79	10.12	25%	0.08	64%	0.13	11%	0.08	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	3	1	1	33%	8.13	2.47	Yes
		2	2	67%			
		3	0	0%			
<b>Reading for Understanding</b>	19	1	1	5%	25.00	3.07	Yes
		2	7	37%			
		3	11	58%			
<b>Language</b>	12	1	5	42%	26.25	2.38	Yes
		2	3	25%			
		3	4	33%			
<b>Total</b>	34	1	7	21%	19.79	10.12	
		2	12	35%			
		3	15	44%			

**Grade 9 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	8.13	2.47	2.88	0.35	96%	0.12	Yes
Reading for Understanding	19	25.00	3.07	13.88	1.46	73%	0.08	Yes
Language	12	26.25	2.38	10.38	1.19	86%	0.10	Yes
<b>Total</b>	34	19.79	10.12	9.04	5.62	85%	0.11	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	14%	0.05	0.70	0.08	Yes*
Reading for Understanding	19	42%	0.04	0.77	0.06	Yes
Language	12	44%	0.04	0.76	0.04	Yes
<b>Total</b>	34	33%	0.17	0.74	0.04	

**Grade 10 English Language Arts**

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	3	7.00	1.69	15%	0.17	71%	0.18	14%	0.20	Yes
<b>Reading for Understanding</b>	19	29.38	1.19	23%	0.09	70%	0.11	8%	0.09	Yes
<b>Language</b>	12	26.75	4.40	18%	0.08	65%	0.10	17%	0.12	Yes
<b>Total</b>	34	21.04	12.23	19%	0.04	69%	0.03	13%	0.05	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	3	1 2 3	1 2 0	33% 67% 0%	7.00	1.69	Yes
<b>Reading for Understanding</b>	19	1 2 3	2 8 9	11% 42% 47%	29.38	1.19	Yes
<b>Language</b>	12	1 2 3	5 4 3	42% 33% 25%	26.75	4.40	Yes
<b>Total</b>	34	1 2 3	8 14 12	24% 41% 35%	21.04	12.23	

**Grade 10 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	7.00	1.69	2.88	0.35	96%	0.12	Yes
Reading for Understanding	19	29.38	1.19	14.75	1.39	78%	0.07	Yes
Language	12	26.75	4.40	11.00	0.76	92%	0.06	Yes
<b>Total</b>	<b>34</b>	<b>21.04</b>	<b>12.23</b>	<b>9.54</b>	<b>6.07</b>	<b>88%</b>	<b>0.10</b>	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	11%	0.03	0.80	0.07	Yes
Reading for Understanding	19	47%	0.03	0.76	0.08	Yes
Language	12	42%	0.05	0.80	0.03	Yes
<b>Total</b>	<b>34</b>	<b>33%</b>	<b>0.19</b>	<b>0.79</b>	<b>0.02</b>	

Grade 11 English Language Arts

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Vocabulary</b>	3	7.38	1.60	37%	0.21	59%	0.18	4%	0.06	Yes
<b>Reading for Understanding</b>	16	31.88	3.36	28%	0.15	64%	0.10	9%	0.09	Yes
<b>Language</b>	9	24.63	6.48	55%	0.10	40%	0.10	4%	0.04	Yes*
<b>Total</b>	28	21.29	12.59	40%	0.14	54%	0.12	6%	0.02	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Vocabulary</b>	3	1 2 3	0 3 0	0% 100% 0%	7.38	1.60	Yes
<b>Reading for Understanding</b>	16	1 2 3	0 7 9	0% 44% 56%	31.88	3.36	Yes
<b>Language</b>	9	1 2 3	1 3 5	11% 33% 56%	24.63	6.48	Yes
<b>Total</b>	28	1 2 3	1 13 14	4% 46% 50%	21.29	12.59	

**Grade 11 English Language Arts (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Standards				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	7.38	1.60	2.13	0.35	71%	0.12	Yes
Reading for Understanding	16	31.88	3.36	12.38	1.30	77%	0.08	Yes
Language	9	24.63	6.48	8.25	0.71	92%	0.08	Yes
<b>Total</b>	<b>28</b>	<b>21.29</b>	<b>12.59</b>	<b>7.58</b>	<b>5.16</b>	<b>80%</b>	<b>0.11</b>	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Vocabulary	3	12%	0.03	0.86	0.11	Yes
Reading for Understanding	16	50%	0.06	0.76	0.03	Yes
Language	9	38%	0.07	0.76	0.04	Yes
<b>Total</b>	<b>28</b>	<b>33%</b>	<b>0.20</b>	<b>0.79</b>	<b>0.06</b>	

## Science Summary Tables

### Grade 5 Science

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Physical Science</b>	11	15.50	1.41	19%	0.11	44%	0.15	38%	0.14	Yes
<b>Life Science</b>	12	14.38	1.19	33%	0.15	58%	0.11	8%	0.19	Yes
<b>Earth Science</b>	12	15.75	1.04	22%	0.08	65%	0.11	13%	0.14	Yes
<b>Investigation and Experimentation</b>	8	5.75	1.58	56%	0.30	44%	0.30	0%	0.00	Yes*
<b>Total</b>	43	12.84	4.77	32%	0.17	53%	0.11	15%	0.16	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Physical Science</b>	11	1	8	73%	15.50	1.41	Yes
		2	2	18%			
		3	1	9%			
<b>Life Science</b>	12	1	7	58%	14.38	1.19	Yes
		2	5	42%			
		3	0	0%			
<b>Earth Science</b>	12	1	9	75%	15.75	1.04	Yes
		2	2	17%			
		3	1	8%			
<b>Investigation and Experimentation</b>	8	1	0	0%	5.75	1.58	Yes*
		2	5	63%			
		3	3	38%			
<b>Total</b>	43	1	24	56%	12.84	4.77	
		2	14	33%			
		3	5	12%			

Grade 5 Science (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Physical Science	11	15.50	1.41	10.13	0.83	92%	0.08	Yes
Life Science	12	14.38	1.19	11.75	0.46	98%	0.04	Yes
Earth Science	12	15.75	1.04	11.13	0.99	93%	0.08	Yes
Investigation and Experimentation	8	5.75	1.58	4.25	0.89	53%	0.11	Yes
<b>Total</b>	43	12.84	4.77	9.31	3.44	84%	0.21	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Physical Science	11	30%	0.03	0.82	0.04	Yes
Life Science	12	28%	0.01	0.86	0.03	Yes
Earth Science	12	31%	0.02	0.83	0.01	Yes
Investigation and Experimentation	8	11%	0.03	0.87	0.10	Yes
<b>Total</b>	43	25%	0.09	0.84	0.03	

Grade 8 Science

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Motion</b>	17	25.63	3.78	20%	0.13	62%	0.11	18%	0.13	Yes
<b>Earth Science</b>	4	7.50	0.76	0%	0.00	89%	0.18	11%	0.18	Yes
<b>Matter</b>	17	27.38	3.74	12%	0.08	64%	0.12	24%	0.18	Yes
<b>Investigation and Experimentation</b>	5	5.00	2.45	63%	0.29	34%	0.29	2%	0.06	Weaker
<b>Total</b>	43	16.38	11.76	24%	0.28	62%	0.22	14%	0.09	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Motion</b>	17	1	11	65%	25.63	3.78	Yes
		2	6	35%			
		3	0	0%			
<b>Earth Science</b>	4	1	4	100%	7.50	0.76	Yes
		2	0	0%			
		3	0	0%			
<b>Matter</b>	17	1	14	82%	27.38	3.74	Yes
		2	3	18%			
		3	0	0%			
<b>Investigation and Experimentation</b>	5	1	0	0%	5.00	2.45	Yes*
		2	2	40%			
		3	3	60%			
<b>Total</b>	43	1	29	67%	16.38	11.76	
		2	11	26%			
		3	3	7%			

Grade 8 Science (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Motion</b>	17	25.63	3.78	15.88	1.36	93%	0.08	Yes
<b>Earth Science</b>	4	7.50	0.76	3.50	0.76	88%	0.19	Yes
<b>Matter</b>	17	27.38	3.74	15.75	0.71	93%	0.04	Yes
<b>Investigation and Experimentation</b>	5	5.00	2.45	3.00	1.31	60%	0.26	Yes
<b>Total</b>	43	16.38	11.76	9.53	7.26	83%	0.16	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Motion</b>	17	39%	0.03	0.78	0.04	Yes
<b>Earth Science</b>	4	12%	0.01	0.82	0.05	Yes
<b>Matter</b>	17	42%	0.03	0.78	0.03	Yes
<b>Investigation and Experimentation</b>	5	8%	0.04	0.74	0.09	Yes
<b>Total</b>	43	25%	0.18	0.78	0.03	

## High School Science

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster	Hits			Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
Cell Biology and Genetics	18	24.50	1.31	6%	0.04	78%	0.12	16%	0.13	Yes
Evolution and Ecology	18	25.88	6.08	18%	0.07	43%	0.08	39%	0.10	Yes
Physiology	8	10.00	1.20	56%	0.11	37%	0.09	7%	0.10	Yes*
Investigation and Experimentation	8	6.13	5.17	34%	0.27	53%	0.17	13%	0.13	Yes
<b>Total</b>	52	16.63	10.03	28%	0.22	53%	0.18	19%	0.14	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
Cell Biology and Genetics	18	1 2 3	14 4 0	78% 22%	24.50	1.31	Yes
Evolution and Ecology	18	1 2 3	11 7 0	61% 39% 0%	25.88	6.08	Yes
Physiology	8	1 2 3	3 5 0	38% 63%	10.00	1.20	Yes
Investigation and Experimentation	8	1 2 3	1 6 1	13% 75% 13%	6.13	5.17	Yes
<b>Total</b>	52	1 2 3	29 22 1	56% 42% 2%	16.63	10.03	

## High School Science (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Cell Biology and Genetics</b>	18	24.50	1.31	16.13	2.47	90%	0.14	Yes
<b>Evolution and Ecology</b>	18	25.88	6.08	14.88	2.95	83%	0.16	Yes
<b>Physiology</b>	8	10.00	1.20	7.25	1.16	91%	0.15	Yes
<b>Investigation and Experimentation</b>	8	6.13	5.17	3.13	1.73	39%	0.22	Weaker
<b>Total</b>	52	16.63	10.03	10.34	6.21	75%	0.25	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
<b>Cell Biology and Genetics</b>	18	37%	0.02	0.81	0.03	Yes
<b>Evolution and Ecology</b>	18	39%	0.08	0.80	0.02	Yes
<b>Physiology</b>	8	15%	0.02	0.80	0.02	Yes
<b>Investigation and Experimentation</b>	8	9%	0.08	0.81	0.12	Yes
<b>Total</b>	52	25%	0.15	0.80	0.01	

## Mathematics Summary Tables

### Grade 3 Mathematics

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Number Sense</b>	15	27.13	6.17	24%	0.09	68%	0.06	9%	0.10	Yes
<b>Algebra and Data Analysis</b>	9	14.75	1.67	30%	0.13	61%	0.13	10%	0.10	Yes
<b>Measurement and Geometry</b>	9	10.38	1.06	27%	0.09	67%	0.11	6%	0.16	Yes
<b>Mathematical Reasoning*</b>	11	48.00	0.00	83%	0.10	17%	0.10	0%	0.00	Weaker
<b>Total</b>	33	17.42	8.69	27%	0.03	65%	0.04	8%	0.02	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Number Sense</b>	15	1	7	47%	27.13	6.17	Yes
		2	8	53%			
		3	0	0%			
<b>Algebra and Data Analysis</b>	9	1	3	33%	14.75	1.67	Yes
		2	6	67%			
		3	0	0%			
<b>Measurement and Geometry</b>	9	1	6	67%	10.38	1.06	Yes
		2	3	33%			
		3	0	0%			
<b>Mathematical Reasoning*</b>	11	1	0	0%	48.00	0.00	Yes
		2	9	82%			
		3	2	18%			
<b>Total</b>	33	1	16	48%	17.42	8.69	
		2	17	52%			
		3	0	0%			

**Grade 3 Mathematics (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	15	27.13	6.17	13.13	1.46	0.88	0.10	Yes
Algebra and Data Analysis	9	14.75	1.67	8.13	0.64	0.90	0.07	Yes
Measurement and Geometry	9	10.38	1.06	8.00	0.76	0.89	0.08	Yes
Mathematical Reasoning*	11	48.00	0.00	7.63	1.41	0.69	0.13	Yes
<b>Total</b>	33	17.42	8.69	9.75	2.92	0.89	0.01	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	15	51%	0.06	0.72	0.05	Yes
Algebra and Data Analysis	9	29%	0.04	0.80	0.03	Yes
Measurement and Geometry	9	20%	0.03	0.86	0.06	Yes
Mathematical Reasoning*	11	N/A	N/A	0.56	0.07	Weaker
<b>Total</b>	33	33%	0.16	0.80	0.07	

## Grade 4 Mathematics

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster	Hits			Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
Number Sense	16	26.75	4.53	11%	0.04	70%	0.20	19%	0.19	Yes
Algebra and Data Analysis	12	18.38	2.13	8%	0.07	68%	0.22	24%	0.25	Yes
Measurement and Geometry	10	10.88	1.25	21%	0.12	70%	0.17	9%	0.21	Yes
Mathematical Reasoning*	11	47.88	0.35	78%	0.18	21%	0.17	1%	0.02	Weaker
<b>Total</b>	38	18.67	7.94	13%	0.07	69%	0.01	17%	0.07	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
Number Sense	16	1	13	81%	26.75	4.53	Yes
		2	3	19%			
		3	0	0%			
Algebra and Data Analysis	12	1	8	67%	18.38	2.13	Yes
		2	3	25%			
		3	1	8%			
Measurement and Geometry	10	1	5	50%	10.88	1.25	Yes
		2	5	50%			
		3	0	0%			
Mathematical Reasoning*	11	1	0	0%	47.88	0.35	Yes
		2	9	82%			
		3	2	18%			
<b>Total</b>	38	1	26	68%	18.67	7.94	
		2	11	29%			
		3	1	3%			

Grade 4 Mathematics (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	16	26.75	4.53	14.13	2.10	88%	0.13	Yes
Algebra and Data Analysis	12	18.38	2.13	9.25	1.04	77%	0.09	Yes
Measurement and Geometry	10	10.88	1.25	9.63	0.52	96%	0.05	Yes
Mathematical Reasoning*	11	47.88	0.35	8.25	1.49	75%	0.14	Yes
<b>Total</b>	38	18.67	7.94	11.00	2.71	87%	0.10	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	16	48%	0.05	0.77	0.04	Yes
Algebra and Data Analysis	12	33%	0.04	0.74	0.05	Yes
Measurement and Geometry	10	20%	0.03	0.92	0.08	Yes
Mathematical Reasoning*	11	N/A	N/A	0.59	0.08	Weaker
<b>Total</b>	38	33%	0.14	0.81	0.09	

**Grade 5 Mathematics**

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster	Hits			Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
Number Sense	9	21.13	0.83	36%	0.03	60%	0.09	5%	0.08	Yes
Algebra and Data Analysis	9	20.88	3.44	42%	0.17	47%	0.13	10%	0.09	Yes
Measurement and Geometry	6	10.13	0.35	23%	0.14	64%	0.18	13%	0.22	Yes
Mathematical Reasoning*	11	47.88	0.35	85%	0.14	15%	0.14	0%	0.00	Weaker
<b>Total</b>	24	17.38	6.28	34%	0.10	57%	0.09	9%	0.04	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
Number Sense	9	1	6	67%	21.13	0.83	Yes
		2	3	33%			
		3	0	0%			
Algebra and Data Analysis	9	1	3	33%	20.88	3.44	Yes
		2	6	67%			
		3	0	0%			
Measurement and Geometry	6	1	3	50%	10.13	0.35	Yes
		2	3	50%			
		3	0	0%			
Mathematical Reasoning*	11	1	0	0%	47.88	0.35	Yes
		2	9	82%			
		3	2	18%			
<b>Total</b>	24	1	12	50%	17.38	6.28	
		2	12	50%			
		3	0	0%			

**Grade 5 Mathematics (Continued)**

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	9	21.13	0.83	7.50	0.93	83%	0.10	Yes
Algebra and Data Analysis	9	20.88	3.44	8.00	1.20	89%	0.13	Yes
Measurement and Geometry	6	10.13	0.35	5.75	0.46	96%	0.08	Yes
Mathematical Reasoning*	11	47.88	0.35	6.13	1.64	56%	0.15	Yes
<b>Total</b>	24	17.38	6.28	7.08	1.18	89%	0.06	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	9	41%	0.02	0.77	0.04	Yes
Algebra and Data Analysis	9	40%	0.04	0.72	0.05	Yes
Measurement and Geometry	6	20%	0.01	0.83	0.05	Yes
Mathematical Reasoning*	11	N/A	N/A	0.55	0.12	Weaker
<b>Total</b>	24	33%	0.12	0.77	0.05	

**Grade 6 Mathematics**

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Number Sense</b>	8	24.63	4.90	59%	0.21	38%	0.19	3%	0.02	Yes*
<b>Algebra and Data Analysis</b>	14	24.25	4.80	34%	0.18	52%	0.15	14%	0.07	Yes
<b>Measurement and Geometry</b>	5	8.13	1.64	52%	0.17	43%	0.09	6%	0.10	Yes*
<b>Mathematical Reasoning*</b>	13	54.00	0.00	68%	0.15	32%	0.15	0%	0.01	Weaker
<b>Total</b>	27	19.00	9.42	48%	0.13	44%	0.07	7%	0.06	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Number Sense</b>	8	1	2	25%	24.63	4.90	Yes
		2	6	75%			
		3	0	0%			
<b>Algebra and Data Analysis</b>	14	1	6	43%	24.25	4.80	Yes
		2	8	57%			
		3	0	0%			
<b>Measurement and Geometry</b>	5	1	2	40%	8.13	1.64	Yes
		2	3	60%			
		3	0	0%			
<b>Mathematical Reasoning*</b>	13	1	0	0%	54.00	0.00	Yes
		2	10	77%			
		3	3	23%			
<b>Total</b>	27	1	10	37%	19.00	9.42	
		2	17	63%			
		3	0	0%			

Grade 6 Mathematics (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	8	24.63	4.90	8.00	0.00	100%	0.00	Yes
Algebra and Data Analysis	14	24.25	4.80	10.75	2.19	77%	0.16	Yes
Measurement and Geometry	5	8.13	1.64	4.13	0.83	83%	0.17	Yes
Mathematical Reasoning*	13	54.00	0.00	8.38	3.93	64%	0.30	Yes
<b>Total</b>	<b>27</b>	<b>19.00</b>	<b>9.42</b>	<b>7.63</b>	<b>3.33</b>	<b>86%</b>	<b>0.12</b>	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	8	43%	0.06	0.73	0.05	Yes
Algebra and Data Analysis	14	43%	0.08	0.77	0.04	Yes
Measurement and Geometry	5	14%	0.03	0.80	0.04	Yes
Mathematical Reasoning*	13			0.62	0.21	Yes*
<b>Total</b>	<b>27</b>	<b>33%</b>	<b>0.16</b>	<b>0.77</b>	<b>0.03</b>	

**Grade 7 Mathematics**

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster	Hits			Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
Number Sense	12	22.13	5.51	31%	0.13	55%	0.10	14%	0.16	Yes
Algebra and Data Analysis	15	24.75	1.58	37%	0.23	56%	0.24	7%	0.11	Yes
Measurement and Geometry	10	12.00	0.93	42%	0.26	44%	0.25	14%	0.18	Yes
Mathematical Reasoning*	14	53.50	1.41	57%	0.20	42%	0.19	1%	0.04	Yes*
<b>Total</b>	37	19.63	6.73	37%	0.05	51%	0.07	12%	0.04	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
Number Sense	12	1	6	50%	22.13	5.51	Yes
		2	6	50%			
		3	0	0%			
Algebra and Data Analysis	15	1	2	13%	24.75	1.58	Yes
		2	13	87%			
		3	0	0%			
Measurement and Geometry	10	1	1	10%	12.00	0.93	Yes
		2	9	90%			
		3	0	0%			
Mathematical Reasoning*	14	1	0	0%	53.50	1.41	Yes
		2	12	86%			
		3	2	14%			
<b>Total</b>	37	1	9	24%	19.63	6.73	
		2	28	76%			
		3	0	0%			

Grade 7 Mathematics (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	12	22.13	5.51	10.63	1.51	89%	0.13	Yes
Algebra and Data Analysis	15	24.75	1.58	12.63	1.77	84%	0.12	Yes
Measurement and Geometry	10	12.00	0.93	8.38	1.51	84%	0.15	Yes
Mathematical Reasoning*	14	53.50	1.41	7.63	5.34	54%	0.38	Yes
<b>Total</b>	37	19.63	6.73	10.54	2.13	85%	0.03	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Sense	12	37%	0.05	0.73	0.03	Yes
Algebra and Data Analysis	15	42%	0.04	0.78	0.04	Yes
Measurement and Geometry	10	20%	0.02	0.81	0.07	Yes
Mathematical Reasoning*	14	N/A	N/A	0.70	0.23	Yes
<b>Total</b>	37	33%	0.11	0.77	0.04	

Algebra I

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster	Hits			Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Number Properties, Operations, and Linear Equations</b>	5	16.50	1.20	46%	0.11	50%	0.12	4%	0.04	Yes
<b>Graphing and Systems of Linear Equations</b>	4	15.00	1.69	23%	0.17	70%	0.17	7%	0.09	Yes
<b>Quadratics and Polynomials</b>	8	20.88	1.96	46%	0.12	39%	0.10	15%	0.12	Yes
<b>Functions and Rational Expressions</b>	5	12.00	1.93	40%	0.22	45%	0.23	15%	0.14	Yes
<b>Total</b>	22	16.09	3.70	38%	0.11	51%	0.13	10%	0.06	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster	Level by Reporting Cluster				Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Number Properties, Operations, and Linear Equations</b>	5	1	2	40%	16.50	1.20	Yes
		2	2	40%			
		3	1	20%			
<b>Graphing and Systems of Linear Equations</b>	4	1	0	0%	15.00	1.69	Yes
		2	4	100%			
		3	0	0%			
<b>Quadratics and Polynomials</b>	8	1	1	13%	20.88	1.96	Yes
		2	4	50%			
		3	3	38%			
<b>Functions and Rational Expressions</b>	5	1	0	0%	12.00	1.93	Yes
		2	4	80%			
		3	1	20%			
<b>Total</b>	22	1	3	14%	16.09	3.70	
		2	14	64%			
		3	5	23%			

Algebra I (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Number Properties, Operations, and Linear Equations	5	16.50	1.20	5.00	0.00	100%	0.00	Yes
Graphing and Systems of Linear Equations	4	15.00	1.69	4.00	0.00	100%	0.00	Yes
Quadratics and Polynomials	8	20.88	1.96	7.13	0.35	89%	0.04	Yes
Functions and Rational Expressions	5	12.00	1.93	4.38	0.74	88%	0.15	Yes
<b>Total</b>	22	16.09	3.70	5.13	1.40	94%	0.07	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Number Properties, Operations, and Linear Equations	5	26%	0.01	0.72	0.06	Yes
Graphing and Systems of Linear Equations	4	23%	0.02	0.80	0.03	Yes
Quadratics and Polynomials	8	32%	0.02	0.80	0.06	Yes
Functions and Rational Expressions	5	19%	0.02	0.78	0.06	Yes
<b>Total</b>	22	25%	0.06	0.78	0.04	

## Geometry

**Table C1: Depth-of-Knowledge Consistency between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Depth-of-Knowledge Levels						DOK Consistency
	Standards	Mean	Standard Deviation	% Under	Standard Deviation	% At	Standard Deviation	% Above	Standard Deviation	
<b>Logic and Geometric Proofs</b>	7	24.13	5.62	62%	0.18	32%	0.17	6%	0.06	Weaker
<b>Volume and Area Formulas</b>	4	13.88	3.14	47%	0.21	43%	0.13	10%	0.10	Yes
<b>Angle Relationships, Constructions, and Lines</b>	6	17.63	3.02	41%	0.09	51%	0.09	7%	0.06	Yes
<b>Trigonometry</b>	5	13.25	1.49	47%	0.12	41%	0.15	12%	0.15	Yes
<b>Total</b>	22	17.22	4.99	49%	0.09	42%	0.08	9%	0.03	

**Table C2: Categorical Concurrence between Reporting Clusters and Assessment**

Reporting Cluster		Level by Reporting Cluster			Hits		Categorical Concurrence
	Standards	Level	Standards by Level	Percent by Level	Mean	Standard Deviation	
<b>Logic and Geometric Proofs</b>	7	1	1	14%	24.13	5.62	Yes
		2	1	14%			
		3	5	71%			
<b>Volume and Area Formulas</b>	4	1	1	25%	13.88	3.14	Yes
		2	3	75%			
		3	0	0%			
<b>Angle Relationships, Constructions, and Lines</b>	6	1	1	17%	17.63	3.02	Yes
		2	3	50%			
		3	2	33%			
<b>Trigonometry</b>	5	1	2	40%	13.25	1.49	Yes
		2	2	40%			
		3	1	20%			
<b>Total</b>	22	1	5	23%	17.22	4.99	
		2	9	41%			
		3	8	36%			

Geometry (Continued)

**Table C3: Range-of-Knowledge Correspondence between Reporting Clusters and Assessment**

Reporting Cluster		Hits		Range of Reporting Cluster				Range of Knowledge
				Number of Standards Hit		% of Total		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Logic and Geometric Proofs	7	24.13	5.62	5.88	0.99	84%	0.14	Yes
Volume and Area Formulas	4	13.88	3.14	4.00	0.00	100%	0.00	Yes
Angle Relationships, Constructions, and Lines	6	17.63	3.02	5.75	0.46	96%	0.08	Yes
Trigonometry	5	13.25	1.49	4.75	0.46	95%	0.09	Yes
<b>Total</b>	22	17.22	4.99	5.09	0.89	94%	0.07	

**Table C4: Balance of Representation between Standards within Reporting Clusters**

Reporting Cluster		Balance Index				Balance of Representation
		Percent of Total Hits		Index		
	Standards	Mean	Standard Deviation	Mean	Standard Deviation	
Logic and Geometric Proofs	7	35%	0.05	0.77	0.08	Yes
Volume and Area Formulas	4	20%	0.04	0.70	0.09	Yes
Angle Relationships, Constructions, and Lines	6	26%	0.04	0.76	0.03	Yes
Trigonometry	5	19%	0.02	0.83	0.05	Yes
<b>Total</b>	22	25%	0.07	0.76	0.05	

## **Appendix D**

### **Depth-of-Knowledge Levels by Item and Reviewers**

**English Language Arts Depth-of-Knowledge Levels by Item and Reviewers**

**Grade 3 English Language Arts**

**Table D1:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1	2	1	1	1	2	2	1	1
2	1	1	1	1	1	1	1	1
3	2	1	1	1	1	2	1	2
4	2	1	1	1	2	2	1	2
5	2	1	1	1	1	1	1	1
6								
7	2	1	1	2	1	1	1	1
8	3	2	2	2	2	2	2	2
9	2	2	1	2	2	2	2	2
10	1	1	1	1	1	1	1	1
11	3	2	1	3	2	2	2	2
12	1	1	1	1	1	1	1	1
13	1	1	1	2	1	2	1	2
14	3	2	2	3	2	2	2	3
15	2	1	2	2	2	1	2	2
16	1	1	2	1	2	1	2	2
17	3	3	2	2	2	2	2	2
18	2	1	1	1	2	1	1	2
19	1	1	1	1	1	1	1	1
20	2	2	2	2	2	2	1	3
21	3	2	2	2	2	3	2	2
22	2	1	2	2	2	2	2	2
23	3	3	2	2	2	2	2	3
24	3	3	2	3	3	3	2	3
25								
26								
27								
28								
29								
30								
31	2	2	1	2	2	2	2	2
32	2	3	1	2	2	3	2	2
33	1	1	1	1	1	1	2	1
34	1	1	1	1	1	1	1	1

**Grade 3 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
35	1	1	1	1	1	1	1	1
36	1	1	1	1	1	1	1	1
37	1	2	1	1	2	2	1	1
38	1	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1	1
40	2	3	2	2	2	3	2	3
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	2	2	2	1	1	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	1	1	1	1
48	2	2	1	2	2	1	1	2
49	2	1	1	1	1	1	1	2
50	2	1	1	1	2	1	1	2
51								
52								
53	2	1	1	1	1	1	1	1
54	2	1	1	1	1	2	1	2
55	2	2	1	2	2	1	1	2
56	2	1	1	1	2	2	2	2
57	1	1	1	1	1	1	1	1

## Grade 4 English Language Arts

**Table D2:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	2	1	1	1	1	1	1
2	2	2	1	1	2	2	1	2
3	2	2	1	1	2	1	1	2
4	2	2	1	1	2	2	1	2
5	2	2	1	1	2	2	1	2
6								
7	2	1	1	2	1	1	2	2
8	2	2	1	2	2	2	2	2
9	2	2	1	1	2	1	1	2
10	2	2	1	1	2	2	2	2
11	3	2	2	3	2	2	2	2
12	1	1	1	1	1	2	2	2
13	2	2	1	1	2	2	3	3
14	1	1	1	1	1	1	3	2
15	3	2	1	2	2	2	2	3
16	1	1	1	1	1	2	3	2
17	2	1	1	1	2	1	2	1
18	2	2	1	1	2	2	2	2
19	2	1	1	1	2	2	2	2
20	2	2	1	1	2	1	1	2
21	3	2	1	2	3	2	2	3
22	3	2	2	2	2	2	2	3
23	1	2	2	2	3	2	2	2
24	2	2	1	1	2	2	2	2
25	2	2	2	2	2	2	2	2
26	2	2	2	2	1	2	2	2
27	2	1	1	1	2	1	1	1
28								
29								
30								
31								
32								
33								
34	1	1	1	1	1	1	1	1
35	1	1	1	1	2	3	2	2
36	3	2	2	1	2	2	3	2

**Grade 4 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	2	1	1	2	1	1	1
38	1	3	3	2	3	3	2	3
39	1	1	1	1	1	1	1	1
40	2	2	2	2	3	3	3	3
41	1	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1	1
43	2	3	2	2	2	2	1	3
44	1	2	1	1	2	1	2	1
45	2	3	2	3	3	3	2	2
46	2	2	1	2	2	3	1	2
47	1	1	1	1	1	1	1	1
48								
49								
50	2	2	1	2	3	3	3	2
51	1	1	1	1	1	2	2	1
52	1	1	1	1	1	1	1	1
53	1	1	1	1	1	1	1	1
54	2	2	2	2	3	3	3	2
55	1	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1	1
57	1	2	1	2	2	2	2	2

## Grade 5 English Language Arts

**Table D3:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	1	1	1	2	1	1	1
2	1	1	1	1	1	1	1	2
3	2	2	1	1	1	1	1	1
4	2	2	1	1	1	1	1	1
5	2	1	1	2	2	2	1	2
6	1	1	1	2	2	2	1	2
7	2	1	1	2	1	1	2	2
8								
9	1	1	1	1	1	1	1	2
10	2	2	1	2	2	2	1	2
11	2	2	2	2	2	2	2	2
12	2	3	2	2	3	2	2	3
13	3	2	2	3	3	3	2	3
14	1	1	1	2	1	2	1	2
15	2	1	1	2	1	2	1	2
16	2	2	2	3	2	2	1	2
17	2	2	1	2	2	2	1	2
18	2	1	1	2	2	2	2	2
19	2	2	1	2	2	2	2	2
20	3	2	2	2	2	2	2	2
21	2	2	1	2	2	2	1	2
22	2	2	2	2	3	2	2	2
23	2	1	1	1	1	1	2	2
24	1	1	1	1	2	1	1	2
25	3	2	2	2	2	2	2	2
26	2	1	1	2	3	2	2	3
27	2	1	1	1	2	2	1	2
28								
29								
30								
31								
32								
33								
34	1	1	1	1	1	1	1	1
35	3	2	3	1	3	3	1	3

**Grade 5 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
36	1	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1	1
39	1	1	2	2	2	2	1	2
40	1	1	2	1	2	1	1	2
41	1	1	1	1	1	1	1	1
42	3	1	2	2	3	3	2	3
43	1	2	1	1	2	3	2	2
44	1	1	1	1	1	1	1	1
45	1	1	1	1	2	2	1	2
46	1	1	1	1	1	1	1	1
47	1	1	1	2	2	2	1	2
48	1	1	1	2	2	3	1	2
49	1	1	1	1	1	1	1	1
50	1	1	1	1	1	1	1	2
51	3	2	3	2	3	3	2	3
52	3	2	2	3	2	3	2	3
53	2	2	2	2	2	3	2	2
54	2	1	2	1	2	2	1	2
55								
56								
57	2	2	2	2	2	2	2	3

## Grade 6 English Language Arts

**Table D4:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	2	1	2	2	2	1	2
2	2	2	2	2	1	1	1	1
3	2	2	2	2	1	1	1	1
4								
5	1	2	1	2	2	2	1	2
6	2	2	2	2	1	2	2	2
7	1	1	1	1	1	1	3	1
8	1	1	1	1	1	1	1	1
9	3	3	3	2	3	2	1	3
10	3	3	3	2	3	2	1	3
11	3	2	3	2	3	3	2	3
12	3	3	3	3	1	3	2	3
13	2	2	1	2	2	2	1	2
14	2	2	2	2	3	2	2	2
15	2	1	1	2	1	2	1	1
16	2	1	2	1	1	2	1	1
17	2	2	3	2	1	2	2	1
18	3	2	3	2	1	3	2	1
19	3	2	3	2	3	2	2	1
20	2	1	2	2	1	2	1	1
21	1	1	1	1	1	1	1	1
22	3	3	3	3	1	3	2	3
23	3	2	2	2	3	3	2	2
24	3	3	3	2	3	3	2	3
25	2	1	2	2	2	2	2	2
26	1	2	1	2	1	1	2	1
27	3	1	1	1	2	2	1	1
28	2	1	1	1	1	2	1	1
29	1	1	3	1	1	2	2	1
30	1	2	3	2	1	2	2	2
31	3	1	1	2	1	2	2	2
32	1	1	2	2	1	1	2	1
33								
34								
35								

**Grade 6 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
36								
37								
38								
39	1	3	3	3	1	3	1	1
40	1	1	1	1	1	1	1	1
41	1	1	1	2	1	1	1	1
42	1	1	1	2	1	1	1	1
43	1	1	1	1	1	1	1	1
44	3	1	3	1	1	2	2	1
45	3	2	2	2	3	2	2	2
46	3	1	2	1	1	2	2	1
47	1	1	1	1	1	1	1	1
48	1	1	2	1	1	1	1	1
49	2	1	2	1	2	2	1	2
50	1	1	1	1	1	1	1	1
51	1	3	3	2	1	1	1	2
52	2	2	3	2	1	2	1	3
53								
54								
55	1	1	1	1	1	1	1	1
56	2	1	2	1	1	2	1	2
57	1	1	1	1	1	1	1	1
58	2	1	1	2	2	2	1	2
59	1	1	1	1	1	1	1	1
60	1	1	1	1	2	1	1	1
61	3	1	3	2	2	2	2	2
62	2	1	1	1	1	1	1	1
63	2	1	2	1	2	2	1	2

## Grade 7 English Language Arts

**Table D5:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	1	1	2	1	1	1	1
2								
3	1	1	2	2	1	1	1	1
4	1	1	1	2	1	2	1	1
5	1	2	1	2	1	2	1	1
6	3	2	3	2	3	3	3	2
7	3	2	3	2	3	3	2	2
8	3	2	3	2	3	3	2	2
9	3	3	3	3	2	3	2	3
10	2	3	3	2	2	2	2	2
11	1	1	1	2	1	1	1	1
12	1	1	2	2	1	1	1	1
13	1	1	1	1	1	1	1	1
14	1	1	1	1	1	2	1	1
15	2	2	2	2	1	2	2	2
16	1	1	1	1	1	2	1	1
17	3	2	2	2	1	2	1	1
18	3	2	3	2	3	3	2	2
19	3	2	3	2	3	3	2	2
20	3	3	3	3	3	3	2	2
21	1	2	1	2	1	2	2	1
22	2	2	3	2	1	2	2	2
23	1	1	1	2	1	1	1	1
24	1	1	2	1	1	2	1	1
25	1	1	1	1	1	2	1	1
26	1	1	1	1	1	2	1	1
27	2	1	1	2	1	1	2	1
28	1	1	1	1	1	1	1	1
29	1	2	2	1	1	2	1	1
30	3	3	3	3	2	3	2	2
31	3	3	3	3	3	3	2	2
32								
33								
34								
35								

**Grade 7 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
36								
37								
38	2	1	2	2	3	3	1	2
39	2	2	2	2	1	2	2	1
40	3	2	2	3	2	3	2	2
41	3	3	3	3	1	2	2	1
42	1	1	1	1	1	1	1	1
43	2	1	2	2	1	3	1	2
44	1	1	1	1	1	1	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	1	1	1	1
48	3	2	2	3	2	2	1	2
49	1	1	1	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	1	1	1	1	1
53	1	1	1	1	1	1	1	1
54								
55								
56	2	2	2	2	1	2	2	2
57	3	2	2	2	2	2	1	2
58	3	1	2	2	2	3	2	2
59	3	2	2	2	2	3	2	2
60	1	1	1	1	1	1	1	1
61	1	1	1	1	1	1	1	1
62	3	2	2	2	3	2	1	1
63	3	2	3	3	3	3	3	2

## Grade 8 English Language Arts

**Table D6:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	1	1	2	1	2	1	2
2								
3	1	1	1	2	1	2	1	1
4	3	1	1	3	1	2	1	1
5	2	2	2	2	1	2	2	2
6	3	2	2	2	2	2	2	2
7	3	2	2	3	2	2	1	2
8	3	3	2	2	1	2	2	1
9	2	1	1	2	1	1	1	1
10	3	3	2	3	2	2	2	2
11	3	3	2	3	2	3	2	1
12	3	3	3	3	3	3	2	2
13	1	1	1	1	1	2	1	1
14	2	1	1	1	1	2	1	1
15	2	3	2	2	2	3	2	2
16	2	1	1	2	1	2	1	2
17	3	2	3	3	2	2	2	2
18	3	3	2	2	1	3	1	2
19	3	3	3	2	2	2	2	1
20	1	1	1	1	1	1	1	1
21	3	3	3	3	2	2	2	2
22	3	3	2	3	2	3	2	2
23	3	1	1	1	2	2	1	1
24	3	3	3	2	2	2	2	2
25	3	1	1	1	1	2	2	1
26	3	1	1	1	1	1	1	1
27	3	2	1	1	1	2	2	1
28	3	3	3	3	2	3	2	2
29	3	1	1	1	1	3	1	1
30	3	2	3	2	1	2	2	2
31	2	1	2	2	2	2	1	2
32								
33								
34								
35								

**Grade 8 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
36								
37								
38	2	2	2	2	1	3	1	2
39	1	1	2	1	1	1	1	1
40	3	1	2	2	3	2	2	2
41	1	1	1	1	1	1	1	1
42	3	2	2	2	3	3	1	2
43	3	3	3	3	3	3	2	2
44	2	2	2	2	3	3	1	2
45	2	1	2	2	1	3	1	2
46	1	1	2	1	1	1	1	1
47	3	1	3	2	3	3	2	2
48	3	2	1	2	2	2	1	2
49	3	3	3	3	1	3	2	2
50	1	1	1	1	1	1	1	1
51	2	1	1	2	1	2	1	2
52	3	3	2	2	1	3	2	2
53	3	1	1	2	1	2	1	2
54	3	1	1	2	1	2	1	2
55								
56								
57	3	3	2	3	3	3	2	3
58	3	1	1	3	1	1	1	2
59	1	1	1	1	1	1	1	1
60	3	2	3	3	1	2	1	2
61	1	1	1	1	1	1	1	1
62	3	2	1	3	1	2	1	1
63	2	1	2	2	1	1	1	1

## Grade 9 English Language Arts

**Table D7:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	2	2	2	2	2	2
2	2	1	2	2	1	2	2	1
3	2	2	3	3	2	3	2	2
4								
5	2	2	2	3	2	3	3	2
6	2	2	2	2	2	2	2	3
7	2	3	2	2	2	3	2	3
8	2	2	2	2	2	2	3	2
9	1	2	2	3	3	3	2	2
10	1	2	2	2	3	3	2	3
11	1	2	2	2	2	2	3	2
12	2	3	2	3	3	3	3	3
13	2	2	1	2	2	2	1	2
14	3	3	2	3	3	3	3	3
15	3	3	3	3	3	3	3	3
16	1	1	1	1	2	1	1	3
17	1	1	2	3	2	1	2	2
18	1	3	1	1	2	1	1	2
19	1	3	3	3	1	3	2	2
20	1	2	2	2	1	3	3	2
21	1	2	2	2	2	3	1	2
22	2	2	2	1	3	2	1	2
23	2	2	2	1	1	2	1	2
24	1	1	1	2	1	1	1	2
25	2	1	1	1	1	2	2	2
26	1	2	3	2	1	2	2	2
27	1	2	2	1	2	3	1	2
28	1	1	1	1	1	2	2	2
29	2	2	2	3	3	3	3	3
30	2	3	3	3	2	3	2	2
31	3	2	3	2	2		1	2
32	2	3	2	3	2		2	2
33	2	2	2	2	2	2	2	3
34	1	1	1	2	1	2	1	2
35								

**Grade 9 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
36								
37								
38								
39								
40								
41	1	2	1	2	3	1	3	2
42	1	1	1	1	1	1	1	2
43	2	3	2	2	3	3	3	2
44	1	1	1	1	2	1	1	2
45	1	1	1	1	1	1	2	2
46	1	2	1	1	2	1	1	2
47	2	3	2	2	3	3	3	2
48	3	3	2	2	3	3	3	3
49	1	1	1	1	1	1	1	3
50	2	2	2	3	3	1	3	2
51	1	2	1	1	2	1	1	3
52	1	1	2	2	1	2	2	3
53	1	1	1	1	1	1	1	1
54	2	3	2	2	3	3	3	3
55	2	2	2	2	1	1	1	3
56	3	2	2	3	2	3	2	3
57	2	2	3	3	1	2	3	2
58	1	1	1	2	1	1	1	2
59	1	1	1	1	1	1	1	2
60	2	2	2	3	3	1	2	3
61	1	1	1	1	1	1	1	3
62	1	2	1	1	2	1	1	3
63	2	3	2	2	3	1	1	3
64	3	3	2	3	2	3	3	2
65	3	3	2	2	2	3	3	3
66	1	1	1	1	1	1	1	2
67								
68								
69								
70	2	2	3	2	3	1	3	3

**Grade 10 English Language Arts**

**Table D8:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1	1	2	3	2	2	3	2	2
2	2	2	2	2	2	2	2	3
3	2	3	2	2	3	1	3	3
4	1	2	2	2	2	2	2	2
5	2	1	2	2	1	2	2	2
6	2	2	2	2	2	2	1	1
7	2	2	3	3	3	2	3	2
8	1	2	2	3	1	2	2	2
9	2	3	3	3	2	2	1	2
10	2	3	3	3	3	2	2	2
11	2	2	2	2	2	3	1	2
12	1	1	2	1	2	3	1	2
13	2	2	3	3	2	2	2	3
14	3	2	2	2	2	2	2	3
15	2	1	1	1	2	1	2	2
16	2	2	2	2	3	3	2	3
17	3	3	2	2	2	2	2	2
18	2	3	2	2	3	1	2	2
19	3	1	2	2	2	2	2	2
20	1	2	2	2	2	2	1	1
21	1	1	2	2	1	1	1	2
22	2	2	2	2	2	2	2	3
23	2	2	3	3	2	2	2	2
24	3	3	2	2	3	2	3	3
25	2	3	3	3	3	2	3	3
26	3	3	3	3	3	3	3	3
27	2	2	3	3	3	1	2	2
28	1	1	1	1	1	1	1	2
29	1	1	1	1	1	1	1	2
30	1	2	2	2	1	2	2	2
31	2	2	2	2	2	2	2	2
32	2	3	3	3	3	2	2	3
33								
34								
35								
36								

**Grade 10 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
<b>37</b>								
<b>38</b>								
<b>39</b>	3	2	3	3	2	1	2	3
<b>40</b>	1	1	1	2	1	1	1	2
<b>41</b>	2	2	2	2	1	1	3	3
<b>42</b>	1	1	1	1	2	1	1	2
<b>43</b>	2	2	2	2	2	2	3	3
<b>44</b>	1	2	1	1	1	1	1	2
<b>45</b>	1	2	1	1	1	1	1	2
<b>46</b>	1	2	3	2	1	2	3	3
<b>47</b>	1	2	1	2	1	1	1	2
<b>48</b>	3	2	3	2	2	2	2	2
<b>49</b>	1	1	1	1	1	1	1	2
<b>50</b>	2	2	2	3	2	1	2	2
<b>51</b>	1	2	2	2	1	1	2	2
<b>52</b>	2	2	2	2	1	1	3	2
<b>53</b>	2	2	3	2	2	2	3	3
<b>54</b>	1	2	1	1	1	1	1	2
<b>55</b>	3	3	3	2	2	2	3	3
<b>56</b>	2	2	3	2	3	2	3	3
<b>57</b>	2	1	1	1	1	1	1	2
<b>58</b>	2	3	3	3	2	2	2	2
<b>59</b>	1	1	1	1	1	1	1	1
<b>60</b>	1	1	1	1	1	1	1	1
<b>61</b>								
<b>62</b>								
<b>63</b>								
<b>64</b>	1	1	1	1	2	1	1	2
<b>65</b>	1	2	1	2	2	1	1	2
<b>66</b>	2	2	2	2	2	2	2	2
<b>67</b>	2	2	2	2	2	2	2	2
<b>68</b>								
<b>69</b>	2	2	2	2	2	2	2	2
<b>70</b>	2	3	2	2	2	2	2	2

## Grade 11 English Language Arts

**Table D9:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	2	3	3	2	1	2	2
2	2	2	3	2	3	2	3	3
3	2	2	2	3	2	2	3	3
4	2	1	2	2	2	1	1	1
5	2	1	2	2	2	2	2	2
6	3	2	3	2	2	3	3	2
7	2	2	3	2	2	2	2	3
8	1	1	2	2	2	1	1	1
9	2	2	3	3	3	3	2	2
10	1	1	2	2	2	2	2	2
11	2	2	3	3	3	2	2	2
12	2	1	2	2	3	1	2	1
13	2	2	3	3	2	2	3	2
14	1	1	1	2	2	2	1	1
15	2	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2	2
17	2	3	3	2	3	3	3	3
18	3	2	3	3	2	3	3	3
19	2	2	3	2	3	2	3	3
20	2	2	1	2	2	2	2	2
21	2	2	2	3	2	2	3	2
22	2	2	2	3	2	2	3	3
23	3	3	3	2	2	1	2	2
24	2	2	2	2	3	3	3	2
25	3	2	3	3	3	2	2	3
26	2	2	3	2	1	2	3	2
27	2	2	3	3	2	3	3	2
28	3	2	3	3	2	1	3	2
29	1	2	1	2	1	1	2	2
30	2	2	2	2	3	2	3	3
31	2	2	1	2	2	1	2	2
32	3	2	3	3	3	2	2	3
33	2	2	3	3	2	2	2	3
34	2	3	3	3	2	2	3	3
35								
36								

**Grade 11 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37								
38								
39								
40								
41	2	2	2	2	3	2	2	2
42	1	2	3	3	1	2	2	2
43	2	2	3	3	3	3	3	3
44	3	2	3	3	3	2	2	2
45	1	1	1	1	2	1	1	1
46	2	1	1	2	1	1	1	2
47	3	1	3	2	2	2	3	2
48	2	1	2	2	3	2	3	2
49	2	2	2	2	1	1	3	2
50	2	2	3	3	2	2	2	2
51	1	2	2	2	1	1	3	2
52	2	2	3	2	2	2	2	2
53	2	1	3	2	1	3	2	2
54	2	2	2	3	2	2	2	3
55	3	2	3	3	3	3	2	2
56	1	1	2	1	1	1	1	2
57	1	1	2	2	1	1	3	2
58	2	2	1	3	3	1	2	2
59								
60								
61								
62	2	2	2	2	2	2	2	2
63	1	1	1	1	1	1	1	1
64	1	2	3	2	1	3	3	2
65	2	3	2	1	2	1	2	2
66	2	2	3	2	3	3	3	2
67	3	2	3	2	2	3	3	3
68								
69	1	2	1	2	2	1	2	1
70	2	2	1	2	2	1	1	2

## Science Depth-of-Knowledge Levels by Item and Reviewers

### Grade 5 Science

**Table D10:**  
**DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	1	1	1	1	1	2
2	2	1	1	1	2	1	1	2
3	2	3	2	1	2	3	2	3
4	1	1	1	1	2	2	1	1
5	1	1	2	2	3	2	1	1
6	1	2	1	3	3	1	1	1
7	1	1	1	3	1	2	1	2
8	1	1	1	2	1	2	1	1
9	1	1	2	2	2	2	1	1
10	1	1	1	1	1	1	1	1
11	1	1	1	3	3	2	2	1
12	1	1	1	2	2	1	1	1
13	2	2	2	3	3	2	2	2
14	2	1	2	1	2	2	1	2
15	2	2	2	2	2	2	1	3
16								
17								
18								
19								
20	1	1	1	1	2	1	1	1
21	1	1	1	1	2	2	1	1
22	1	1	1	1	2	1	1	1
23	1	1	1	1	2	1	1	1
24	1	1	1	1	2	2	1	1
25	1	1	1	1	3	2	1	1
26	1	1	1	1	1	1	1	1
27	1	1	1	1	2	1	1	1
28	1	1	1	1	1	1	1	1
29	2	2	2	2	2	2	2	1
30	2	2	2	1	3	2	2	2
31	2	1	1	2	2	2	2	1
32	1	1	2	1	3	2	1	2
33	3	2	2	3	3	3	2	1
34	1	1	1	1	2	2	2	1

**Grade 5 Science (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
35	1	1	1	1	1	1	1	1
36	1	1	1	1	2	2	1	1
37								
38								
39								
40								
41								
42	1	1	1	1	1	1	1	1
43	1	1	1	1	3	1	1	1
44	1	1	1	1	1	2	1	2
45	1	1	1	2	1	2	2	1
46	1	2	2	2	3	2	1	1
47	1	1	1	1	1	1	1	1
48	1	2	1	2	1	2	1	1
49	1	2	1	1	2	2	2	1
50	1	1	1	1	1	2	2	1
51	1	1	1	1	1	2	1	1
52	1	2	1	2	3	2	1	1
53	1	1	1	2	2	2	1	1
54	1	1	1	1	1	1	1	1
55	1	1	1	1	2	2	1	1
56	2	2	2	2	2	2	2	2
57	2	1	1	1	1	1	1	1

Grade 8 Science

Table D11:  
DOK Levels by Item and Reviewers

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	1	1	1	2	1	1
2	1	1	1	1	1	1	1	1
3	2	1	1	2	2	2	1	2
4	2	2	2	1	2	2	2	2
5	1	1	1	1	2	2	2	1
6	1	1	1	2	2	1	2	1
7	1	2	2	1	2	2	2	1
8								
9								
10								
11	1	1	1	1	2	1	1	1
12	1	1	1	1	1	2	1	1
13	1	2	1	1	1	1	1	1
14	2	1	2	1	2	2	1	1
15	2	2	2	1	3	2	2	1
16	2	1	2	2	2	2	1	1
17	2	1	1	1	2	2	2	1
18	1	2	2	2	3	2	1	1
19	1	1	1	1	1	1	1	1
20	1	2	1	1	3	2	1	1
21	2	2	2	1	2	2	1	2
22	1	1	1	1	2	2	1	1
23	3	1	1	2	2	2	1	2
24	1	1	1	1	1	1	1	1
25								
26								
27	1	1	1	1	1	2	1	1
28	1	1	1	2	2	1	1	1
29	1	1	1	1	1	1	1	1
30	1	1	1	1	2	1	1	1
31	2	1	2	2	2	2	1	1
32	1	1	1	1	2	1	1	1
33	2	1	1	1	2	2	1	1
34	1	1	1	1	2	1	1	1
35	1	1	1	1	1	1	1	1
36	1	1	1	1	1	2	2	1

**Grade 8 Science (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	2	1	1	1	1	1	1
38	1	1	1	2	2	1	1	1
39	1	1	1	1	1	1	1	1
40	2	1	1	1	2	2	1	1
41	1	1	1	2	2	2	2	1
42								
43								
44	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	2	1
46	1	1	1	1	2	1	1	1
47	1	1	1	1	1	1	1	1
48	1	1	1	2	2	1	1	1
49	1	1	1	1	1	1	1	1
50	1	1	1	1	2	1	2	1
51								
52								
53	2	2	2	2	2	2	1	1
54	1	2	1	3	2	2	2	1
55	1	2	1	1	1	1	1	1
56	1	2	2	2	2	2	2	1
57	2	1	1	2	2	2	1	1
58	2	2	2	3	2	2	1	1
59	1	1	1	1	1	2	1	1
60	1	1	1	1	2	1	1	1
61	1	1	1	1	2	2	2	1
62	2	2	2	1	2	2	1	1
63	1	1	1	1	2	1	1	1

## High School Science

**Table D12:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	2	1	1	2	1	1	1	2
2	1	1	1	1	1	1	1	1
3	2	2	2	1	1	2	1	1
4	1	1	1	2	1	1	1	1
5	1	1	1	1	1	1	1	1
6	1	1	2	2	1	1	1	1
7	1	1	2	1	1	1	1	1
8	2	2	2	2	2	1	2	2
9	2	2	1	2	2	2	2	2
10	1	1	1	2	1	1	1	2
11	1	2	1	2	1	1	1	1
12								
13	2	1	1	2	2	1	2	2
14	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	2
17	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1
19	2	2	2	2	2	2	2	2
20	1	2	1	1	1	1	1	1
21	1	2	2	2	1	2	1	2
22	1	2	1	2	1	1	2	1
23	2	2	2	3	2	2	2	3
24	1	1	1	1	1	1	1	1
25	2	2	1	2	2	1	2	1
26								
27								
28	3	2	2	2	3	1	2	2
29	2	1	1	2	1	1	1	2
30	1	1	1	1	2	2	2	2
31	1	1	1	2	1	2	1	1
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	1	1	2	2	1	1
36	2	1	2	2	1	1	1	2

**High School Science (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	2	1	1	2	2	1	1	2
38	2	2	2	2	2	2	1	2
39	1	1	1	1	1	1	1	1
40								
41								
42	3	2	2	3	3	2	2	3
43	1	1	1	2	1	1	1	1
44	2	1	1	2	1	1	2	2
45	2	1	2	2	2	1	2	2
46	1	1	1	2	1	1	1	2
47	2	2	1	2	1	2	1	1
48	1	1	1	2	1	1	2	2
49	1	2	1	2	2	2	1	2
50	2	2	1	2	2	1	2	2
51	2	2	2	2	2	2	2	2
52	2	2	2	2	2	2	2	2
53	1	2	1	2	1	1	2	2
54								
55	1	2	1	2	1	1	2	2
56	1	2	2	2	2	2	2	2
57	2	2	2	2	3	2	2	2
58	1	1	1	1	1	1	1	1
59	1	2	1	2	1	1	1	1
60	2	1	1	2	2	2	2	2
61	1	1	2	2	2	1	2	2
62	1	1	1	1	1	2	1	2
63	2	2	1	2	2	2	2	2
64	1	1	1	1	1	1	1	1
65	2	2	2	2	2	2	2	1
66	2	2	2	2	2		2	2

## Mathematics Depth-of-Knowledge Levels by Item and Reviewers

### Grade 3 Mathematics

**Table D13:**  
**DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1
5	1	1	2	1	1	1	1	1
6	1	1	2	2	2	2	2	2
7	1	1	1	1	1	1	1	1
8	1	1	2	2	2	1	2	2
9	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1
11	2	2	2	2	1	1	1	1
12								
13								
14	1	1	1	1	1	1	1	1
15	1	2	2	2	2	2	1	1
16	1	1	1	1	1	1	1	1
17	2	2	2	1	1	2	1	2
18	1	1	2	1	2	2	1	1
19	2	1	2	1	1	1	1	1
20	1	2	2	1	1	1	2	2
21	1	1	1	1	1	1	1	1
22	1	1	2	1	1	1	1	1
23	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1
25	2	2	2	2	2	2	2	2
26	1	1	1	1	1	1	1	1
27								
28								
29	2	2	2	1	1	2	1	1
30	1	1	2	2	1	2	2	2
31	1	1	1	1	1	1	1	1
32	1	2	2	1	1	2	1	2
33	1	1	2	2	1	1	1	1
34	1	1	1	1	1	1	1	1

**Grade 3 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
35	1	1	2	1	1	1	1	1
36	1	1	2	2	1	1	1	2
37								
38								
39	1	1	2	1	1	1	1	1
40	1	1	1	1	1	1	1	1
41	1	1	2	1	1	2	1	1
42	1	1	2	1	1	1	1	1
43	2	1	1	1	2	2	1	1
44	1	1	1	1	1	1	1	1
45	1	1	2	1	1	1	1	1
46	1	1	2	1	1	1	1	1
47	1	1	2	1	1	1	1	1
48	1	1	2	1	1	1	1	1
49	1	1	2	1	1	1	1	1
50								
51								
52								
53	2	1	3	2	2	2	2	2
54	2	2	2	1	2	1	2	2
55	2	2	2	2	2	1	1	2
56	2	1	2	1	2	2	2	2
57	2	1	2	1	2	1	2	1

**Grade 4 Mathematics**

**Table D14:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1	1	1	2	1	2	1	1	1
2	1	1	1	1	1	1	1	2
3	1	1	2	1	1	1	1	1
4	1	1	1	1	1	1	1	1
5	1	1	2	1	1	2	1	2
6	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	2
8	1	1	2	2	2	2	2	2
9	1	1	1	1	1	1	2	2
10	1	1	2	1	1	1	1	1
11	1	1	2	1	1	1	1	1
12	1	1	1	1	1	1	1	1
13								
14								
15	1	1	2	2	1	1	1	2
16	1	1	2	1	1	1	1	1
17	1	1	1	1	1	1	1	1
18	1	1	2	1	1	2	2	1
19	1	1	2	1	1	1	1	1
20	1	1	1	1	1	1	1	1
21	1	1	2	1	1	2	1	1
22	1	1	2	1	1	2	2	1
23	1	1	1	1	1	1	1	1
24	1	1	2	1	1	1	2	2
25	1	1	1	1	1	1	1	1
26								
27								
28	2	1	2	2	2	2	2	2
29	1	1	2	1	1	1	2	1
30	1	2	2	1	1	1	1	2
31	1	1	2	1	1	2	1	1
32	2	2	2	1	1	2	1	1
33	1	1	2	1	1	2	2	1
34	1	1	2	1	1	1	1	1
35	1	1	2	1	1	2	1	1
36	1	1	1	1	1	1	1	1

**Grade 4 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	1	2	1	1	1	1	2
38								
39								
40	2	2	3	3	2	2	2	2
41	1	1	1	1	1	1	1	1
42	1	2	3	1	1	2	2	2
43	2	2	2	2	2	2	2	2
44	1	1	2	1	1	1	1	1
45	1	1	2	2	1	1	1	1
46	1	1	2	2	2	1	1	1
47	1	1	2	1	1	1	1	1
48	1	1	2	1	1	1	1	1
49	1	1		2	2	1	1	1
50								
51								
52								
53	1	1	2	1	1	1	1	1
54	2	2	2	2	2	2	2	1
55	2	2	2	2	2	2	2	1
56	1	2	2	2	1	1	2	2
57	2	3	2	2	2	2	2	1

**Grade 5 Mathematics**

**Table D15:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1	1	1	2	1	1	1	1	1
2	1	1	1	1	1	1	1	1
3	1	1	2	1	1	1	1	1
4	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1
7	1	1	2	2	1	1	1	2
8	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	2
10	1	1	1	1	1	1	1	1
11								
12								
13	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1
16	1	1	2	1	1	2	1	2
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	1	1	1	1	1	2	1	1
21	1	1	2	1	1	1	1	1
22	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1
24								
25								
26	2	2	2	2	2	2	1	1
27	2	1	2	2	2	2	2	2
28	1	1	2	1	1	1	1	1
29	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1
33	1	1	2	2	2	2	2	1
34	1	1	2	2	1	1	1	1
35	1	1	2	2	1	1	1	2
36	1	1	2	2	1	2	2	2

**Grade 5 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	2	1	1	2	1	2	2	1
38								
39								
40	1	1	2	1	1	1	1	1
41	1	1	2	1	2	1	1	2
42	2	2	2	2	2	2	1	2
43	1	1	2	1	1	2	1	1
44	1	2	2	1	1	1	1	1
45	1	1	2	1	1	2	1	1
46	1	1	2	1	1	1	1	1
47	1	1	2	1	1	1	1	1
48	1	1	2	1	2	1	1	1
49	1	1	2	1	1	2	1	2
50								
51								
52								
53	1	1	2	2	1	1	2	2
54	2	1	2	2	2	2	2	1
55	2	1	2	2	1	1	2	1
56	1	1	2	2	1	1	1	1
57	1	1		1	1	1	1	2

**Grade 6 Mathematics**

**Table D16:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1	1	1	1	1	1	1	1	1
2	2	1	2	2	1	1	2	1
3	1	1	1	1	1	1	1	1
4	2	1	1	1	1	1	1	1
5	2	1	2	2	1	1	1	2
6	2	2	2	1	1	1	2	1
7	2	1	2	2	1	2	2	1
8	1	1	1	1	1	1	1	1
9	2	2	2	1	1	1	2	2
10	1	1	1	1	1	1	1	1
11	2	1	2	2	1	1	2	1
12								
13								
14	1	1	1	1	1	1	1	1
15	2	2	2	2	1	2	2	2
16	1	1	1	1	1	1	1	1
17	2	2	2	2	1	1	2	1
18	1	1	2	1	1	1	2	1
19	1	1	1	1	1	1	1	1
20	2	1	2	2	1	2	2	2
21	1	1	1	1	1	1	1	1
22	2	1	2	1	1	1	2	1
23	2	2	2	2	1	1	2	1
24								
25								
26	1	1	1	1	1	1	1	1
27	2	2	2	1	1	1	2	1
28	1	1	3	1	2	1	1	1
29	2	1	2	1	1	2	2	1
30	1	1	1	1	1	1	1	1
31	2	1	1	1	1	1	2	1
32	1	1	1	1	1	1	1	1
33	2	2	2	2	1	2	2	2
34	2	1	2	2	1	2	2	2
35	1	2	2	1	1	2	2	2
36	1	2	2	1	1	1	2	1

**Grade 6 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	2	2	1	1	1	2	1
38	2	2	2	1	1	2	2	2
39	1	1	2	1	1	1	2	1
40	2	2	2	1	1	2	2	1
41	1	1	1	1	1	1	1	1
42								
43								
44	1	1	2	1	1	2	2	2
45	1	1	1	1	1	1	1	1
46	1	1	1	1	1	2	1	1
47	1	1	1	1	1	1	1	2
48	1	1	1	1	1	2	1	2
49	1	1	2	1	1	1	2	1
50	1	2	3	2	1	1	2	2
51	2	1	1	1	1	1	1	1
52								
53								
54								
55	2	1	2	1	1	2	1	2
56	2	1	2	1	1	2	2	2
57	2	1	1	2	1	2	2	2
58	1	1	2	1	1	1	1	1
59	1	1	2	2	1	2	2	1
60	1	1	1	2	1	2	1	2
61	2	1	2	1	1	2	2	2
62	1	1	2	1	1	2	1	2
63	1	2	2	2	1	2	3	2

**Grade 7 Mathematics**

**Table D17:  
DOK Levels by Item and Reviewers**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
1		1	2	1	1	1	1	1
2	1	1	1	1	1	1	1	1
3	1	1	2	1	1	1	1	1
4	2	1	2	1	1	1	2	1
5	1	2	3	2	1	1	2	1
6	2	2	2	2	1	1	1	1
7	2	2	3	2	1	2	2	2
8	1	1	1	1	1	1	1	1
9	2	2	2	2	1	2	1	1
10	1	1	1	1	1	1	1	2
11	2	2	3	2	1	2	3	2
12								
13								
14	1	1	2	1	1	1	1	1
15	2	1	2	1	1	1	1	1
16	2	1	1	1	1	1	1	1
17	2	2	2	2	1	2	1	1
18	2	2	2	2	1	2	1	2
19	2	1	2	2	1	2	1	1
20	1	1	1	1	1	1	1	1
21								
22								
23	2	2	3	2	1	2	2	2
24	1	1	1	2	1	1	1	2
25	1	2	1	1	1	1	1	1
26	1	2	2	2	1	1	2	2
27	1	1	1	2	1	2	1	2
28	1	2	1	2	1	1	1	1
29	2	1	3	2	1	2	2	1
30	2	1	3	2	1	2	2	2
31	2	2	1	2	1	2	1	2
32	1	2	1	2	1	1	1	1
33	2	2	1	2	1	2	2	2
34	2	1	3	2	1	2	2	2
35	1	2	2	2	1	1	1	1
36	1	1	1	1	1	1	1	1

**Grade 7 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	1	2	2	1	1	2	1
38	2	2	2	2	1	2	2	2
39	1	1	3	1	1	1	1	1
40	2	2	3	2	1	2	2	2
41	2	2	3	2	1	1	1	2
42	2	2	1	2	1	1	2	1
43								
44								
45	1	1	2	1	1	1	2	1
46	2	2	2	1	1	1	1	1
47	1	1	1	1	1	1	1	1
48	2	2	3	2	1	1	2	1
49	1	1	2	2	1	2	1	2
50	1	2	2	2	1	2	3	2
51	2	2	2	2	1	2	2	2
52	2	1	2	1	1	2	1	1
53	1	2	2	2	1	2	1	1
54	1	1	2	1	1	2	1	2
55	1	2	1	2	1	1	1	1
56								
57								
58								
59	2	2	2	2	1	2	2	2
60	2	1	2	2	1	2	2	2
61	2	1	2	2	1	1	2	1
62	1	1	2	2	1	2	1	2
63	2	1	2	2	1	2	2	2

# Algebra I

**Table D18:  
DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	1	1	1	1	1	1
2	1	2	2	1	2	2	1	2
3	2	1	1	1	1	1	2	1
4	2	1	2	1	1	1	1	1
5	1	1	2	1	2	2	2	2
6	1	1	1	1	1	1	1	1
7	3	2	2	2	2	2	2	2
8	1	2	2	1	2	2	1	2
9	2	2	2	2	2	2	2	2
10	1	1	2	1	2	2	1	2
11	1	1	1	1	1	1	1	1
12	2	1	2	1	2	2	2	2
13	1	1	2	2	2	2	1	2
14	1	1	1	1	1	1	1	1
15	2	3	2	2	3	3	3	3
16								
17								
18								
19	2	2	2	2	2	2	2	2
20	2	3	2	2	1	1	2	2
21	3	1	2	2	2	2	2	2
22	2	3	2	2	1	1	2	1
23	2	2	2	2	2	2	3	1
24	2	2	2	2	2	2	2	2
25	3	1	2	2	3	2	2	2
26	2	1	1	2	1	1	1	1
27	3	2	2	2	2	2	2	2
28	2	2	2	2	2	3	2	2
29	3	2	2	2	2	2	2	2
30	2	2	2	2	1	1	1	2
31	2	1	2	2	1	1	2	1
32	3	2	1	2	1	1	1	1
33								
34								
35								
36	2	2	1	2	1	1	1	2

**Algebra I (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	2	1	2	3	2	2	3	2
38	2	2	1	3	3	2	1	1
39	2	2	1	2	1	1	1	2
40	1	1	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	3	2	2	2	2	2	2	2
44	2	2	2	3	2	2	2	2
45	1	1	2	2	2	2	2	2
46	2	1	2	2	2	2	2	2
47	3	2	1	2	1	2	3	2
48	3	1	1	2	1	1	1	1
49	1	1	1	2	1	1	1	2
50	3	1	1	3	1	1	2	1
51	1	3	1	2	3	3	2	2
52	1	2	2	2	2	2	2	2
53	1	1	2	2	1	1	1	1
54	1	2	2	1	1	1	1	1
55								
56								
57	2	3	2	2	2	2	2	2
58	2	3	1	2	2	2	2	2
59	2	2	3	2	3	1	1	2
60	3	3	2	2	3	1	2	2
61	2	1	1	2	2	1	1	1
62	1	1	2	2	2	1	1	1
63								
64								
65	3	3	2	2	2	1	1	1
66	2	2	2	2	2	2	1	2
67	2	1	2	2	2	1	1	1
68	1	1	1	2	3	1	1	1
69	2	1	2	2	2	1	1	1
70	2	3	2	2	3	3	3	3

## Geometry

**Table D19:**  
**DOK Levels by Item and Reviewers**

Item	DOK R1	DOK R2	DOK R3	DOK R4	DOK R5	DOK R6	DOK R7	DOK R8
1	1	1	1	1	1	1	1	1
2	3	2	2	2	1	1	1	1
3	3	3	1	2	1	1	2	1
4	1	1	1	1	2	1	1	1
5	1	1	1	2	1	1	1	1
6	1	1	1	1	2	1	2	2
7	3	2	1	2	2	1	3	2
8	2	2	1	2	2	1	2	2
9	3	2	1	2	1	1	1	1
10	3	2	1	2	2	2	2	2
11	3	3	1	2	2	2	3	2
12	3	3	1	2	3	2	3	2
13	3	3	1	2	2	1	3	2
14	2	2	2	2	2	1	2	2
15	2	2	1	2	2	1	3	2
16	2	1	2	1	1	2	3	1
17	2	2	1	2	2	1	1	1
18	2	1	2	2	2	2	2	1
19	2	3	2	2	3	3	3	2
20	1	2	1	1	1	1	1	1
21	2	2	2	2	1	2	3	2
22	2	1	2	2	2	2	2	2
23	2	3	1	2	2	1	3	2
24								
25								
26								
27								
28	1	2	1	1	1	2	1	1
29	1	2	1	1	1	1	1	1
30	3	2	1	2	2	2	2	2
31	1	2	2	2	1	2	2	2
32	1	2	2	2	1	2	1	1
33	2	1	2	2	1	2	1	1
34	1	2	2	1	1	2	1	1
35	2	1	2	1	1	2	1	1
36	1	2	2	1	1	2	1	1

**Geometry (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>DOK R2</b>	<b>DOK R3</b>	<b>DOK R4</b>	<b>DOK R5</b>	<b>DOK R6</b>	<b>DOK R7</b>	<b>DOK R8</b>
37	1	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1	1
39								
40								
41								
42	2	2	2	1	2	2	2	2
43	1	1	2	1	2	2	2	1
44	3	1	1	2	2	2	1	2
45	1	1	2	2	1	2	1	1
46	1	1	1	2	1	1	1	1
47	1	1	2	2	1	1	1	1
48	2	2	2	1	1	2	2	1
49	3	2	2	2	2	1	1	1
50	1	2	1	2	2	1	1	1
51	1	2	2	2	1	2	1	1
52	2	2	2	2	2	2	2	2
53	2	3	2	2	2	3	2	2
54	2	1	2	2	2	1	2	1
55	1	1	2	2	1	1	1	1
56								
57								
58								
59	1	1	1	1	2	1	1	1
60	2	2	2	2	2	1	1	1
61	2	2	2	2	1	2	1	2
62	2	1	1	2	2	1	1	1
63	3	3	2	2	2	1	2	1
64	3	2	1	2	2	2	2	2
65	1	2	1	1	1	1	1	1
66	3	3	1	2	2	2	2	2
67	1	1	1	2	1	1	2	1
68	3	2	2	2	2	2	2	2
69	2	3	1	2	2	1	2	1
70	1	1	2	2	2	2	1	1

## **Appendix E**

### **Standard and Depth-of-Knowledge Alignments Assigned by Reviewers**

**English Language Arts Standard and Depth-of-Knowledge Alignments Assigned by Reviewers**

**Table E1:  
Grade 3 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.8		1	R1.8		1	R1.8		1	R1.8	
2	1	R1.1		1	R1.1		1	R1.1		1	R1.1	
3	2	R1.6		1	R1.2		1	R1.6		1	R1.6	
4	2	R1.4		1	R1.4		1	R1.4		1	R1.4	
5	2	R1.1		1	R1.1		1	R1.1		1	R1.1	
6												
7	2	R3.1		1	R3.1		1	R3.1		2	R3.1	
8	3	R3.3		2	R2.3		2	R2.2		2	R3.3	
9	2	R3.3		2	R2.3		1	R2.2		2	R3.3	
10	1	R1.1		1	R1.1		1	R1.1		1	R1.1	
11	3	N/A		2	R2.5		1	R2.7		3	R2.5	
12	1	R2.3		1	R2.7		1	R2.7		1	R2.1	
13	1	R2.3		1	R2.3		1	R2.6		2	R2.4	
14	3	R2.2		2	R2.3		2	R2.2		3	R2.4	
15	2	R2.1		1	R2.1		2	R2.2		2	R2.1	
16	1	R2.3	R2.4	1	R2.3		2	R2.3		1	R2.3	
17	3	R2.2		3	R2.2		2	R2.4		2	R2.2	
18	2	R2.1		1	R2.1		1	R1.8		1	R2.1	
19	1	R1.2		1	R1.2		1	R1.2		1	R1.2	
20	2	R3.3		2	R3.3		2	R2.2		2	R3.3	
21	3	R2.6		2	R2.3		2	R2.6		2	R2.6	
22	2	R2.3		1	R2.3		2	R2.2		2	R2.2	
23	3	R3.3		3	R3.3		2	R3.3		2	R3.3	

**Grade 3 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
24	3	R3.4		3	R3.4		2	R3.4		3	R3.4	
25												
26												
27												
28												
29												
30												
31	2	WS1.1.1		2	R2.5		1	WS1.1.1		2	WS1.1.1	
32	2	WS1.1.2		3	R2.2		1	R3.2		2	WS1.1.2	
33	1	W1.2										
34	1	W1.3										
35	1	WS1.3		1	WS1.3		1	R1.7		1	W1.9	
36	1	W1.6	W1.5	1	W1.5		1	W1.5		1	W1.6	
37	1	W1.1		2	R3.3		1	W1.1		1	W1.1	
38	1	W1.8										
39	1	W1.3										
40	2	WS1.1.2		3	R2.2		2	WS1.4		2	WS1.1.2	
41	1	W1.7										
42	1	W1.6	W1.5	1	W1.5		1	W1.5		1	W1.7	
43	1	W1.9		1	WS1.3		1	W1.9		1	W1.9	
44	1	WS1.3		2	WS1.3		2	WS1.3		2	WS1.3	
45	1	W1.8										
46	1	W1.4		1	W1.4		1	W1.2		1	W1.2	

**Grade 3 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
47	1	W1.8										
48	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
49	2	R1.4		1	R1.5		1	R1.4		1	R1.4	
50	2	R1.7		1	R1.7		1	R1.7		1	R1.7	
51												
52												
53	2	R1.4		1	R1.4		1	R1.4		1	R1.4	
54	2	R1.8		1	R1.8		1	R1.8		1	R1.8	
55	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
56	2	R1.6		1	R1.6		1	R1.4		1	R1.6	
57	1	R1.1										

**Grade 3 English Language Arts**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	2	R1.8		2	R1.8		1	R1.8		1	R1.8	R1.2
2	1	R1.1		1	R1.1		1	W1.1		1	R1.1	
3	1	N/A		2	R1.6		1	R1.8		2	R1.6	
4	2	R1.4		2	R1.4		1	R1.4		2	R1.4	
5	1	R1.1		1	R1.1		1	R1.1		1	R3.5	R1.1
6												
7	1	R3.1		1	R3.1		1	R3.1		1	R3.1	
8	2	R3.3	R3.2	2	R3.3		2	R2.2		2	R3.3	R2.2
9	2	R3.3		2	R3.3		2	R2.2		2	R3.3	
10	1	R1.1		1	R1.1		1	R1.1		1	R1.1	
11	2	R2.5	R2.6	2	R2.5		2	R2.6		2	R2.6	R3.4
12	1	R2.3		1	R2.7		1	R2.7		1	R2.3	
13	1	R2.3		2	R2.2		1	R2.6		2	R2.3	
14	2	N/A		2	R2.4		2	R2.4		3	R2.2	
15	2	N/A		1	R2.1		2	R2.4		2	R2.1	
16	2	R2.3		1	R2.3		2	R2.3		2	R2.3	
17	2	R2.4	R2.6	2	R2.2		2	R2.4		2	R2.2	
18	2	R2.1		1	R2.1		1	R2.1		2	R2.1	
19	1	N/A		1	R1.2		1	R1.2		1	R1.2	
20	2	R3.3		2	R3.3		1	R1.8		3	R3.3	
21	2	R2.6	R3.2	3	R2.6		2	R2.4		2	R2.6	
22	2	R3.2	R2.3	2	R2.2		2	R2.4		2	R2.3	R2.2
23	2	R3.3		2	R3.3		2	R2.4		3	R3.3	

**Grade 3 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	3	R3.4		3	R3.4		2	R2.4		3	R3.4	
25												
26												
27												
28												
29												
30												
31	2	WS1.1.1		2	WS1.1.1		2	R2.6		2	WS1.1.1	
32	2	WS1.1.2		3	WS1.4		2	R3.2		2	WS1.4	
33	1	W1.4		1	W1.4		2	W1.2		1	W1.3	
34	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
35	1	WS1.3		1	WS1.3		1	R1.7		1	W1.9	R2.1
36	1	W1.6	W1.5	1	W1.5		1	W1.5		1	W1.6	W1.5
37	2	WS1.1.2		2	W1.1		1	W1.1		1	W1.1	
38	1	W1.8		1	W1.8		1	W1.8		1	W1.8	
39	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
40	2	WS1.1.2		3	WS1.4		2	W1.1		3	WS1.4	
41	1	W1.7		1	W1.7		1	W1.7		1	W1.7	
42	1	W1.5	W1.6	1	W1.5		1	W1.7		1	W1.6	W1.5
43	1	W1.9		1	W1.9		1	W1.9		1	W1.9	
44	1	WS1.3		1	WS1.3		1	WS1.3		1	WS1.3	
45	1	W1.8		1	W1.8		1	W1.8		1	W1.8	
46	1	W1.2		1	W1.2		1	W1.3		1	W1.2	
47	1	W1.8		1	W1.8		1	W1.8		1	W1.8	

**Grade 3 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
<b>48</b>	2	R1.5		1	R1.5		1	R1.5		2	R1.5	
<b>49</b>	1	R1.4		1	R1.4		1	R1.4		2	R1.4	
<b>50</b>	2	R1.7		1	R1.7		1	R1.4		2	R1.6	R1.7
<b>51</b>												
<b>52</b>												
<b>53</b>	1	R1.4										
<b>54</b>	1	R1.8		2	R1.8		1	R1.8		2	R1.8	
<b>55</b>	2	R1.5		1	R1.5		1	R1.8		2	R1.5	
<b>56</b>	2	R1.6		2	R1.6		2	R2.2		2	R1.6	
<b>57</b>	1	R1.1										

**Table E2:**  
**Grade 4 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.4		2	R1.4		1	R1.2		1	R1.4	
2	2	R1.6		2	R1.6	R1.2	1	R1.6		1	R1.2	
3	2	R1.2		2	R1.4		1	R1.4		1	R1.4	
4	2	N/A		2	R1.6		1	R1.6		1	N/A	
5	2	R1.2		2	R1.6		1	R1.5		1	R1.2	
6												
7	2	R3.2		1	R2.1		1	R2.1		2	R2.6	R3.3
8	2	R3.2		2	R3.2		1	R1.3		2	R3.2	
9	2	R1.2		2	R1.6	R3.5	1	R1.2		1	R1.3	
10	2	R1.2		2	R3.5		1	R3.5		1	R1.2	
11	3	R2.5		2	R2.5		2	R3.4		3	R2.5	
12	1	R2.7		1	R2.7		1	R2.7		1	R2.7	
13	2	R2.3		2	R2.3		1	R2.7		1	R2.3	
14	1	R2.7	R2.3	1	R2.7		1	R2.7		1	R2.1	
15	3	R2.4		2	R2.4		1	R2.7		2	R2.1	
16	1	N/A		1	R2.1		1	R2.7		1	R2.1	
17	2	R1.2		1	R1.6		1	R1.6		1	R1.2	
18	2	R1.6		2	R1.6	R1.2	1	R1.6		1	R1.6	
19	2	N/A		1	R2.1		1	R2.1		1	R2.1	
20	2	R1.2		2	R1.6		1	R1.5		1	R1.3	
21	3	R2.5		2	R2.5		1	R2.5		2	R2.1	
22	3	R2.3		2	R2.3		2	R2.6		2	R2.3	
23	1	R2.6		2	R2.6		2	R2.6		2	R2.5	

**Grade 4 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	2	N/A		2	R3.1		1	R3.1		1	R3.1	
25	2	R3.2		2	R3.2		2	R3.2		2	R3.2	
26	2	R2.3		2	R3.3		2	R3.2		2	R3.3	
27	2	R1.2		1	R1.2		1	R1.2		1	R1.2	
28												
29												
30												
31												
32												
33												
34	1	WS1.6		1	WS1.7		1	WS1.7		1	W1.6	
35	1	W1.2		1	W1.2		1	W1.2		1	W1.1	W1.2
36	3	WS1.1		2	R3.2		2	R2.3		1	WS1.1	
37	1	WS1.6		2	W1.6		1	WS1.6		1	WS1.8	
38	1	W1.1		3	R2.3		3	WS1.10		2	WS1.2.3	
39	1	W1.7		1	W1.7		1	W1.7		1	W1.7	
40	2	WS1.2.3		2	R2.3		2	WS1.2.3		2	WS1.2.3	
41	1	W1.6		1	W1.6		1	W1.6		1	W1.6	
42	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
43	2	WS1.1		3	R2.1		2	R2.1		2	WS1.1	
44	1	WS1.8		2	WS1.8		1	WS1.8		1	WS1.8	
45	2	WS1.2.4		3	R2.3		2	WS1.2.4		3	WS1.2.4	
46	2	W1.2		2	W1.2	W1.1	1	W1.2		2	WS1.10	
47	1	W1.7		1	W1.7		1	W1.7		1	W1.7	

**Grade 4 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
48												
49												
50	2	WS1.2.3		2	R1.2		1	R2.1		2	WS1.2.2	
51	1	N/A		1	W1.1		1	W1.1		1	W1.1	
52	1	W1.7		1	W1.3		1	W1.3		1	W1.3	
53	1	W1.3										
54	2	WS1.2.2		2	R2.3		2	WS1.2.2		2	WS1.2.2	
55	1	W1.7		1	W1.7		1	WS1.7		1	W1.7	
56	1	W1.3										
57	1	R1.6		2	R1.6		1	R1.6		2	R1.6	

**Grade 4 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	R1.4		1	R1.4		1	R1.3		1	R1.4	R1.3
2	2	R1.6		2	R1.6		1	R1.5		2	R1.6	
3	2	R1.4	R1.2	1	R1.4		1	R1.5		2	R1.4	R1.2
4	2	R1.6		2	R1.6	WS1.7	1	R1.3		2	N/A	
5	2	R1.2		2	R1.2		1	R1.2		2	R1.2	
6												
7	1	R3.2		1	R2.6		2	R2.3		2	R2.1	
8	2	R3.2		2	R3.2		2	R2.3		2	R3.2	
9	2	R1.2		1	R1.2		1	R1.5		2	R1.2	
10	2	R1.2		2	R1.2		2	R1.2		2	R1.2	R3.5
11	2	R3.4	R2.5	2	N/A		2	R2.5		2	R2.5	
12	1	R2.7		2	R2.7		2	R2.7		2	R2.7	
13	2	R2.3		2	R2.3		3	R2.4		3	R2.7	
14	1	R2.7		1	R2.3		3	R2.4		2	R2.7	
15	2	R2.3		2	R2.3		2	R2.3		3	R2.3	
16	1	R2.7	R2.3	2	R2.6		3	R2.4		2	R2.7	
17	2	R1.2		1	R1.2		2	R1.2		1	R1.2	
18	2	R1.6		2	R1.6		2	R1.2		2	R1.6	
19	2	R2.3		2	R2.1		2	R2.3		2	R2.1	
20	2	R1.2		1	R1.2		1	R2.3		2	N/A	R1.2
21	3	R2.5		2	R2.5		2	R2.5		3	R2.5	
22	2	R2.3		2	R2.3		2	R2.3		3	R2.3	
23	3	R2.6		2	R2.5	R2.6	2	R2.1		2	R2.6	

**Grade 4 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	2	R3.1		2	R3.1		2	R2.3		2	R3.1	
25	2	R3.2		2	R2.3		2	R2.3		2	R3.2	
26	1	R3.2	R3.3	2	R3.3		2	R2.3		2	R2.1	R3.2
27	2	R1.2		1	R1.2		1	R1.5		1	R1.2	
28												
29												
30												
31												
32												
33												
34	1	WS1.7		1	WS1.7		1	WS1.7		1	WS1.6	WS1.7
35	2	W1.2		3	W1.2		2	R2.1		2	W1.2	
36	2	WS1.1		2	WS1.1		3	R2.4		2	WS1.1	
37	2	WS1.6		1	WS1.6		1	WS1.6		1	W1.6	
38	3	WS1.10		3	WS1.10		2	R2.3		3	WS1.2.2	
39	1	W1.7		1	W1.7		1	W1.7		1	WS1.7	
40	3	WS1.10		3	WS1.10		3	R2.4		3	WS1.2.3	WS1.10
41	1	W1.6		1	W1.6		1	W1.6		1	W1.6	
42	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
43	2	WS1.1		2	WS1.1		1	R2.3		3	WS1.1	
44	2	WS1.8		1	WS1.8		2	R2.3		1	WS1.8	
45	3	WS1.10	WS1.2.4	3	WS1.10		2	R2.3		2	WS1.2.4	WS1.10
46	2	W1.2		3	W1.2		1	WS1.1		2	W1.2	
47	1	W1.7		1	W1.7		1	W1.7		1	W1.7	

**Grade 4 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
<b>48</b>												
<b>49</b>												
<b>50</b>	3	WS1.10		3	WS1.10		3	R2.4		2	WS1.2.3	
<b>51</b>	1	W1.1		2	N/A		2	W1.1		1	W1.1	
<b>52</b>	1	W1.3										
<b>53</b>	1	W1.3										
<b>54</b>	3	WS1.10	WS1.2.2	3	WS1.2.2	WS1.10	3	R2.4		2	WS1.2.2	
<b>55</b>	1	W1.7										
<b>56</b>	1	W1.3										
<b>57</b>	2	R1.6										

**Table E3:**  
**Grade 5 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.4		1	R1.4		1	N/A		1	R1.2	
2	1	R1.3		1	R1.3		1	N/A		1	R1.2	
3	2	R1.2		2	R1.4		1	R1.4		1	R1.4	
4	2	R1.2		2	R1.2		1	R1.4		1	R1.4	
5	2	R1.5		1	R1.5		1	R1.5		2	R1.5	
6	1	R1.5		1	R1.5		1	R1.3		2	R1.5	
7	2	R3.1		1	R3.1		1	R3.1		2	R3.1	
8												
9	1	R1.3		1	R1.3		1	R1.3		1	R1.3	
10	2	R1.5		2	R1.5		1	R3.5		2	R1.5	R3.5
11	2	R3.1		2	R3.2		2	R3.2		2	R3.2	
12	2	R3.5		3	R3.7		2	R3.7		2	R3.7	
13	3	R3.4		2	R3.2		2	R3.4		3	R3.4	
14	1	N/A		1	R2.2		1	R2.2		2	R2.2	
15	2	N/A		1	R2.2		1	R2.2		2	R2.2	
16	2	R2.4		2	R2.4	R2.3	2	R2.4		3	R2.4	
17	2	R2.5		2	R2.4		1	R2.5		2	R2.5	
18	2	R2.2		1	R2.1		1	R2.2		2	R2.2	
19	2	R3.2		2	R2.3	R3.2	1	R3.2		2	R3.2	
20	3	R2.4		2	R2.3	R3.2	2	R2.4		2	R3.3	
21	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
22	2	R1.5		2	R3.5	R1.5	2	R3.5		2	R1.5	
23	2	R2.5		1	R2.1		1	R2.2		1	R2.5	
24	1	N/A		1	R2.1		1	R2.2		1	R2.1	

**Grade 5 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
25	3	R2.4		2	R2.4		2	R2.4		2	R2.4	
26	2	R2.3		1	R2.3	R2.4	1	WS1.2.1		2	R2.3	
27	2	R1.2		1	R1.4		1	R1.4		1	R1.4	
28												
29												
30												
31												
32												
33												
34	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
35	3	WS1.6	WS1.2.2	2	R2.3	WS1.1.2	3	WS1.6		1	WS1.1.1	
36	1	W1.5		1	W1.5		1	W1.5		1	WS1.5	
37	1	N/A		1	N/A		1	WS1.3		1	WS1.3	
38	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
39	1	W1.1		1	W1.1		2	W1.1		2	W1.1	
40	1	W1.1		1	W1.1		2	WS1.2.2		1	WS1.2.2	
41	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
42	3	WS1.6		1	R2.4	WS1.1.2	2	WS1.6		2	WS1.1.3	
43	1	W1.5		2	W1.1		1	W1.1		1	W1.1	
44	1	W1.2		1	W1.2		1	W1.2		1	W1.2	
45	1	W1.1		1	W1.1		1	W1.1		1	W1.1	
46	1	W1.2		1	W1.2		1	W1.2		1	W1.2	
47	1	W1.1		1	W1.1		1	W1.1		2	W1.1	
48	1	W1.1		1	W1.1		1	W1.1		2	W1.1	

**Grade 5 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
49	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
50	1	WS1.5		1	WS1.5		1	WS1.5		1	WS1.5	
51	3	WS1.6	WS1.2.2	2	R2.3	WS1.1.1	3	WS1.6		2	WS1.2.1	
52	3	WS1.1.3		2	R2.4		2	WS1.1.3		3	WS1.1.3	
53	2	WS1.2.1		2	WS1.1.2		2	WS1.2.1		2	WS1.2.1	
54	2	WS1.1.2		1	R2.3		2	WS1.1.2		1	WS1.1.2	
55												
56												
57	2	WS1.1.1		2	R2.4		2	WS1.1.1		2	WS1.1.1	

**Grade 5 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	2	R1.4		1	R1.4		1	R1.4		1	R1.4	
2	1	R1.3		1	R1.3		1	R1.3		2	R1.3	
3	1	R1.4	R1.2	1	R1.4		1	R1.4		1	R1.4	R1.2
4	1	R1.2	R1.4	1	R1.2		1	R1.4		1	R1.2	
5	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
6	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
7	1	R3.1		1	R3.1		2	R3.1		2	R3.1	
8												
9	1	R1.3		1	R1.3		1	R1.3		2	R1.3	
10	2	R1.5	R3.5	2	R3.5	R1.5	1	R1.5		2	R3.5	R1.5
11	2	R3.2		2	R3.2		2	R2.4		2	R3.2	
12	3	R3.7		2	R3.7		2	R2.4		3	N/A	
13	3	R3.4		3	R3.4		2	R2.4		3	R3.4	
14	1	R2.2		2	R2.2		1	R2.5		2	R2.2	R2.1
15	1	R2.2		2	R2.2		1	R2.5		2	R2.2	R2.1
16	2	R2.4		2	R2.4		1	R2.4		2	R2.4	
17	2	R2.5		2	R2.5		1	R2.5		2	R2.5	
18	2	R2.2		2	R2.1	R2.2	2	R2.2		2	R2.1	
19	2	R3.2		2	R3.2		2	R2.3		2	R3.2	
20	2	R2.4		2	R3.3		2	R2.4		2	R2.2	
21	2	R1.5		2	R1.5		1	R1.5		2	R1.5	
22	3	R3.7	R3.4	2	R3.5		2	R2.4		2	R1.5	
23	1	R2.5		1	R2.3		2	R2.5		2	R2.1	

**Grade 5 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	2	R2.1		1	R2.1		1	R2.5		2	R2.1	
25	2	R2.4		2	R2.4		2	R2.4		2	R2.4	R2.3
26	3	R2.3		2	R2.3		2	R2.4		3	R2.3	
27	2	R1.4		2	R1.4		1	R1.4		2	R1.2	R1.4
28												
29												
30												
31												
32												
33												
34	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
35	3	WS1.6		3	WS1.6		1	WS1.1.1		3	WS1.6	
36	1	W1.5		1	WS1.5		1	W1.5		1	W1.5	
37	1	WS1.3		1	N/A		1	WS1.1.3		1	N/A	
38	1	W1.4		1	W1.4		1	W1.4		1	W1.3	
39	2	W1.1	WS1.6	2	W1.1		1	W1.1		2	W1.1	
40	2	W1.1	WS1.6	1	WS1.2.2	W1.1	1	W1.1		2	W1.1	
41	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
42	3	WS1.6		3	WS1.6		2	WS1.1.3		3	WS1.2.3	WS1.6
43	2	W1.1	WS1.6	3	WS1.6		2	W1.1		2	W1.1	
44	1	W1.2		1	W1.2		1	W1.2		1	W1.2	
45	2	W1.1	WS1.6	2	W1.1		1	W1.1		2	W1.1	
46	1	W1.2		1	W1.2		1	W1.1		1	W1.2	
47	2	W1.1	WS1.6	2	W1.1		1	W1.1		2	W1.1	

**Grade 5 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
<b>48</b>	2	W1.1	WS1.6	3	W1.1	WS1.6	1	W1.1		2	W1.1	
<b>49</b>	1	W1.3										
<b>50</b>	1	WS1.5		1	WS1.5		1	R1.3		2	WS1.5	
<b>51</b>	3	WS1.6		3	WS1.6		2	R2.4		3	WS1.2.2	WS1.6
<b>52</b>	2	WS1.1.3		3	WS1.1.3	WS1.6	2	R2.4		3	WS1.1.3	WS1.6
<b>53</b>	2	WS1.2.1		3	WS1.2.1		2	R2.4		2	WS1.2.1	
<b>54</b>	2	WS1.1.2		2	WS1.1.2		1	R1.5		2	WS1.1.2	
<b>55</b>												
<b>56</b>												
<b>57</b>	2	WS1.1.1		2	WS1.1.1		2	WS1.1.1		3	WS1.2.2	WS1.1.1

**Table E4:**  
**Grade 6 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.4		2	R1.4		1	R1.5		2	R1.4	
2	2	R1.4		2	R1.2		2	R1.2		2	R1.2	
3	2	R1.4		2	R1.2		2	R1.2		2	R1.2	
4												
5	1	R1.2		2	R1.4		1	R1.4		2	R1.4	
6	2	R1.4										
7	1	R3.5										
8	1	R3.1										
9	3	R3.3		3	R3.3		3	R3.3		2	R3.3	
10	3	R3.2		3	R3.2		3	R3.2		2	R3.2	
11	3	R3.2		2	R3.2		3	R3.1		2	R3.2	
12	3	R3.6										
13	2	R1.2		2	R3.7		1	R1.4		2	R1.5	
14	2	R1.5		2	R1.5		2	R1.2		2	R1.5	
15	2	R2.1		1	R2.1		1	R2.1		2	R2.1	
16	2	R2.2		1	R2.2		2	R2.2		1	R2.2	
17	2	R2.2		2	R2.7		3	R2.7		2	R2.7	
18	3	R2.7		2	R2.7		3	R2.6		2	R2.6	
19	3	R2.7		2	R2.3		3	R2.7		2	R2.8	
20	2	R2.4		1	R2.4		2	R2.4		2	R2.4	
21	1	R1.3										
22	3	R3.6										
23	3	R3.7		2	R3.7		2	R3.7		2	R3.7	

**Grade 6 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	3	R3.4		3	R3.4		3	R1.2		2	R3.4	
25	2	R2.8		1	R2.8		2	WS1.1		2	R2.8	
26	1	R2.1		2	R2.3		1	R2.1		2	R2.2	
27	3	R2.7		1	R2.7		1	R2.5		1	R2.5	
28	2	R2.4		1	R2.7		1	R2.5		1	R2.5	
29	1	R2.1		1	R2.7		3	R2.3		1	R2.1	
30	1	R2.1		2	R2.3		3	R2.1		2	R2.3	
31	3	R2.7		1	R2.3		1	R2.1		2	R2.3	
32	1	R1.2		1	R1.2		2	R1.2		2	R1.2	
33												
34												
35												
36												
37												
38												
39	1	WS1.1		3	R2.7		3	R2.6		3	WS1.1	
40	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
41	1	R1.2		1	R1.2		1	R1.5		2	WS1.2.2	
42	1	R1.2		1	R1.5		1	R1.5		2	WS1.2.2	
43	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
44	3	WS1.3		1	R2.3		3	R2.7		1	WS1.3	
45	3	R2.6		2	R2.6		2	R2.8		2	WS1.2.2	
46	3	WS1.3		1	R2.3		2	WS1.3		1	WS1.3	
47	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
48	1	W1.3		1	W1.3		2	W1.3		1	W1.3	

**Grade 6 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
49	2	W1.1		1	W1.1		2	R2.3		1	W1.1	
50	1	W1.4										
51	1	WS1.1		3	R2.3		3	WS1.1		2	WS1.1	
52	2	WS1.2.3		2	R2.3		3	R2.6		2	WS1.2.3	
53												
54												
55	1	W1.4										
56	2	W1.1		1	W1.1		2	W1.1		1	W1.1	
57	1	W1.4										
58	2	W1.1		1	W1.1		1	W1.1		2	W1.1	
59	1	W1.2										
60	1	W1.5										
61	3	WS1.2.2		1	W1.1		3	R2.7		2	WS1.6	
62	2	WS1.4		1	WS1.4		1	WS1.4		1	WS1.4	
63	2	W1.1		1	W1.1		2	R2.3		1	WS1.6	W1.1

**Grade 6 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	2	R1.4		2	R1.2		1	R1.2		2	R1.4	
2	1	R1.3		1	R1.2		1	R1.4		1	R1.2	
3	1	R1.2		1	R1.2		1	R1.4		1	R1.2	
4												
5	2	R1.4		2	R1.3		1	R1.2		2	R1.4	R1.5
6	1	R1.2		2	R1.2		2	R1.2		2	R1.4	
7	1	R3.5		1	R3.5		3	R3.5		1	R3.5	
8	1	R3.1		1	R3.1		1	R3.1		1	R3.1	
9	3	R3.2		2	R2.7		1	R3.3		3	R3.3	
10	3	R3.2		2	R2.7		1	R3.2		3	R3.2	
11	3	R3.2		3	R3.6		2	R3.2		3	R3.2	
12	1	R3.6		3	R3.6		2	R3.5		3	R3.6	
13	2	R1.4		2	R1.2		1	R1.2		2	R1.5	
14	3	R1.5		2	R1.5		2	R1.4		2	R1.5	
15	1	R2.1		2	R2.7		1	R2.7		1	R2.1	
16	1	R2.2		2	R2.7		1	R2.2		1	R2.2	
17	1	R2.6	R2.7	2	R2.6		2	R2.6		1	R2.2	R2.7
18	1	R2.7		3	R2.6		2	R2.6		1	R2.2	R2.6
19	3	R2.6		2	R2.7		2	R2.3		1	R2.6	
20	1	R2.1		2	R2.4		1	R2.4		1	R2.4	
21	1	R1.3		1	R1.3		1	R1.3		1	R1.3	
22	1	R3.6		3	R3.6		2	R3.5		3	R3.6	
23	3	R3.4		3	R3.7		2	R3.6		2	R3.7	

**Grade 6 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	3	R3.4		3	R3.4		2	R3.4		3	R3.4	
25	2	R2.6		2	R2.6		2	R2.7		2	R2.8	
26	1	R2.1		1	R2.1		2	R2.1		1	R2.1	
27	2	R2.7		2	R2.3		1	R2.7		1	R2.5	
28	1	R2.7		2	R2.3		1	R2.7		1	R2.5	
29	1	R2.1		2	R2.7		2	R2.3		1	WS1.1	WS1.3
30	1	R2.1		2	R2.3		2	R2.3		2	WS1.1	
31	1	R2.3		2	R2.3		2	R2.6		2	R2.3	
32	1	R2.1		1	R1.2		2	R1.4		1	R1.4	
33												
34												
35												
36												
37												
38												
39	1	W1.5		3	R3.6		1	R2.6		1	WS1.1	
40	1	W1.5		1	W1.5		1	R1.2		1	W1.5	
41	1	WS1.2.2		1	R1.5		1	R1.2		1	WS1.2.2	
42	1	WS1.2.2		1	R1.5		1	R1.2		1	WS1.2.2	
43	1	W1.3		1	W1.3		1	R1.4		1	W1.3	
44	1	WS1.3		2	WS1.3		2	R2.7		1	WS1.3	
45	3	WS1.6		2	WS1.2.2		2	R2.3		2	WS1.6	
46	1	WS1.3		2	WS1.3		2	R2.7		1	WS1.3	
47	1	W1.5		1	W1.5		1	W1.5		1	W1.5	

**Grade 6 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
48	1	W1.3										
49	2	W1.1		2	WS1.6		1	W1.1		2	WS1.6	
50	1	W1.4		1	W1.4		1	WS1.4		1	W1.4	
51	1	WS1.1		1	WS1.1		1	WS1.1		2	WS1.1	
52	1	WS1.2.3		2	WS1.2.3		1	WS1.2.3		3	WS1.2.3	
53												
54												
55	1	W1.4										
56	1	W1.1		2	W1.1		1	W1.1		2	WS1.6	
57	1	W1.4										
58	2	W1.1		2	W1.1		1	W1.1		2	W1.1	
59	1	W1.2										
60	2	W1.5		1	W1.5		1	W1.5		1	W1.5	
61	2	W1.1		2	WS1.6		2	W1.1		2	WS1.6	
62	1	WS1.4		1	WS1.4		1	R2.1		1	WS1.4	
63	2	W1.1		2	WS1.6		1	W1.1		2	WS1.6	

**Table E5:  
Grade 7 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.1		1	R1.1		1	R1.1		2	R1.1	
2												
3	1	R1.2		1	R1.2		2	R1.2		2	R1.2	
4	1	R1.3		1	R1.3		1	R1.3		2	R1.3	
5	1	R1.3		2	R1.3		1	R1.3		2	R1.3	
6	3	R3.3		2	R3.3		3	R3.3		2	R3.3	
7	3	R3.3		2	R3.3		3	R3.2		2	R3.2	R3.3
8	3	R3.3		2	R3.3		3	R3.2		2	R3.2	R3.3
9	3	R3.4		3	R3.4		3	R3.4		3	R3.4	
10	2	R3.1		3	R3.1		3	R3.1		2	R3.1	
11	1	R1.3		1	R1.3		1	R1.3		2	R1.3	
12	1	R1.2		1	R1.2		2	R1.2		2	R1.2	
13	1	R2.5		1	R2.5		1	R2.2		1	R2.5	
14	1	R2.5		1	R2.3		1	R2.3	R2.2	1	R2.2	
15	2	R2.1		2	R2.1		2	R2.2	R2.5	2	R2.5	
16	1	R2.2		1	R2.2		1	R2.2	R2.5	1	R2.5	
17	3	R3.3		2	R3.3		2	R3.2		2	R3.2	
18	3	R3.2		2	R3.1		3	R3.2		2	R3.6	
19	3	R3.3		2	R3.3		3	R3.3		2	R3.3	
20	3	R3.5		3	R3.5		3	R3.5		3	R3.5	
21	1	R1.3		2	R1.3		1	R1.3		2	R1.3	
22	2	R2.1		2	R2.1		3	R2.4	R2.6	2	R2.1	
23	1	R1.3		1	R1.3		1	R1.3		2	R1.3	

**Grade 7 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	1	R2.5		1	R2.5		2	R2.5	R2.2	1	R2.5	
25	1	R2.5		1	R2.5		1	R2.5	R2.2	1	R2.5	
26	1	R2.5		1	R2.5	R2.2	1	R2.5	R2.2	1	R2.5	
27	2	R2.3		1	R2.3		1	R2.2		2	R2.3	
28	1	R2.2		1	R2.2		1	R2.2		1	R2.2	
29	1	R2.2		2	R2.2		2	R2.2		1	R2.2	
30	3	R2.4		3	R2.4		3	R2.4	R2.2	3	R2.4	
31	3	R2.6		3	R2.6		3	R2.1	R2.2	3	R2.6	
32												
33												
34												
35												
36												
37												
38	2	WS1.1		1	WS1.1		2	WS1.1		2	WS1.1	
39	2	WS1.3		2	WS1.3		2	WS1.3		2	WS1.3	
40	3	R2.6		2	WS1.2		2	R2.6		3	WS1.2	
41	3	WS1.2		3	WS1.2		3	R2.6		3	WS1.4	
42	1	WS1.5		1	WS1.5		1	WS1.5		1	WS1.5	
43	2	WS1.1		1	W1.3		2	WS1.3		2	WS1.1	
44	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
45	1	W1.7		1	W1.7		1	W1.7		1	W1.7	
46	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
47	1	W1.4		1	W1.2		1	W1.2		1	W1.2	W1.4

**Grade 7 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
<b>48</b>	3	WS1.2		2	WS1.2		2	WS1.2		3	WS1.2	
<b>49</b>	1	W1.5										
<b>50</b>	1	W1.6										
<b>51</b>	1	W1.7										
<b>52</b>	1	W1.3										
<b>53</b>	1	W1.6										
<b>54</b>												
<b>55</b>												
<b>56</b>	2	WS1.3		2	WS1.3		2	WS1.4		2	WS1.3	
<b>57</b>	3	WS1.7		2	WS1.7		2	W1.1		2	W1.1	
<b>58</b>	3	WS1.7		1	W1.1		2	W1.1		2	WS1.7	
<b>59</b>	3	WS1.7		2	W1.4		2	W1.1		2	WS1.7	
<b>60</b>	1	W1.4		1	W1.5		1	WS1.5		1	W1.4	
<b>61</b>	1	W1.4		1	W1.4		1	WS1.5		1	W1.4	
<b>62</b>	3	WS1.7		2	WS1.7		2	R1.3		2	WS1.7	
<b>63</b>	3	WS1.4		2	WS1.4		3	W1.5		3	WS1.4	

**Grade 7 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	R1.1		1	R1.1		1	R1.1		1	R1.1	
2												
3	1	R1.2		1	R1.2		1	R1.2		1	R1.2	
4	1	R1.3		2	R1.3		1	R1.3		1	R1.3	
5	1	R1.3		2	R1.3		1	R1.3		1	R1.3	
6	3	R3.2	R3.3	3	R3.3		3	R3.3		2	R3.3	
7	3	R3.3	R3.2	3	R2.3		2	R3.3		2	R3.3	
8	3	R3.3	R3.2	3	R3.3		2	R3.3		2	R3.3	
9	2	R3.4		3	R3.4		2	R3.4		3	R3.4	
10	2	R3.1		2	R2.4		2	R2.4		2	R3.1	
11	1	R1.3		1	R1.3		1	R1.3		1	R1.3	
12	1	R1.2		1	R1.2		1	R1.2		1	R1.2	
13	1	R2.5		1	R2.5	R2.2	1	R2.2		1	R2.3	
14	1	R2.5		2	R2.5	R2.3	1	R2.2		1	R2.3	
15	1	R2.5		2	R2.2		2	R2.2		2	R2.5	
16	1	R2.5		2	R2.5	R2.2	1	R2.2		1	R2.3	
17	1	R3.2		2	R3.2		1	R2.4		1	R3.2	
18	3	R3.1		3	R3.3		2	R2.4		2	R3.6	
19	3	R3.3		3	R3.3		2	R2.4		2	R3.3	
20	3	R3.3		3	R3.3		2	R2.4		2	R3.5	
21	1	R1.3		2	R1.3		2	R1.3		1	R1.3	
22	1	R2.1		2	R2.4	R2.1	2	R2.2		2	R2.1	
23	1	R1.3		1	R1.3		1	R1.3		1	R1.2	

**Grade 7 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	1	R2.5		2	R2.2		1	R2.2		1	R2.5	
25	1	R2.5		2	R2.2		1	R2.2		1	R2.5	
26	1	R2.5		2	R2.2		1	R2.2		1	R2.3	
27	1	R2.3	R2.2	1	R2.2		2	R2.4		1	R2.2	
28	1	R2.2		1	R2.2		1	R2.4		1	R2.2	
29	1	R2.2		2	R2.2		1	R2.4		1	R2.2	
30	2	R2.4		3	R2.4		2	R2.4		2	R2.4	
31	3	R2.6	WS1.2	3	R2.1		2	R2.4		2	WS1.2	
32												
33												
34												
35												
36												
37												
38	3	WS1.7	W1.5	3	WS1.7		1	W1.1		2	WS1.1	
39	1	R2.3		2	WS1.3		2	R2.4		1	WS1.3	
40	2	R3.3		3	R3.3		2	R2.4		2	WS1.2	
41	1	N/A		2	WS1.4		2	R2.4		1	R2.2	WS1.2
42	1	WS1.5		1	WS1.5		1	WS1.5		1	WS1.5	
43	1	WS1.7		3	WS1.7		1	R1.3		2	WS1.1	
44	1	W1.3		1	W1.3		1	W1.3		1	W1.3	
45	1	W1.7		1	W1.7		1	W1.7		1	W1.7	
46	1	W1.4		1	W1.5		1	W1.4		1	W1.4	
47	1	R1.2		1	W1.2		1	W1.2		1	W1.2	

**Grade 7 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	2	WS1.2		2	R3.2		1	R2.4		2	WS1.2	
49	1	W1.5		1	W1.5		1	R1.3		1	W1.5	
50	1	W1.6		1	W1.6		1	W1.6		1	W1.6	
51	1	W1.7		1	W1.7		1	W1.7		1	W1.7	
52	1	W1.3		1	W1.5		1	W1.5		1	W1.3	
53	1	W1.6		1	W1.6		1	W1.6		1	W1.6	
54												
55												
56	1	WS1.3		2	WS1.3	WS1.1	2	R2.1		2	WS1.3	
57	2	WS1.7		2	WS1.7		1	W1.1		2	WS1.7	
58	2	WS1.7		3	WS1.7		2	W1.1		2	W1.1	
59	2	WS1.7		3	WS1.7		2	W1.1		2	WS1.7	
60	1	W1.4		1	WS1.5		1	W1.5		1	W1.4	
61	1	W1.4		1	W1.5		1	W1.4		1	W1.4	
62	3	WS1.7		2	WS1.7	R1.3	1	R1.3		1	WS1.7	
63	3	WS1.4		3	WS1.4		3	R3.2		2	WS1.4	

**Table E6:  
Grade 8 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R1.1		1	R1.1		1	R1.1		2	R1.1	
2												
3	1	R1.2		1	R1.2		1	R1.2		2	R1.2	
4	3	R3.2		1	R3.2		1	R3.2		3	R3.2	
5	2	R1.1		2	R1.1		2	R3.4		2	R1.1	
6	3	R3.2		2	R3.1		2	R3.1		2	R3.6	
7	3	R3.6		2	R3.6		2	R1.1		3	R3.6	
8	3	R3.2		3	R3.2		2	R3.2		2	R3.2	
9	2	R1.3		1	R1.3		1	R1.3		2	R1.3	
10	3	R3.3		3	R3.3		2	R3.3		3	R3.3	
11	3	R3.2		3	R3.4		2	R3.4		3	N/A	
12	3	R3.5										
13	1	R2.5		1	R2.1		1	R2.4		1	R2.5	
14	2	R2.6		1	R2.1		1	R2.5		1	R2.5	
15	2	R2.2		3	R2.1		2	R2.2		2	R2.2	
16	2	R1.3		1	R1.3		1	R1.3		2	R1.3	
17	3	R2.3		2	R2.3		3	R2.3		3	R2.3	
18	3	R2.7		3	R2.3		2	R2.2		2	R2.2	
19	3	R2.4		3	R2.4		3	R2.7		2	R2.4	
20	1	R2.5										
21	3	R2.4		3	R2.7		3	R2.6		3	R2.7	
22	3	R2.3		3	R2.3		2	R2.2		3	R2.3	R2.1
23	3	R2.6		1	R2.1		1	R2.2		1	R2.6	

**Grade 8 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	3	R2.4		3	R2.4		3	R2.2		2	R2.4	
25	3	R2.3		1	R2.3		1	R2.2		1	R2.3	R2.1
26	3	R2.6		1	R2.1		1	R2.5		1	R2.6	
27	3	R2.3		2	R2.3		1	R2.4		1	R2.3	R2.1
28	3	R3.7		3	R3.1		3	R3.1		3	R3.1	
29	3	R3.1		1	R3.1		1	R3.1		1	R3.1	
30	3	R3.2		2	R3.3		3	R3.7		2	N/A	
31	2	R1.3		1	R1.3		2	R1.3		2	R1.3	
32												
33												
34												
35												
36												
37												
38	2	W1.3		2	W1.3		2	R1.1		2	W1.3	W1.1
39	1	W1.4		1	W1.4		2	W1.3		1	W1.2	
40	3	WS1.6		1	W1.2		2	W1.1		2	WS1.6	
41	1	W1.5										
42	3	WS1.6		2	W1.3		2	W1.3		2	WS1.6	
43	3	WS1.1										
44	2	W1.3		2	W1.3		2	W1.3		2	W1.3	W1.1
45	2	W1.3		1	W1.3		2	WS1.3		2	W1.3	
46	1	W1.4		1	W1.4		2	W1.4		1	W1.4	
47	3	WS1.6		1	WS1.2		3	WS1.6		2	WS1.2	

**Grade 8 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
48	3	WS1.6		2	WS1.6		1	WS1.6		2	WS1.6	
49	3	WS1.3										
50	1	W1.5		1	W1.5		1	WS1.6		1	W1.5	
51	2	W1.3		1	WS1.2		1	W1.3		2	W1.3	
52	3	WS1.1		3	WS1.1		2	WS1.1		2	WS1.1	
53	3	WS1.6		1	WS1.6		1	WS1.6		2	WS1.6	
54	3	WS1.6		1	WS1.2		1	WS1.2		2	WS1.2	
55												
56												
57	3	WS1.3		3	WS1.1		2	WS1.1		3	WS1.1	
58	3	WS1.6		1	WS1.2		1	WS1.2		3	WS1.2	
59	1	W1.6		1	W1.5		1	W1.6		1	W1.6	
60	3	WS1.6		2	WS1.6		3	WS1.6		3	WS1.6	
61	1	W1.6		1	W1.5		1	W1.6		1	W1.6	
62	3	W1.6		2	W1.6		1	WS1.6		3	W1.6	
63	2	W1.2		1	W1.2		2	W1.2		2	W1.2	

**Grade 8 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	R1.1		2	R1.1		1	R1.3		2	R1.1	
2												
3	1	R1.2		2	R1.2		1	R1.2		1	R1.2	
4	1	R3.2		2	R3.2		1	R3.6		1	R3.2	
5	1	R1.1		2	R1.1		2	R1.3		2	R1.1	
6	2	R3.6		2	R1.3		2	R3.1		2	R3.6	
7	2	R3.6		2	R1.3		1	R3.6		2	R3.6	
8	1	R3.2		2	R3.2		2	R3.2		1	R3.2	
9	1	R1.3		1	R1.3		1	R1.3		1	R3.1	
10	2	R3.2		2	R3.3	R2.3	2	R3.3		2	R3.3	
11	2	R2.3		3	R3.5		2	R3.4		1	R3.4	
12	3	R3.5		3	R3.5		2	R3.5		2	R3.5	
13	1	R2.6		2	R2.5		1	R2.5		1	R2.1	
14	1	R2.6		2	R2.6		1	R2.5		1	R2.1	
15	2	R2.6		3	R2.2		2	R2.5		2	R2.2	
16	1	R1.3		2	R1.3		1	R1.3		2	R1.3	
17	2	R2.1	R2.6	2	R2.1		2	R2.3		2	R2.3	
18	1	R2.7		3	R2.7		1	R2.1		2	R2.7	
19	2	R2.4		2	R2.4		2	R2.2		1	R2.4	
20	1	R2.6		1	R2.6		1	R2.2		1	R2.5	
21	2	R2.5		2	WS1.6	R2.1	2	R2.7		2	R2.7	
22	2	R2.1		3	R2.1		2	R2.3		2	R2.3	
23	2	R2.1	R2.2	2	R2.2		1	R3.2		1	R2.2	

**Grade 8 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	2	R2.4		2	R2.4		2	R3.2		2	R2.4	
25	1	R2.1		2	R2.1		2	R2.1		1	R2.1	
26	1	R2.5		1	R2.6		1	R2.2		1	R2.5	
27	1	R2.1		2	R2.1		2	R2.3		1	R2.3	
28	2	R3.1		3	R3.1		2	R3.1		2	R3.1	
29	1	R3.1		3	R3.6		1	R3.1		1	R3.1	
30	1	R3.7		2	R3.7		2	R3.1		2	R3.7	
31	2	R1.3		2	R1.3		1	R1.3		2	R1.3	
32												
33												
34												
35												
36												
37												
38	1	W1.1		3	WS1.6		1	W1.3		2	W1.3	
39	1	W1.4		1	W1.4		1	W1.2		1	W1.4	
40	3	W1.1	WS1.2	2	R1.3	WS1.6	2	W1.3		2	WS1.2	
41	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
42	3	WS1.6		3	WS1.6		1	W1.2		2	WS1.6	
43	3	WS1.1		3	WS1.1	WS1.6	2	WS1.3		2	WS1.1	
44	3	W1.3		3	WS1.2	WS1.6	1	W1.2		2	W1.3	
45	1	WS1.6		3	WS1.6		1	R1.3		2	WS1.6	
46	1	W1.4		1	W1.4		1	W1.2		1	W1.4	
47	3	WS1.6		3	WS1.2		2	W1.2		2	WS1.6	

**Grade 8 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
48	2	WS1.6		2	WS1.6	R1.3	1	W1.6		2	WS1.6	
49	1	WS1.3		3	R3.1	R3.6	2	WS1.3		2	WS1.3	
50	1	W1.5										
51	1	W1.3		2	WS1.3	WS1.6	1	W1.2		2	W1.3	
52	1	WS1.1		3	WS1.1		2	W1.3		2	W1.1	
53	1	WS1.6		2	R1.3	WS1.6	1	W1.1		2	WS1.6	
54	1	WS1.2		2	WS1.6		1	WS1.2		2	WS1.2	
55												
56												
57	3	WS1.1		3	WS1.1	R2.4	2	WS1.1		3	WS1.1	
58	1	WS1.2		1	WS1.6		1	WS1.2		2	WS1.2	
59	1	W1.6										
60	1	W1.1		2	W1.2		1	W1.1		2	WS1.6	
61	1	W1.6										
62	1	WS1.6		2	R1.3	WS1.6	1	R1.3		1	R1.3	
63	1	W1.4		1	W1.4		1	R1.3		1	W1.2	

**Table E7:**  
**Grade 9 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	R1.2		1	R1.1		2	R1.2		2	R1.2	
2	2	R1.3		1	R1.3		2	R1.3		2	R1.3	
3	2	R2.6		2	R2.3		3	R2.7		3	R2.7	
4												
5	2	R3.4		2	R3.4		2	R3.4		3	R3.3	
6	2	R1.2		2	R3.7		2	R3.11		2	R3.11	
7	2			3	R3.12		2	N/A		2	R3.6	
8	2	R3.1										
9	1	R1.1		2	R3.8		2	R3.6		3	R3.12	
10	1	R1.1		2	R3.7		2	N/A		2	R3.11	
11	1	R1.1		2	R3.4		2	R3.4		2	R3.4	
12	2	R3.8		3	R3.8		2	R3.8		3	R3.8	
13	2	R1.2		2	R3.7		1	R1.1		2	R1.2	
14	3	R3.2		3	R3.5		2	R3.5		3	R3.2	
15	3	R3.5										
16	1	R2.6										
17	1	R2.6		1	R2.6		2	R2.7		3	R2.7	
18	1	R2.1		3	R2.7		1	R2.6		1	R2.6	
19	1	R2.1		3	R2.1		3	R2.1		3	R2.1	
20	1	R2.1		2	R2.3		2	R2.1		2	R2.1	
21	1	R1.1		2	R2.3		2	N/A		2	R3.3	
22	2	R3.10		2	R3.1		2	R3.10		1	R3.1	
23	2	R3.7		2	R3.7		2	R3.7		1	R3.7	

**Grade 9 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	1	R1.1		1	R1.1		1	R1.1		2	R1.2	
25	2	R1.2		1	R1.1		1	R1.1		1	R1.1	
26	1	R2.1		2	R2.4		3	R2.1		2	R2.1	
27	1	R2.1		2	R2.4		2	R2.7		1	R2.6	
28	1	R1.1		1	R1.1		1	R1.1		1	R1.1	
29	2	R2.1		2	R2.4		2	R2.4		3	R2.4	
30	2	R2.1		3	R2.8		3	R2.7		3	R2.7	
31	3	R2.4		2	R2.3		3	N/A		2	R2.8	
32	2	R1.2		3	R2.4		2	R2.2		3	R2.4	
33	2	R2.3		2	R2.3		2	R2.3		2	R2.3	
34	1	R1.2		1	R1.1		1	R1.1		2	R1.2	
35												
36												
37												
38												
39												
40												
41	1	W1.1		2	W1.2		1	WS1.2		2	WS1.2	
42	1	W1.2		1	W1.2		1	W1.3		1	W1.3	
43	2	W1.3		3	WS1.5		2	WS1.1		2	WS1.1	
44	1	W1.1		1	W1.4		1	W1.1		1	W1.1	
45	1	W1.1		1	W1.4		1	W1.1		1	W1.1	
46	1	W1.1		2	W1.3		1	WS1.3		1	W1.3	
47	2	W1.2		3	WS1.3		2	WS1.4		2	WS1.4	

**Grade 9 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
48	3	W1.2		3	WS1.3		2	WS1.1		2	WS1.9	
49	1	W1.1		1	W1.4		1	W1.5	W1.1	1	W1.5	
50	2	N/A		2	R2.3		2	WS1.5		3	WS1.3	
51	1	W1.1		2	W1.2		1	W1.1		1	W1.1	
52	1	R1.1		1	R1.1		2	WS1.2		2	WS1.2	
53	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
54	2	W1.3		3	WS1.1		2	WS1.9		2	WS1.9	
55	2	W1.3		2	W1.2		2	W1.2		2	W1.2	
56	3	WS1.1		2	R2.3		2	WS1.4	WS1.1	3	WS1.1	
57	2	W1.1		2	WS1.5		3	N/A		3	WS1.5	
58	1	R2.2		1	WS1.7		1	W1.5		2	WS1.7	
59	1	W1.4		1	WS1.4		1	W1.4		1	W1.3	
60	2	N/A		2	WS1.5		2	WS1.5		3	WS1.3	
61	1	W1.4		1	W1.4		1	W1.2		1	W1.2	
62	1	WS1.2		2	W1.2		1	WS1.2		1	WS1.2	
63	2	WS1.2		3	WS1.2		2	WS1.2		2	WS1.2	
64	3	WS1.1		3	WS1.9		2	WS1.1		3	WS1.9	
65	3	WS1.3		3	WS1.9		2	W1.2		2	W1.2	
66	1	R2.2		1	WS1.7		1	W1.5		1	WS1.7	
67												
68												
69												
70	2	WS1.4		2	R2.3		3	WS1.1		2	WS1.9	

**Grade 9 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	2	R1.2		2	R1.1		2	R1.2		2	R1.2	
2	1	R1.3		2	R1.3		2	R1.3		1	R1.3	
3	2	R2.6		3	R2.1		2	R2.7		2	R2.1	
4												
5	2	R3.3		3	R3.3		3	R3.4		2	R3.4	
6	2	R3.12		2	R1.2		2	R3.9		3	R3.11	
7	2	R3.10		3	R3.9		2	R3.6		3	R3.3	
8	2	R3.1		2	R3.1		3	R3.1		2	R3.2	
9	3	R3.12		3	R3.8		2	R3.6		2	R3.6	
10	3	R3.11		3	R3.9		2	R3.9		3	R3.9	
11	2	R3.4		2	R3.4		3	R3.4		2	R3.4	
12	3	R3.8		3	R3.8		3	R3.8		3	R3.8	
13	2	R3.7		2	R1.2		1	R1.1		2	R1.2	
14	3	R2.4		3	R3.2		3	R3.4		3	R3.5	
15	3	R3.2		3	R3.2		3	R3.2		3	R3.5	
16	2	R2.6		1	R2.6		1	R2.6		3	R2.4	
17	2	R2.7		1	R2.6		2	R2.6		2	R2.7	
18	2	R2.7		1	R2.6		1	R2.6		2	R2.7	
19	1	R2.1		3	R2.1		2	R2.1		2	R2.1	
20	1	R1.2		3	R2.1		3	R2.7		2	R2.1	
21	2	R3.3		3	R3.3		1	R3.3		2	R3.3	
22	3	R3.10		2	R3.1		1	R3.11		2	R3.10	
23	1	R3.7		2	R3.7		1	R3.11		2	R3.7	

**Grade 9 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	1	R1.2		1	R1.1		1	R1.2		2	R1.2	
25	1	R1.1		2	R1.1		2	R1.2		2	R1.1	
26	1	R2.1		2	R2.2		2	R2.1		2	R2.1	
27	2	R2.7		3	R2.7		1	R2.1		2	R2.7	
28	1	R1.1		2	R1.1		2	R1.2		2	R1.2	
29	3	R3.5	R2.4	3	R2.4		3	R2.4		3	R2.4	
30	2	R3.11		3	R2.8		2	R2.7		2	R2.1	
31	2	R3.7					1	R2.8		2	R2.4	
32	2	R3.2					2	R2.2		2	R2.2	
33	2	R3.2		2	WS1.3		2	R2.3		3	R2.3	
34	1	R1.1		2	R1.1		1	R1.2		2	R1.2	
35												
36												
37												
38												
39												
40												
41	3	WS1.2		1	WS1.2		3	WS1.2		2	W1.2	
42	1	W1.2		1	R1.3		1	W1.3		2	W1.3	
43	3	WS1.9		3	WS1.9		3	WS1.1		2	WS1.1	
44	2	W1.2		1	W1.1		1	W1.1		2	W1.1	
45	1	W1.4		1	W1.1		2	W1.2		2	W1.4	
46	2	W1.2		1	WS1.2		1	W1.3		2	W1.3	
47	3	WS1.4	WS1.9	3	WS1.3		3	WS1.4		2	W1.1	

**Grade 9 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	3	W1.2		3	WS1.9		3	WS1.1		3	WS1.1	
49	1	WS1.4		1	W1.1		1	W1.5		3	WS1.5	
50	3	WS1.9		1	WS1.4		3	WS1.3		2	WS1.4	
51	2	W1.1		1	W1.1		1	W1.1		3	WS1.1	
52	1	W1.2		2	WS1.9		2	WS1.2		3	WS1.9	
53	1	W1.4										
54	3	WS1.2		3	WS1.9		3	WS1.1		3	WS1.9	
55	1	W1.2		1	W1.2		1	W1.2		3	W1.2	
56	2	WS1.4		3	WS1.1		2	WS1.4		3	WS1.1	
57	1	W1.5		2	WS1.3		3	WS1.3		2	WS1.3	
58	1	WS1.7		1	WS1.7		1	WS1.7		2	WS1.7	
59	1	W1.2		1	W1.3		1	W1.3		2	W1.4	W1.3
60	3	WS1.3		1	WS1.3		2	WS1.3		3	WS1.5	
61	1	W1.2		1	W1.2		1	W1.2		3	W1.2	
62	2	WS1.2		1	WS1.2		1	WS1.2		3	WS1.2	
63	3	WS1.2		1	WS1.2		1	W1.2		3	WS1.2	
64	2	WS1.1		3	WS1.9		3	WS1.1		2	WS1.1	
65	2	W1.3		3	WS1.9		3	WS1.2		3	WS1.9	
66	1	WS1.7		1	WS1.7		1	WS1.7		2	WS1.7	
67												
68												
69												
70	3	WS1.4		1	WS1.1		3	WS1.1		3	WS1.9	

**Table E8:  
Grade 10 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	R3.3		2	R2.3		3	N/A		2	R3.1	
2	2	R3.6		2	R3.6		2	R3.6		2	R3.6	
3	2	R3.9		3	R3.9		2	R3.9	R3.11	2	R3.9	
4	1	R1.2		2	R1.2		2	R1.2		2	R1.2	
5	2	R3.7		1	R1.1		2	R1.2		2	R3.7	
6	2	R1.3		2	R1.3		2	R1.3		2	R1.3	
7	2	R2.7		2	R2.1		3	R2.7		3	R2.7	
8	1	R2.1		2	R2.1		2	R2.1		3	R2.1	
9	2	R2.1		3	R2.4		3	R2.4		3	R2.4	
10	2	R2.1		3	R2.4		3	R2.4		3	R2.4	
11	2	R3.3		2	R3.3		2	N/A		2	R3.4	
12	1	N/A		1	R1.1		2	N/A	R3.4	1	R3.3	
13	2	R3.3		2	R3.7		3	R3.7		3	R3.7	
14	3	R3.5		2	R3.10		2	R3.10		2	R3.10	
15	2	R1.2		1	R1.1		1	R1.1		1	R1.1	
16	2	R3.7		2	R3.8		2	N/A		2	R1.1	
17	3	R3.11		3	R3.11		2	R3.11		2	R3.11	
18	2	R3.3		3	R3.12		2	R3.6		2	R3.12	
19	3	R3.8		1	R1.1		2	R3.8		2	R1.1	
20	1	R1.1		2	R1.3		2	R1.1		2	R1.3	
21	1	R1.1		1	R1.1		2	R1.1		2	R1.1	
22	2	R3.3		2	R2.3		2	R3.5		2	R2.8	
23	2	R2.3		2	R2.3		3	R2.3		3	R2.3	

**Grade 10 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	3	R3.9		3	R3.11		2	R3.9		2	R2.8	
25	2	R3.5		3	R3.2		3	R3.5	R2.4	3	R2.4	
26	3	R3.5		3	R3.5		3	R3.5		3	R2.4	
27	2	R2.3		2	R2.4		3	R2.3		3	R2.3	
28	1	R2.6		1	R2.1		1	R2.6		1	R2.6	
29	1	R2.6		1	R2.1		1	R2.6		1	R2.7	
30	1	R2.1		2	R2.1		2	R2.1		2	R2.1	
31	2	R2.1		2	R2.1		2	R2.1		2	R2.1	
32	2	R2.7		3	R2.7		3	R2.7		3	R2.7	
33												
34												
35												
36												
37												
38												
39	3	WS1.1		2	R2.3		3	WS1.1		3	WS1.1	
40	1	R1.1		1	R1.1		1	WS1.2	WS1.9	2	WS1.2	
41	2	W1.2		2	R1.2		2	W1.2		2	W1.2	
42	1	R2.2		1	W1.5		1	W1.5		1	W1.5	
43	2	WS1.4		2	R2.4		2	WS1.4		2	WS1.4	
44	1	W1.1		2	W1.1		1	W1.1		1	W1.1	
45	1	W1.3		2	W1.3		1	W1.2		1	W1.2	
46	1	W1.2		2	W1.2		3	W1.3		2	W1.1	
47	1	W1.2		2	W1.2		1	W1.2		2	W1.3	

**Grade 10 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
48	3	WS1.4		2	R2.3		3	WS1.3	R2.3	2	WS1.4	
49	1	W1.1		1	W1.5		1	W1.4	W1.5	1	W1.5	
50	2	WS1.1		2	R2.3		2	WS1.1		3	WS1.1	
51	1	R1.1		2	W1.1		2	WS1.9	WS1.2	2	WS1.9	
52	2	WS1.3		2	W1.2		2	WS1.2	W1.3	2	W1.2	
53	2	WS1.4		2	R2.3		3	WS1.4	R2.8	2	WS1.4	
54	1	W1.1		2	WS1.4		1	W1.4		1	W1.4	
55	3	WS1.1		3	WS1.9		3	WS1.9		2	WS1.9	
56	2	WS1.1		2	WS1.9		3	WS1.9	WS1.1	2	WS1.1	
57	2	WS1.7		1	WS1.7		1	WS1.7	W1.5	1	WS1.7	
58	2	WS1.2		3	WS1.3		3	WS1.3	R2.3	3	WS1.3	
59	1	W1.5		1	W1.5		1	W1.5		1	W1.5	
60	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
61												
62												
63												
64	1	W1.2		1	W1.2		1	WS1.2		1	WS1.2	
65	1	W1.3		2	W1.2		1	W1.2		2	W1.2	
66	2	WS1.5		2	WS1.3		2	WS1.3		2	WS1.5	
67	2	WS1.3		2	WS1.5		2	WS1.3		2	WS1.5	
68												
69	2	R2.1		2	R2.1		2	R2.1		2	R2.1	
70	2	R3.1		3	R3.11		2	R3.1		2	R3.1	

**Grade 10 English Language Arts (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
1	2	R3.3		3	R3.8		2	R3.3		2	R3.3	
2	2	R3.6		2	R3.6		2	R3.6		3	R3.6	
3	3	R3.9	R3.11	1	R3.9		3	R3.9		3	R3.11	
4	2	R1.2		2	R1.1	R1.2	2	R3.11		2	R3.11	
5	1	R1.1		2	R1.2	R1.1	2	R3.7		2	R1.2	
6	2	R1.3		2	R1.3		1	R1.3		1	R1.3	
7	3	R3.8		2	R2.7		3	R2.7		2	R2.1	
8	1	R2.1		2	R2.1		2	R2.1		2	R2.1	
9	2	R2.4		2	R2.4		1	R2.4		2	R2.4	
10	3	R2.8		2	R2.8		2	R2.4		2	R2.1	
11	2	R3.1		3	R3.8		1	R3.3		2	R3.3	
12	2	R3.3		3	R3.3		1	R3.3		2	R3.3	
13	2	R3.7		2	R3.7		2	R3.7		3	R3.7	
14	2	R3.10		2	R3.3	R3.4	2	R3.10		3	R3.10	
15	2	R1.2		1	R1.2		2	R1.2		2	R1.2	
16	3	R3.8		3	R3.9		2	R3.9		3	R3.9	
17	2	R3.6		2	R3.9		2	R3.10		2	R3.11	
18	3	R3.12		1	R3.12		2	R3.6		2	R3.6	
19	2	R3.8	R1.2	2	R3.11		2	R3.9		2	R3.6	
20	2	R1.3		2	R1.1		1	R1.3		1	R1.3	
21	1	R1.1		1	R1.1		1	R1.1		2	R1.2	
22	2	R3.3		2	R3.8		2	R3.4		3	R3.4	
23	2	R2.3										

**Grade 10 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	3	R3.9		2	R3.11		3	R3.11		3	R3.11	
25	3	R3.5		2	R3.2		3	R3.2		3	R3.5	
26	3	R3.2		3	R3.2		3	R3.2		3	R3.2	
27	3	R2.3		1	R2.3		2	R2.3		2	R2.3	
28	1	R2.6		1	R2.6		1	R2.6		2	R2.4	R2.6
29	1	R2.6		1	R2.6		1	R2.6		2	R2.6	
30	1	R2.1		2	R2.1		2	R2.1		2	R2.1	
31	2	R2.1		2	R2.1		2	R2.1		2	R2.1	
32	3	R2.7		2	R2.8		2	R2.7		3	R2.7	
33												
34												
35												
36												
37												
38												
39	2	WS1.1		1	WS1.1		2	WS1.1		3	WS1.1	
40	1	WS1.9		1	WS1.2		1	W1.2		2	WS1.2	WS1.9
41	1	W1.1		1	W1.2	W1.3	3	WS1.9		3	WS1.9	
42	2	WS1.7		1	WS1.7		1	WS1.7		2	WS1.7	
43	2	WS1.4		2	WS1.4		3	WS1.4		3	WS1.4	WS1.9
44	1	W1.1		1	W1.1		1	W1.1		2	W1.3	
45	1	W1.2		1	W1.2		1	W1.2		2	W1.2	
46	1	W1.3		2	W1.3		3	WS1.9		3	WS1.9	WS1.2
47	1	W1.2		1	W1.2		1	W1.2		2	W1.2	

**Grade 10 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	2	WS1.4		2	WS1.3		2	R2.3		2	WS1.3	
49	1	WS1.7	W1.5	1	W1.1		1	W1.5		2	W1.5	
50	2	WS1.4	WS1.1	1	WS1.4		2	WS1.4		2	WS1.1	
51	1	WS1.9		1	WS1.2		2	WS1.2		2	WS1.9	WS1.2
52	1	W1.2	R1.3	1	W1.3		3	WS1.9		2	W1.2	
53	2	WS1.4		2	WS1.4		3	WS1.4		3	WS1.4	
54	1	W1.1		1	W1.1		1	W1.1		2	W1.4	
55	2	WS1.9		2	WS1.9		3	WS1.1		3	WS1.9	WS1.1
56	3	WS1.9		2	WS1.1	WS1.2	3	WS1.1		3	WS1.9	
57	1	WS1.7		1	WS1.7		1	WS1.7		2	WS1.7	
58	2	WS1.3	WS1.4	2	WS1.3		2	WS1.3		2	WS1.3	
59	1	WS1.5		1	W1.5		1	W1.5		1	W1.5	
60	1	W1.4		1	W1.4		1	W1.4		1	W1.4	
61												
62												
63												
64	2	WS1.2		1	WS1.2		1	W1.2		2	WS1.2	
65	2	WS1.2	W1.2	1	W1.2		1	W1.3		2	W1.3	
66	2	WS1.3		2	W1.5		2	WS1.3		2	WS1.3	
67	2	WS1.3		2	WS1.3		2	WS1.3		2	WS1.3	
68												
69	2	R2.1		2	R2.1		2	R2.1		2	R2.6	
70	2	R3.10		2	R3.1		2	R1.3		2	R3.1	

**Table E9:  
Grade 11 English Language Arts**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	R2.2		2	R2.2		3	R2.2		3	R2.2	
2	2	R2.2		2	R2.5		3	R3.2		2	R2.5	
3	2	R2.2		2	R2.4		2	R2.5		3	R2.5	
4	2	R1.2		1	R1.2		2	R1.2		2	R1.3	
5	2	R3.1		1	R3.3		2	R3.4		2	R3.3	
6	3	R3.2		2	R3.2		3	R3.2		2	R3.2	
7	2	R3.1		2	R3.3		3	R3.4		2	R3.3	
8	1	R3.1		1	R3.1		2	R3.1		2	R3.1	
9	2	R3.1		2	R3.5.3		3	R3.5.3		3	R3.5.3	
10	1	W1.1		1	R1.3		2	R1.3		2	R1.3	
11	2	R3.8		2	R3.5.3		3	R3.5.3		3	R3.5.3	
12	2	R3.5.3		1	R3.5.1		2	R3.5.1		2	R3.1	
13	2	R3.2		2	R2.2		3	N/A		3	R1.3	
14	1	R1.2		1	R1.2		1	R1.2		2	R1.2	
15	2	R3.4		2	R1.3		2	R1.3	R3.4	2	R3.4	
16	2	R3.4		2	R3.3		2	R3.4		2	R3.3	
17	2	R3.4		3	R3.4		3	R3.6		2	R3.6	
18	3	R3.5.3		2	R3.2		3	R3.9		3	R3.9	
19	2	R3.2		2	R3.2		3	R3.2		2	R3.5.2	
20	2	R3.1		2	R1.3		1	R1.3		2	R1.3	
21	2	R2.2		2	R2.3		2	N/A		3	R2.1	
22	2	R3.4		2	R2.2		2	R3.3		3	R2.6	
23	3	R2.5		3	R2.5		3	R2.4		2	R2.5	

**Grade 11 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	2	R3.4		2	R3.4		2	R3.3		2	R2.1	
25	3	R2.5		2	R3.3		3	R3.3		3	R2.5	
26	2	R2.2		2	R3.3	W1.2	3	R2.2	R3.3	2	R2.1	
27	2	R2.3		2	R2.2		3	R2.2		3	R2.2	
28	3	R2.5		2	R2.3		3	R2.5		3	R2.6	
29	1	R2.1		2	R2.4		1	N/A		2	R2.3	
30	2	R2.2		2	R2.5		2	R2.1		2	R2.5	
31	2	R2.5		2	R3.2		1	N/A		2	R2.3	
32	3	R2.4		2	R3.2		3	R2.4		3	R2.4	
33	2	R2.1		2	R3.3		3	R2.1		3	R2.4	
34	2	R2.5		3	R3.8		3	R2.5		3	R2.5	
35												
36												
37												
38												
39												
40												
41	2	R3.3		2	R3.3		2	N/A		2	R2.1	
42	1	WS1.1		2	R3.2		3	WS1.1		3	R2.1	
43	2	WS1.3		2	R3.2		3	WS1.3		3	R2.6	
44	3	WS1.4		2	R3.3		3	WS1.4		3	R2.2	
45	1	WS1.7		1	WS1.7		1	WS1.7		1	WS1.7	
46	2	WS1.3		1	W1.2		1	N/A		2	W1.1	
47	3	WS1.7		1	WS1.1		3	WS1.9	WS1.3	2	WS1.3	

**Grade 11 English Language Arts (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
48	2	WS1.2		1	WS1.1		2	WS1.3		2	WS1.3	
49	2	WS1.4		2	WS1.3		2	WS1.9		2	W1.1	
50	2	WS1.1		2	R2.2		3	W1.1		3	WS1.1	
51	1	WS1.1		2	W1.1		2	WS1.9		2	WS1.1	
52	2	R1.3		2	R2.5		3	R1.3	WS1.4	2	WS1.4	
53	2	R1.3		1	R1.3		3	WS1.5		2	WS1.9	
54	2	R2.3		2	WS1.3		2	WS1.3		3	WS1.3	
55	3	WS1.4		2	R2.4		3	WS1.4		3	WS1.4	
56	1	W1.1		1	W1.1		2	W1.1		1	W1.1	
57	1	W1.1		1	W1.1		2	W1.1		2	W1.1	
58	2	WS1.1		2	WS1.1		1	WS1.1		3	WS1.1	
59												
60												
61												
62	2	R2.3		2	WS1.3		2	WS1.4		2	WS1.9	
63	1	W1.2		1	W1.2		1	W1.2		1	WS1.2	
64	1	W1.1		2	WS1.9		3	WS1.9		2	WS1.1	
65	2	WS1.4		3	WS1.4		2	WS1.4		1	R1.3	
66	2	WS1.2		2	WS1.9		3	WS1.9		2	WS1.5	
67	3	WS1.9		2	WS1.9		3	WS1.9		2	WS1.9	
68												
69	1	R1.2		2	R1.2		1	R1.2		2	R1.2	
70	2	R1.2		2	R1.2		1	R1.2		2	R1.1	

**Grade 11 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	2	R2.2		1	R2.2		2	R2.1		2	R2.2	
2	3	R2.4	R3.2	2	R2.1		3	R3.2		3	R2.1	
3	2	R2.5		2	R2.5		3	R2.5		3	R2.5	R2.4
4	2	R1.2		1	R1.2		1	R1.2		1	R1.2	
5	2	R3.3	R3.4	2	R3.3		2	R3.4		2	R3.3	
6	2	R3.2		3	R3.2		3	R3.2		2	R3.2	
7	2	R3.4		2	R3.3		2	R3.3		3	R3.3	
8	2	R3.1		1	R3.1		1	R3.1		1	R3.1	
9	3	R3.5.3		3	R3.5.3		2	R3.5.3		2	R3.2	
10	2	R1.3		2	R1.3		2	R1.3		2	R3.4	
11	3	R3.8		2	R3.5.3		2	R3.8		2	R3.8	
12	3	R3.5.3		1	R3.5.3		2	R3.1		1	R3.1	
13	2	R1.3		2	R1.3		3	R3.2		2	R3.5.3	
14	2	R1.2		2	R1.2		1	R1.2		1	R1.2	
15	2	R3.4		2	R3.4	R1.3	2	R3.4		2	R3.4	
16	2	R3.3		2	R3.3		2	R3.3		2	R3.4	
17	3	R1.3		3	R3.6		3	R3.6		3	R3.6	
18	2	R3.2		3	R3.5.3	R3.2	3	R2.5		3	R3.2	R3.9
19	3	R2.4		2	R3.5.2	R3.2	3	R3.5.2		3	R3.2	
20	2	R1.3		2	R1.2		2	R1.3		2	R1.3	
21	2	R2.4		2	R2.4		3	R2.2		2	R2.5	
22	2	R2.2		2	R2.2		3	R2.6		3	R2.2	R2.4
23	2	R2.4		1	R2.4		2	R2.4		2	R2.4	

**Grade 11 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	3	R3.2	R2.6	3	R2.6	R2.1	3	R2.6		2	R2.6	
25	3	R2.5		2	R3.2		2	R2.4		3	R2.5	
26	1	R2.2		2	W1.2		3	R2.2		2	R2.1	
27	2	R3.1		3	WS1.4		3	R2.2		2	R2.1	
28	2	R2.2		1	R3.8		3	R2.5		2	R2.5	
29	1	R2.3		1	W1.1		2	R2.1		2	R2.1	
30	3	R2.5		2	WS1.1		3	R2.5		3	R2.5	
31	2	R1.3		1	R2.2		2	R2.1		2	R2.5	R2.3
32	3	R2.4		2	WS1.3		2	R2.6		3	R2.6	
33	2	WS1.2		2	WS1.2	WS1.4	2	R2.1		3	R2.1	
34	2	R3.8		2	R2.5		3	R2.5		3	R2.5	R2.6
35												
36												
37												
38												
39												
40												
41	3	WS1.5		2	R3.3		2	WS1.5		2	WS1.5	
42	1	WS1.1		2	R3.3		2	WS1.1		2	WS1.1	
43	3	WS1.9		3	WS1.3	WS1.9	3	WS1.3		3	WS1.9	WS1.3
44	3	WS1.2		2	WS1.4		2	WS1.4		2	WS1.4	
45	2	WS1.7		1	WS1.7		1	WS1.7		1	WS1.7	
46	1	W1.1	WS1.9	1	W1.1	WS1.9	1	W1.1		2	WS1.9	W1.1
47	2	WS1.9		2	WS1.3		3	WS1.3		2	WS1.3	WS1.9

**Grade 11 English Language Arts (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	3	WS1.3		2	WS1.3		3	WS1.3		2	WS1.9	
49	1	W1.1		1	W1.1	WS1.9	3	WS1.9		2	W1.1	WS1.9
50	2	R2.4		2	WS1.1		2	WS1.1		2	WS1.1	
51	1	W1.1		1	WS1.1	WS1.9	3	WS1.9		2	W1.1	WS1.9
52	2	R1.3		2	WS1.4		2	WS1.5		2	WS1.3	
53	1	WS1.5		3	WS1.4		2	WS1.5		2	W1.1	WS1.5
54	2	WS1.3		2	WS1.7		2	WS1.4		3	WS1.3	
55	3	WS1.4		3	WS1.4		2	WS1.4		2	WS1.4	
56	1	W1.1		1	W1.1		1	W1.1		2	W1.1	
57	1	W1.1	WS1.9	1	W1.1	WS1.9	3	WS1.9		2	WS1.1	WS1.9
58	3	WS1.3		1	WS1.1		2	WS1.1		2	WS1.1	WS1.5
59												
60												
61												
62	2	WS1.2		2	WS1.2		2	WS1.2		2	WS1.4	
63	1	W1.2		1	W1.2		1	W1.2		1	W1.2	
64	1	W1.1		3	WS1.9	W1.1	3	WS1.9		2	WS1.9	
65	2	WS1.2		1	WS1.4		2	WS1.4		2	WS1.4	WS1.2
66	3	WS1.5		3	WS1.9		3	WS1.9		2	WS1.5	
67	2	WS1.9	W1.1	3	WS1.9	R3.8	3	WS1.9		3	WS1.9	
68												
69	2	R1.2		1	R1.2		2	R1.2		1	R1.2	
70	2	R1.2		1	R1.2		1	R1.2		2	R1.2	

## Science Standard and Depth-of-Knowledge Alignments Assigned by Reviewers

**Table E10:  
Grade 5 Science**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	5PS.1.g										
2	2	5IE.6.f	5PS.1.f	1	5PS.1.f		1	5PS.1.f		1	4PS.1.f	
3	2	4IE.6.c	5PS.1.c	3	5PS.1.c	5PS.1.g	2	5PS.1.c	5IE.6.a	1	5PS.1.c	
4	1	5PS.1.g		1	4PS.1.g		1	4PS.1.g		1	4PS.1.g	
5	1	4PS.1.a		1	4PS.1.a		2	4PS.1.a		2	4PS.1.a	
6	1	4PS.1.b	5IE.6.f	2	4PS.1.b	4PS.1.c	1	4PS.1.b		3	5PS.1.b	
7	1	4PS.1.f		1	4PS.1.f		1	4PS.1.f		3	4PS.1.f	
8	1	5PS.1.g		1	5ES.3.b	5PS.1.g	1	5ES.3.b		2	5ES.3.b	
9	1	5PS.1.g		1	5PS.1.g		2	5PS.1.g		2	5IE.6.f	4IE.6.b
10	1	5PS.1.b		1	5PS.1.b	5PS.1.a	1	5PS.1.b		1	5PS.1.b	5PS.1.d
11	1	4PS.1.c		1	4PS.1.c		1	4PS.1.c		3	4PS.1.a	
12	1	4PS.1.b		1	4PS.1.b		1	4PS.1.b		2	4PS.1.b	
13	2	5PS.1.d		2	5PS.1.d		2	5PS.1.d		3	5PS.1.d	5PS.1.g
14	2	5PS.1.c		1	5PS.1.c		2	5PS.1.c		1	5PS.1.c	
15	2	5PS.1.a		2	5PS.1.a		2	5PS.1.a		2	5PS.1.f	
16												
17												
18												
19												
20	1	4LS.3.c										
21	1	4LS.3.a										
22	1	5LS.2.e		1	5LS.2.e		1	5LS.2.e		1	5LS.2.e	5LS.2.f
23	1	4LS.2.c		1	4LS.2.c		1	4LS.2.c		1	4LS.2.c	4LS.2.b

**Grade 5 Science (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	1	4LS.2.a		1	4LS.2.a		1	4LS.2.a		1	4LS.2.a	
25	1	4LS.2.b		1	4LS.2.b		1	4LS.2.b		1	4LS.2.b	
26	1	5LS.2.d		1	5LS.2.d		1	5LS.2.d		1	5LS.2.d	5LS.2.c
27	1	5LS.2.g		1	5LS.2.g		1	5LS.2.g		1	5LS.2.g	
28	1	5LS.2.b		1	5LS.2.b		1	5LS.2.b		1	5LS.2.b	
29	2	4IE.6.b		2	4IE.6.b		2	4IE.6.b		2	4IE.6.b	5IE.6.f
30	2	4LS.3.b		2	4LS.3.b		2	4LS.3.b		1	4LS.3.b	
31	2	5IE.6.g		1	5IE.6.g		1	5IE.6.g		2	5IE.6.g	5IE.6.h
32	1	4LS.3.c		1	4LS.2.b		2	4LS.2.b		1	4LS.2.b	
33	3	5IE.6.h		2	5IE.6.g		2	5IE.6.g		3	5IE.6.h	
34	1	5LS.2.c		1	5LS.2.c		1	5LS.2.c		1	5LS.2.c	
35	1	5LS.2.f		1	5LS.2.f		1	5LS.2.f		1	5LS.2.f	
36	1	5LS.2.b		1	5LS.2.b		1	5LS.2.b		1	5LS.2.b	
37												
38												
39												
40												
41												
42	1	5ES.5.a		1	5ES.5.a		1	5ES.5.a		1	5ES.5.a	
43	1	4ES.5.c		1	4ES.5.c		1	4ES.5.c		1	4ES.5.c	4ES.5.b
44	1	4ES.4.a		1	4ES.4.a		1	4ES.4.a		1	4ES.4.a	
45	1	4ES.4.a		1	4ES.4.a	5IE.6.a	1	4ES.4.a		2	4ES.4.a	
46	1	4ES.4.b		2	4ES.4.b		2	4ES.4.b		2	4ES.4.b	
47	1	5ES.3.b		1	5ES.3.c		1	5ES.3.c		1	5ES.3.c	

**Grade 5 Science (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
<b>48</b>	1	5ES.3.d		2	5ES.3.d		1	5ES.3.d		2	5ES.3.d	
<b>49</b>	1	5ES.5.b		2	4ES.5.b		1	4ES.5.b		1	4ES.5.b	
<b>50</b>	1	5ES.5.b										
<b>51</b>	1	4ES.5.a										
<b>52</b>	1	4ES.4.b		2	4ES.4.b		1	4ES.4.b		2	4ES.4.b	
<b>53</b>	1	5IE.6.f		1	5IE.6.f		1	5IE.6.f		2	5IE.6.f	5IE.6.g
<b>54</b>	1	5ES.5.b		1	5ES.5.b		1	5ES.5.b		1	5ES.5.a	
<b>55</b>	1	4ES.5.c										
<b>56</b>	2	5ES.4.d										
<b>57</b>	2	N/A		1	5ES.3.a		1	5ES.3.a		1	5ES.3.d	

**Grade 5 Science (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	5PS.1.g		1	5PS.1.g		1	5PS.1.g		2	5PS.1.g	
2	2	4PS.1.f		1	5PS.1.f		1	4PS.1.f		2	4PS.1.f	
3	2	5PS.1.c		3	5PS.1.c		2	5PS.1.c	5PS.1.g	3	5PS.1.c	5PS.1.g
4	2	4PS.1.g		2	4PS.1.g		1	4PS.1.g		1	4PS.1.g	
5	3	4PS.1.a		2	4PS.1.a		1	4PS.1.a		1	4PS.1.a	4PS.1.b
6	3	4PS.1.b		1	4PS.1.c		1	4PS.1.c		1	4PS.1.c	
7	1	4PS.1.f		2	4PS.1.f		1	4PS.1.f		2	4PS.1.f	
8	1	5PS.1.g		2	5ES.3.b		1	5PS.1.g		1	5PS.1.g	
9	2	5PS.1.g		2	5PS.1.g		1	5PS.1.g		1	5PS.1.g	
10	1	5PS.1.b		1	5PS.1.b		1	5PS.1.b		1	5PS.1.f	
11	3	4PS.1.c		2	4PS.1.c		2	4PS.1.c		1	4PS.1.c	
12	2	4PS.1.b		1	4PS.1.b		1	4PS.1.b		1	4PS.1.a	
13	3	5PS.1.d		2	5PS.1.d		2	5PS.1.d		2	5PS.1.d	
14	2	5PS.1.c		2	5PS.1.c		1	5PS.1.c		2	5PS.1.c	
15	2	5PS.1.a		2	5PS.1.a		1	5PS.1.a		3	5PS.1.f	
16												
17												
18												
19												
20	2	4LS.3.c		1	4LS.3.c		1	4LS.3.c		1	4LS.3.c	
21	2	5IE.6.a		2	4LS.3.a		1	4LS.3.a		1	4LS.3.a	
22	2	5LS.2.e		1	5LS.2.e		1	5LS.2.e		1	5LS.2.e	
23	2	4LS.2.c		1	4LS.2.c		1	4LS.2.c		1	4LS.2.c	

**Grade 5 Science (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	2	4LS.2.a		2	4LS.2.a	4LS.2.b	1	4LS.2.a		1	4LS.2.a	
25	3	4LS.2.b		2	4LS.2.b		1	4LS.2.b		1	4LS.2.b	
26	1	5LS.2.d		1	5LS.2.d		1	5LS.2.d		1	5LS.2.d	
27	2	5LS.2.g		1	5LS.2.g		1	5LS.2.f		1	5LS.2.g	
28	1	5LS.2.b		1	5LS.2.b		1	5LS.2.c		1	5LS.2.b	
29	2	4IE.6.b		2	4IE.6.b		2	4IE.6.b		1	4IE.6.b	
30	3	4LS.3.b	4IE.6.c	2	4LS.3.b		2	4LS.3.b		2	5IE.6.h	
31	2	5IE.6.g		2	5IE.6.h		2	5IE.6.h		1	5IE.6.g	
32	3	4LS.2.b		2	4LS.2.b		1	4LS.2.b		2	4LS.2.b	
33	3	5IE.6.h		3	5IE.6.h		2	5IE.6.h		1	4LS.3.b	
34	2	5LS.2.c		2	5LS.2.c		2	5LS.2.c		1	5LS.2.c	
35	1	5LS.2.f		1	5LS.2.f		1	5LS.2.f		1	5LS.2.f	
36	2	5LS.2.b		2	5LS.2.b		1	5LS.2.b		1	5LS.2.b	
37												
38												
39												
40												
41												
42	1	5ES.5.a		1	5ES.5.a		1	5ES.5.a		1	5ES.5.a	
43	3	4ES.5.a		1	4ES.5.c		1	4ES.5.c	4ES.5.a	1	4ES.5.c	
44	1	4ES.4.a		2	4ES.4.a		1	4ES.4.a		2	4ES.4.a	
45	1	4ES.4.a		2	4ES.4.a	5IE.6.a	2	4ES.4.a		1	4ES.4.a	
46	3	4ES.4.b		2	4ES.4.b		1	4ES.4.b		1	4ES.4.b	
47	1	5ES.3.c		1	5ES.3.c		1	5ES.3.c		1	5ES.3.c	

**Grade 5 Science (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>
<b>48</b>	1	5ES.3.d		2	5ES.3.d		1	5ES.3.d		1	5ES.3.d	
<b>49</b>	2	4ES.5.b		2	4ES.5.b		2	4ES.5.b		1	4ES.5.b	
<b>50</b>	1	5ES.5.b		2	5ES.5.b		2	5ES.5.b		1	5ES.5.b	
<b>51</b>	1	4ES.5.a		2	4ES.5.a		1	4ES.5.a		1	4ES.5.a	
<b>52</b>	3	4ES.4.b		2	4ES.4.b		1	4ES.4.b		1	4ES.4.b	
<b>53</b>	2	5IE.6.f		2	5IE.6.f	5ES.4.d	1	5IE.6.f		1	5IE.6.f	
<b>54</b>	1	5ES.5.b										
<b>55</b>	2	4ES.5.c		2	4ES.5.c		1	4ES.5.c		1	4ES.5.c	
<b>56</b>	2	5ES.4.d		2	5ES.4.d		2	5ES.4.d	5IE.6.h	2	5ES.4.d	
<b>57</b>	1	5ES.3.a										

**Table E11:  
Grade 8 Science**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	F8.2.a	F8.2.e	1	F8.2.a		1	F8.2.a		1	F8.2.a	
2	1	F8.2.d										
3	2	M8.1.f	IE8.9.e	1	M8.1.f		1	M8.1.f		2	M8.1.f	
4	2	DB8.8.b		2	DB8.8.b	IE8.9.f	2	DB8.8.b	IE8.9.f	1	DB8.8.b	IE8.9.f
5	1	M8.1.a	M8.1.d	1	M8.1.a		1	M8.1.a		1	M8.1.a	
6	1	M8.1.d		1	M8.1.d		1	M8.1.d		2	M8.1.d	M8.1.e
7	1	M8.1.b		2	M8.1.c	IE8.9.f	2	M8.1.c	IE8.9.f	1	M8.1.b	M8.1.c
8												
9												
10												
11	1	DB8.8.a										
12	1	F8.2.c										
13	1	M8.1.c		2	M8.1.c	IE8.9.f	1	M8.1.b		1	M8.1.b	
14	2	F8.2.d		1	F8.2.a		2	IE8.9.c		1	F8.2.b	F8.2.d
15	2	DB8.8.b	DB8.8.d	2	DB8.8.b	IE8.9.f	2	DB8.8.b		1	DB8.8.b	
16	2	F8.2.e	F8.2.d	1	F8.2.e		2	F8.2.b	F8.2.e	2	F8.2.b	
17	2	M8.1.b		1	M8.1.c	IE8.9.f	1	M8.1.b	IE8.9.f	1	M8.1.b	M8.1.c
18	1	DB8.8.d	DB8.8.c	2	DB8.8.d		2	DB8.8.d		2	DB8.8.d	DB8.8.c
19	1	M8.1.d	M8.1.e	1	M8.1.e		1	M8.1.e		1	M8.1.e	M8.1.d
20	1	F8.2.d	F8.2.e	2	F8.2.e		1	F8.2.e		1	F8.2.f	
21	2	F8.2.f	IE8.9.e	2	F8.2.f		2	F8.2.f		1	F8.2.f	
22	1	DB8.8.c										
23	3	IE8.9.a	DB8.8.b	1	DB8.8.b		1	DB8.8.b		2	IE8.9.a	DB8.8.b

**Grade 8 Science (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	1	F8.2.g										
25												
26												
27	1	SM8.3.a										
28	1	PT8.7.a	SM8.3.f	1	PT8.7.a		1	PT8.7.a		2	PT8.7.a	
29	1	SM8.3.b										
30	1	SM8.3.a										
31	2	SM8.3.f		1	PT8.7.a		2	PT8.7.a	SM8.3.f	2	SM8.3.f	PT8.7.a
32	1	SM8.3.d		1	SM8.3.a		1	SM8.3.e		1	DB8.8.b	
33	2	IE8.9.b		1	IE8.9.b		1	IE8.9.b		1	IE8.9.b	
34	1	SM8.3.d		1	SM8.3.e		1	SM8.3.e		1	SM8.3.e	
35	1	LS8.6.a		1	LS8.6.a		1	LS8.6.a		1	LS8.6.a	LS8.6.b
36	1	SM8.3.e	SM8.3.d	1	SM8.3.e		1	SM8.3.e		1	SM8.3.e	SM8.3.d
37	1	SM8.3.f		2	SM8.3.f		1	SM8.3.f		1	SM8.3.f	
38	1	R8.5.e		1	R8.5.e		1	R8.5.e		2	R8.5.e	
39	1	LS8.6.c		1	LS8.6.b		1	LS8.6.b		1	LS8.6.b	
40	2	SM8.3.c	R8.5.d	1	SM8.3.c		1	SM8.3.c	SM8.3.e	1	SM8.3.e	SM8.3.d
41	1	PT8.7.c		1	PT8.7.c		1	PT8.7.c		2	R8.5.c	PT8.7.c
42												
43												
44	1	ES8.4.e										
45	1	ES8.4.d										
46	1	ES8.4.d		1	ES8.4.d	ES8.4.e	1	ES8.4.d		1	ES8.4.b	ES8.4.e
47	1	ES8.4.b		1	ES8.4.d		1	ES8.4.e		1	ES8.4.d	

**Grade 8 Science (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
48	1	ES8.4.e		1	ES8.4.e		1	ES8.4.e		2	ES8.4.e	
49	1	ES8.4.a										
50	1	ES8.4.d		1	ES8.4.d		1	ES8.4.b		1	ES8.4.d	ES8.4.b
51												
52												
53	2	SM8.3.a	SM8.3.f	2	PT8.7.b		2	PT8.7.b		2	SM8.3.f	
54	1	R8.5.a	SM8.3.b	2	R8.5.a		1	R8.5.a		3	R8.5.b	R8.5.a
55	1	R8.5.a		2	R8.5.c		1	R8.5.c		1	R8.5.c	
56	1	PT8.7.c	PT8.7.a	2	PT8.7.c		2	PT8.7.c	PT8.7.a	2	PT8.7.c	SM8.3.f
57	2	IE8.9.e		1	IE8.9.e		1	IE8.9.e		2	M8.1.f	IE8.9.b
58	2	R8.5.b		2	R8.5.b		2	R8.5.b		3	R8.5.b	SM8.3.f
59	1	R8.5.d		1	R8.5.d		1	R8.5.d		1	SM8.3.e	
60	1	LS8.6.c										
61	1	SM8.3.b		1	R8.5.b		1	R8.5.b		1	R8.5.a	R8.5.b
62	2	M8.1.c		2	M8.1.c	IE8.9.f	2	M8.1.c	IE8.9.f	1	M8.1.b	M8.1.c
63	1	PT8.7.b	PT8.7.a	1	SM8.3.f		1	N/A		1	PT8.7.c	PT8.7.b

**Grade 8 Science (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	F8.2.a	F8.2.e	2	F8.2.a		1	F8.2.a	F8.2.e	1	F8.2.a	
2	1	F8.2.d		1	F8.2.d		1	F8.2.d		1	F8.2.d	
3	2	M8.1.f	IE8.9.a	2	M8.1.f		1	M8.1.f	IE8.9.e	2	M8.1.f	
4	2	DB8.8.b	DB8.8.a	2	DB8.8.b		2	DB8.8.a		2	DB8.8.b	
5	2	M8.1.a		2	M8.1.a		2	M8.1.a		1	M8.1.c	
6	2	M8.1.d		1	M8.1.d		2	M8.1.d	M8.1.a	1	M8.1.d	
7	2	M8.1.c		2	M8.1.c	IE8.9.f	2	M8.1.b		1	M8.1.c	
8												
9												
10												
11	2	DB8.8.a	DB8.8.b	1	DB8.8.a		1	DB8.8.a		1	DB8.8.b	
12	1	F8.2.c	F8.2.b	2	F8.2.c	F8.2.b	1	F8.2.c		1	F8.2.c	
13	1	M8.1.b		1	M8.1.b	M8.1.c	1	M8.1.b		1	M8.1.c	
14	2	F8.2.d		2	IE8.9.c		1	F8.2.d		1	F8.2.a	
15	3	DB8.8.b	IE8.9.f	2	DB8.8.b		2	DB8.8.b		1	DB8.8.a	
16	2	F8.2.e	F8.2.d	2	F8.2.b		1	F8.2.e	F8.2.b	1	F8.2.b	
17	2	M8.1.c		2	M8.1.c	IE8.9.f	2	M8.1.b		1	M8.1.c	
18	3	DB8.8.d	DB8.8.b	2	DB8.8.d		1	DB8.8.d		1	DB8.8.d	
19	1	M8.1.e		1	M8.1.e		1	M8.1.e	M8.1.d	1	M8.1.e	
20	3	F8.2.e		2	F8.2.e		1	F8.2.e	F8.2.b	1	F8.2.d	
21	2	F8.2.f	IE8.9.f	2	F8.2.f		1	F8.2.f	IE8.9.f	2	M8.1.e	
22	2	DB8.8.c		2	DB8.8.c		1	DB8.8.c		1	DB8.8.c	
23	2	DB8.8.b	DB8.8.a	2	DB8.8.a		1	DB8.8.b		2	DB8.8.b	

**Grade 8 Science (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	1	F8.2.g		1	F8.2.g		1	F8.2.g		1	F8.2.g	
25												
26												
27	1	SM8.3.a		2	SM8.3.a		1	SM8.3.a		1	SM8.3.a	
28	2	PT8.7.a		1	PT8.7.a		1	PT8.7.a		1	PT8.7.a	
29	1	SM8.3.b		1	SM8.3.b		1	SM8.3.b		1	SM8.3.a	
30	2	SM8.3.a		1	SM8.3.a		1	SM8.3.a		1	SM8.3.a	
31	2	SM8.3.f		2	PT8.7.a	SM8.3.f	1	PT8.7.a		1	PT8.7.a	
32	2	SM8.3.d		1	SM8.3.d	SM8.3.e	1	SM8.3.e	SM8.3.d	1	SM8.3.e	
33	2	IE8.9.b		2	IE8.9.b		1	IE8.9.b		1		
34	2	SM8.3.e		1	SM8.3.e		1	SM8.3.e		1	SM8.3.e	
35	1	LS8.6.a		1	LS8.6.a		1	LS8.6.a		1	LS8.6.a	
36	1	SM8.3.e		2	SM8.3.a	SM8.3.e	2	SM8.3.e		1	SM8.3.d	
37	1	SM8.3.f		1	SM8.3.f		1	SM8.3.f	PT8.7.a	1	SM8.3.f	
38	2	R8.5.e		1	R8.5.e		1	R8.5.e		1	R8.5.e	
39	1	LS8.6.b		1	LS8.6.b		1	LS8.6.b		1	LS8.6.b	
40	2	SM8.3.c		2	SM8.3.c	SM8.3.d	1	SM8.3.c	SM8.3.e	1	SM8.3.e	
41	2	PT8.7.c		2	PT8.7.c	PT8.7.a	2	PT8.7.c	PT8.7.a	1	PT8.7.a	
42												
43												
44	1	ES8.4.e		1	ES8.4.e		1	ES8.4.e		1	ES8.4.e	
45	1	ES8.4.d		1	ES8.4.d		2	ES8.4.d	ES8.4.e	1	ES8.4.d	
46	2	ES8.4.d		1	ES8.4.d		1	ES8.4.d		1	ES8.4.d	
47	1	ES8.4.b		1	ES8.4.e		1	ES8.4.d		1	ES8.4.a	

### Grade 8 Science (Continued)

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	2	ES8.4.e		1	ES8.4.e		1	ES8.4.e		1	ES8.4.e	
49	1	ES8.4.a		1	ES8.4.a		1	ES8.4.d		1	ES8.4.a	
50	2	ES8.4.d		1	ES8.4.b		2	ES8.4.d		1	ES8.4.d	
51												
52												
53	2	SM8.3.f		2	PT8.7.b	SM8.3.a	1	PT8.7.a		1	PT8.7.b	
54	2	R8.5.a	R8.5.c	2	R8.5.a		2	SM8.3.b		1	SM8.3.f	
55	1	R8.5.c		1	R8.5.a		1	R8.5.a	R8.5.d	1	R8.5.c	
56	2	SM8.3.f	PT8.7.a	2	PT8.7.b		2	PT8.7.c	PT8.7.a	1	PT8.7.c	
57	2	IE8.9.e		2	IE8.9.e		1	N/A	IE8.9.e	1		
58	2	R8.5.b		2	R8.5.b		1	R8.5.b		1	R8.5.b	
59	1	R8.5.d		2	R8.5.d		1	SM8.3.d	SM8.3.e	1	R8.5.d	
60	2	LS8.6.c		1	LS8.6.c		1	LS8.6.c		1	SM8.3.c	
61	2	R8.5.a		2	R8.5.a	SM8.3.b	2	R8.5.a	SM8.3.b	1	R8.5.a	
62	2	M8.1.c	IE8.9.f	2	M8.1.c	IE8.9.f	1	M8.1.b		1	M8.1.c	
63	2	PT8.7.b		1	PT8.7.b		1	PT8.7.b		1	PT8.7.b	

**Table E12:**  
**High School Science**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	2	LS.1.c		1	7CB.1.c		1	7CB.1.c		2	LS.1.c	
2	1	7CB.1.d		1	LS.1.f	LS.1.c	1	7CB.1.d		1	7CB.1.d	
3	2	8CB.6.b		2	8CB.6.b		2	8CB.6.b		1	8CB.6.b	
4	1	7CB.1.e		1	LS.2.b		1	7CB.1.e		2	7CB.1.e	
5	1	7CB.1.c		1	G7.2.e		1	7CB.1.c		1	7CB.1.c	
6	1	8CB.6.c		1	8CB.6.c		2	8CB.6.c		2	8CB.6.c	
7	1	LS.1.f		1	LS.1.f		2	LS.1.f		1	LS.1.f	
8	2	LS.1.c		2	LS.1.c		2	LS.1.c		2	LS.1.c	
9	2	6EC.5.e		2	LS.6.a		1	LS.6.b		2	7IE.7.c	
10	1	LS.1.a		1	LS.1.a		1	8CB.6.c		2	LS.1.a	
11	1	7CB.1.d		2	LS.1.f		1	LS.1.f		2	7CB.1.d	LS.1.f
12												
13	2	G7.2.a		1	LS.2.d		1	7CB.1.e		2	G7.2.a	
14	1	G7.2.d		1	G7.2.d		1	G7.2.d		1	G7.2.d	
15	1	LS.5.a		1	8CB.6.c		1	LS.5.a		1	LS.5.a	
16	1	LS.5.a		1	LS.5.a		1	LS.5.a		1	LS.5.a	
17	1	LS.2.f		1	G7.2.c		1	LS.2.f		1	LS.2.f	
18	1	LS.2.d		1	LS.2.d		1	LS.2.b	LS.2.d	1	LS.2.e	
19	2	LS.3.a		2	G7.2.d	G7.2.c	2	G7.2.d		2	LS.3.a	
20	1	LS.2.b		2	LS.2.b		1	LS.2.b		1	LS.2.b	
21	1	LS.2.e		2	G7.2.d	G7.2.c	2	G7.2.d		2	LS.2.d	
22	1	G7.2.c		2	G7.2.c	G7.2.d	1	G7.2.c		2	G7.2.c	
23	2	6IE.7.e		2	LS.6.b		2	7EV.3.a		3	6IE.7.c	

### High School Science (Continued)

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	1	G7.2.e		1	G7.2.e		1	G7.2.e		1	G7.2.e	
25	2	LS.2.d		2	LS.3.a		1	LS.2.e	G7.2.d	2	LS.2.d	
26												
27												
28	3	7IE.7.c		2	6EC.5.e		2	7EV.3.a		2	6IE.7.c	
29	2	LS.9.a		1	LS.6.d	LS.9.a	1	LS.9.a		2	LS.9.a	
30	1	LS.10.b		1	LS.10.b	LS.10.c	1	LS.10.b		1	LS.10.b	
31	1	LS.9.b		1	LS.9.b		1	LS.9.b		2	LS.9.b	
32	1	7P.5.c		1	7P.5.c	7P.5.a	1	7P.5.c		1	7P.5.c	
33	1	LS.9.a		1	LS.9.a		1	LS.9.a		1	LS.9.a	
34	1	7P.6.j		1	7P.6.j		1	7P.6.j		1	7P.6.j	
35	1	LS.10.d		1	LS.10.d		1	LS.10.d		1	LS.10.d	
36	2	LS.9.a		1	LS.9.a		2	LS.9.a		2	LS.9.a	
37	2	7P.5.a		1	7P.5.a		1	7P.5.a		2	7P.5.a	
38	2	9-12IE.1.c		2	7EV.3.a	LS.6.b	2	7EV.3.a		2	9-12IE.1.j	
39	1	LS.10.c		1	LS.10.b		1	LS.10.c		1	LS.10.c	
40												
41												
42	3	6IE.7.c		2	LS.6.b	7IE.7.c	2	LS.6.a		3	7IE.7.c	
43	1	LS.6.d		1	LS.6.d		1	LS.6.d		2	LS.6.d	
44	2	6EC.5.b		1	LS.8.b	6EC.5.e	1	LS.6.e		2	6EC.5.b	
45	2	6EC.5.c		1	LS.6.a	LS.6.e	2	LS.6.e		2	6EC.5.c	
46	1	LS.6.f		1	LS.6.f		1	LS.6.f		2	LS.6.f	
47	2	LS.6.d		2	LS.6.d	7IE.7.c	1	LS.6.d		2	LS.6.d	LS.1.f

### High School Science (Continued)

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
48	1	6EC.5.e		1	6EC.5.e	7EV.3.a	1	6EC.5.e		2	6EC.5.e	
49	1	6EC.5.e	LS.6.b	2	LS.6.b	LS.6.e	1	6EC.5.e		2	LS.6.b	6EC.5.e
50	2	LS.6.c		2	LS.6.b	6EC.5.e	1	LS.6.c		2	LS.6.c	
51	2	LS.6.a		2	LS.6.a	7IE.7.c	2	LS.6.a		2	LS.6.a	
52	2	LS.6.b	LS.6.e	2	LS.6.e	7IE.7.c	2	LS.6.e		2	LS.6.b	
53	1	6EC.5.e		2	LS.6.a		1	LS.6.e		2	6EC.5.e	
54												
55	1	7EV.3.c		2	LS.8.e		1	LS.8.e		2	7EV.3.c	
56	1	7EV.3.a		2	7EV.3.a	LS.7.d	2	LS.8.a		2	LS.8.a	7EV.3.b
57	2	LS.8.b	LS.7.d	2	LS.7.d		2	LS.7.d		2	LS.8.b	
58	1	LS.8.a		1	LS.8.a		1	LS.7.d		1	LS.8.a	
59	1	9-12IE.1.i	LS.8.e	2	LS.8.e		1	LS.8.e		2	LS.8.e	
60	2	9-12IE.1.i		1	LS.8.e		1	N/A		2	9-12IE.1.i	
61	1	LS.6.e		1	7EV.3.a		2	LS.8.a		2	LS.6.e	6EC.5.e
62	1	LS.7.a		1	LS.7.a		1	LS.7.c		1	LS.7.a	
63	2	7EV.3.b		2	6IE.7.c		1	LS.8.a		2	7EV.3.a	LS.7.d
64	1	LS.7.c		1	LS.7.c		1	LS.7.d		1	LS.7.c	
65	2	LS.8.e		2	LS.8.e		2	LS.8.e		2	LS.8.e	
66	2	LS.7.d	LS.8.b	2	LS.8.b		2	LS.7.d		2	LS.7.d	

### High School Science (Continued)

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	LS.1.c		1	7CB.1.c		1	8CB.6.b	7CB.1.c	2	LS.1.c	
2	1	7CB.1.d		1	7CB.1.d		1	7CB.1.d	7CB.1.c	1	7CB.1.d	
3	1	8CB.6.b	8CB.6.c	2	8CB.6.b		1	8CB.6.b	8CB.6.c	1	8CB.6.b	
4	1	7CB.1.e	LS.2.b	1	7CB.1.e		1	7CB.1.c		1	7CB.1.e	
5	1	7CB.1.c		1	7CB.1.c		1	LS.1.a		1	7CB.1.c	
6	1	8CB.6.c		1	8CB.6.c		1	8CB.6.c		1	8CB.6.c	
7	1	LS.1.f		1	7CB.1.d		1	7CB.1.d		1	LS.1.f	
8	2	LS.1.c		1	LS.1.c		2	LS.1.c		2	LS.1.c	
9	2	LS.6.b		2	7EV.3.a	LS.6.b	2	6IE.7.c		2	6IE.7.c	
10	1	LS.1.a		1	LS.1.a		1	6IE.7.e		2	LS.1.a	
11	1	LS.1.f		1	LS.1.f		1	7CB.1.d		1	7CB.1.d	
12												
13	2	G7.2.a		1	G7.2.a		2	7CB.1.e		2	G7.2.a	
14	1	G7.2.d		1	G7.2.d		1	LS.2.d		1	G7.2.d	
15	1	8CB.6.c		1	LS.5.a		1	LS.5.a		1	LS.5.a	
16	1	LS.5.a		1	LS.5.a		1	LS.5.a		2	LS.5.a	
17	1	LS.2.f		1	LS.2.f		1	LS.2.e		1	LS.2.f	
18	1	G7.2.a		1	LS.2.d		1	LS.7.d		1	LS.2.d	
19	2	LS.3.a		2	LS.3.a	LS.2.e	2	LS.2.e		2	LS.3.a	
20	1	LS.2.b		1	LS.2.b		1	LS.2.b		1	LS.2.b	
21	1	G7.2.d		2	LS.3.a	LS.2.e	1	LS.2.d		2	LS.2.e	
22	1	G7.2.c		1	G7.2.c		2	LS.7.a		1	G7.2.c	
23	2	LS.6.b	6IE.7.e	2	LS.6.b	LS.6.a	2	6IE.7.e		3	6EC.5.e	

### High School Science (Continued)

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	1	G7.2.e		1	G7.2.e		1	LS.2.e		1	G7.2.e	
25	2	LS.2.d		1	LS.2.d		2	LS.2.d		1	LS.2.d	
26												
27												
28	3	6IE.7.e	8IE.9.c	1	6IE.7.e		2	6IE.7.e		2	7IE.7.c	
29	1	LS.9.a		1	LS.9.b		1	LS.9.a		2	LS.9.a	7P.5.a
30	2	LS.10.d		2	LS.10.c		2	LS.7.d		2	LS.10.b	
31	1	LS.9.b		2	LS.9.b		1	LS.9.b		1	LS.9.b	
32	1	7P.5.c		1	7P.5.c		1	LS.9.b		1	7P.5.c	
33	1	LS.9.a		1	LS.9.a		1	LS.9.b		1	LS.9.a	
34	1	7P.6.j		1	LS.9.a		1	7P.6.j		1	7P.6.j	
35	2	LS.10.d	LS.1.c	2	LS.10.d		1	LS.10.d		1	LS.10.d	
36	1	LS.9.a		1	LS.9.a		1	LS.9.a		2	LS.9.a	
37	2	7P.5.a		1	LS.1.c		1	6IE.7.e		2	7P.5.a	
38	2	8IE.9.c		2	8IE.9.c		1	6IE.7.e		2	8IE.9.c	
39	1	LS.10.c		1	LS.10.b		1	LS.10.b		1	LS.10.c	
40												
41												
42	3	7IE.7.c	6IE.7.e	2	LS.6.b		2	6IE.7.c		3	6IE.7.c	
43	1	LS.6.d		1	LS.6.d		1	7CB.1.d		1	8CB.6.b	
44	1	6EC.5.b		1	6EC.5.b		2	6IE.7.e		2	6EC.5.b	
45	2	6EC.5.b		1	6EC.5.c		2	6IE.7.e		2	6EC.5.b	
46	1	LS.6.f		1	LS.6.f		1	LS.6.f		2	LS.6.f	
47	1	LS.6.d	LS.1.f	2	LS.6.d		1	8CB.6.b		1	LS.6.d	

### High School Science (Continued)

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	1	6EC.5.e		1	6EC.5.e		2	6EC.5.e		2	LS.6.a	
49	2	6EC.5.e		2	6EC.5.e		1	6EC.5.c		2	LS.6.b	
50	2	LS.6.c		1	LS.6.c		2	7IE.7.c		2	LS.6.c	
51	2	LS.6.a		2	LS.7.d	LS.8.b	2	7IE.7.c		2	LS.6.a	
52	2	LS.6.e	6EC.5.c	2	LS.6.c		2	9-12IE.1.c		2	6EC.5.e	
53	1	6EC.5.e	LS.6.c	1	6EC.5.e		2	6IE.7.e		2	LS.6.e	
54												
55	1	LS.8.e		1	LS.8.e		2	LS.8.e		2	LS.8.e	
56	2	LS.8.a		2	LS.8.b		2	LS.8.b		2	6EC.5.c	
57	3	LS.8.b		2	LS.7.d		2	LS.8.b		2	LS.8.b	
58	1	LS.8.a		1	LS.7.d		1	LS.8.a		1	7EV.3.b	
59	1	LS.8.e		1	7EV.3.c	LS.8.e	1	LS.8.e		1	LS.8.e	
60	2	9-12IE.1.i		2	LS.8.e		2	7IE.7.c		2	7EV.3.c	
61	2	LS.7.d		1	7EV.3.a		2	8IE.9.c		2	LS.2.d	
62	1	LS.7.a		2	LS.7.a		1	G7.2.c		2	LS.7.a	
63	2	LS.7.d		2	LS.7.c		2	7EV.3.a		2	7EV.3.a	
64	1	LS.7.c	7EV.3.a	1	LS.7.c		1	LS.7.d	LS.7.c	1	LS.7.c	
65	2	6IE.7.e	9-12IE.1.i	2	LS.8.e		2	7IE.7.c		1	LS.8.e	
66	2	LS.7.d			LS.7.d		2	7IE.7.c		2	LS.7.d	

**Mathematics Standard and Depth-of-Knowledge Alignments Assigned by Reviewers**

**Table E13:  
Grade 3 Mathematics**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
1	1	NS2.4		MR2.6	1	NS2.4		MR2.6	1	NS2.4		MR2.2	1	NS2.4		MR2.6
2	1	NS1.3		MR2.4	1	S1.2		MR1.2	1	NS1.3		MR2.6	1	NS1.3		MR2.6
3	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
4	1	NS1.3		MR2.4	1	S1.2		MR1.2	1	NS1.3		MR2.6	1	NS1.3		MR2.6
5	1	NS2.1		MR2.6	1	NS2.1		MR2.6	2	NS2.1	AF1.1	MR2.2	1	NS2.1		MR2.6
6	1	AF2.1	NS2.4	MR2.6	1	NS2.4		MR2.6	2	NS2.1	NS2.4	MR2.3	2	AF2.1		MR2.4
7	1	NS2.5		MR2.4	1	NS2.5		MR2.6	1	NS2.5		MR2.6	1	NS2.5		MR2.6
8	1	NS2.4	AF2.1	MR2.6	1	NS2.3		MR2.5	2	NS2.1		MR1.2	2	AF2.1		MR3.2
9	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
10	1	NS3.3		MR2.6	1	NS2.1		MR2.5	1	NS2.1		MR2.6	1	NS2.1		MR2.6
11	2	NS3.1		MR2.3	2	NS3.1		MR2.3	2	NS3.1		MR2.3	2	NS3.1		MR2.3
12																
13																
14	1	NS3.3		MR2.6	1	NS3.3		MR2.6	1	NS3.3		MR2.6	1	NS3.3		MR2.6
15	1	NS3.2		MR2.4	2	NS3.1		MR3.1	2	NS3.1	NS3.2	MR2.6	2	NS3.2		MR3.2
16	1	NS2.4		MR2.6	1	NS2.4		MR2.5	1	NS2.4		MR2.6	1	NS2.4		MR2.6
17	2	NS1.2		MR1.1	2	NS1.2		MR3.1	2	NS1.2		MR2.4	1	NS1.2		MR1.1
18	1	NS2.3		MR2.6	1	NS2.4		MR2.6	2	NS2.8		MR2.6	1	NS2.3		MR2.6
19	2	NS1.4		MR2.1	1	NS1.4		MR2.6	2	NS1.4	NS1.3	MR2.6	1	NS1.4		MR2.1
20	1	NS3.4		MR1.1	2	NS3.1		MR3.1	2	NS3.4	NS3.1	MR2.2	1	NS3.4		MR2.4
21	1	NS2.3		MR2.6	1	NS2.3		MR3.1	1	NS2.3	AF1.1	MR2.6	1	NS2.3		MR2.6
22	1	NS1.5		MR2.6	1	NS1.5		MR3.1	2	NS1.5	NS1.3	MR2.3	1	NS1.5		MR2.4
23	1	NS2.6		MR1.1	1	NS2.6		MR3.1	1	NS2.6	AF1.2	MR2.6	1	NS2.6		MR2.6

**Grade 3 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
24	1	NS3.3		MR2.6	1	NS3.3		MR2.6	1	NS2.1	NS3.3	MR2.6	1	NS3.3		MR2.6
25	2	NS2.8	NS2.1	MR2.2	2	NS2.8		MR2.3	2	NS2.1		MR2.3	2	NS2.1		MR2.3
26	1	NS1.1		MR2.4	1	NS1.5		MR3.1	1	NS1.1	NS1.3	MR2.6	1	NS1.1		MR2.3
27																
28																
29	2	AF2.2		MR1.1	2	AF2.2	AF2.1	MR1.1	2	AF2.2	AF2.1	MR2.3	1	AF2.2		MR1.1
30	1	AF1.1		MR1.1	1	AF1.1		MR2.6	2	NS2.8	NS1.2	MR2.6	2	AF1.2	NS2.1	MR2.3
31	1	AF1.5		MR3.2	1	AF1.5		MR2.2	1	AF1.5		MR2.6	1	AF1.5		MR2.6
32	1	AF2.2		MR1.1	2	AF2.2	AF2.1	MR1.1	2	AF2.2		MR2.3	1	AF2.2		MR1.1
33	1	AF1.1		MR1.1	1	AF1.2		MR3.1	2	AF1.2		MR1.1	2	AF1.1	AF1.2	MR2.3
34	1	AF1.4		MR1.1	1	AF1.4		MR3.1	1	AF1.4	NS2.4	MR2.3	1	AF1.4		MR3.1
35	1	AF1.1		MR1.1	1	AF1.2		MR3.1	2	AF1.1	NS2.1	MR2.3	1	AF2.1		MR3.2
36	1	AF2.1		MR2.6	1	NS2.4		MR2.6	2	NS2.4		MR2.3	2	AF2.1		MR3.2
37																
38																
39	1	MG1.1		MR3.1	1	MG1.1		MR1.2	2	MG1.1		MR3.1	1	MG1.1		MR2.3
40	1	MG2.5		MR2.1	1	NS2.5		MR3.1	1	MG2.5		MR3.3	1	MG2.5		MR2.3
41	1	MG1.2		MR1.2	1	NS1.2		MR2.6	2	MG1.2		MR2.3	1	MG1.2		MR2.3
42	1	MG1.3	NS2.1	MR2.6	1	NS1.3		MR2.6	2	MG1.3	NS2.8	MR2.6	1	MG1.3		MR2.3
43	2	MG1.4	NS2.4	MR2.6	1	MG1.4		MR2.6	1	MG1.4	NS2.4	MR1.2	1	AF1.4		MR3.1
44	1	MG2.1		MR1.1	1	MG2.1		MR3.1	1	MG2.1		MR2.4	1	MG2.1		MR2.3
45	1	MG1.2		MR2.1	1	MG1.2		MR2.6	2	MG1.2		MR2.6	1	MG1.2		MR2.3
46	1	MG1.3	NS2.1	MR2.6	1	MG1.3		MR2.6	2	MG1.3	NS2.1	MR2.6	1	MG1.3	NS2.1	MR2.3
47	1	MG2.2		MR1.2	1	MG2.2		MR3.1	2	MG2.4		MR1.1	1	MG2.2		MR2.3

**Grade 3 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>MR1</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>MR2</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>MR3</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>	<b>MR4</b>
48	1	MG2.1		MR1.1	1	MG2.3		MR3.1	2	MG2.1		MR2.6	1	MG2.3		MR2.3
49	1	MG2.4		MR1.1	1	MG2.4		MR3.1	2	MG2.4		MR2.5	1	MG2.4		MR2.3
50																
51																
52																
53	2	S1.3		MR2.3	1	S1.1		MR3.1	3	S1.1	NS1.2	MR2.3	2	S1.3		MR2.3
54	2	S1.2		MR2.3	2	S1.3		MR3.1	2	S1.2		MR2.6	1	S1.3		MR2.3
55	2	S1.1		MR3.1	2	S1.3		MR3.1	2	S1.1		MR2.3	2	S1.1		MR2.3
56	2	S1.2		MR2.3	1	S1.2		MR2.6	2	NS1.3		MR2.3	1	S1.3		MR2.3
57	2	S1.2		MR2.3	1	S1.2		MR2.6	2	S1.2		MR2.3	1	S1.3		MR2.3

**Grade 3 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
1	1	NS2.4		MR2.6	1	NS2.4		MR2.6	1	NS2.4		MR2.6	1	NS2.4		MR2.6
2	1	NS1.3		MR2.6	1	NS1.3		MR1.2	1	NS1.3	NS1.5	MR1.2	1	NS1.3		MR2.4
3	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
4	1	NS1.3		MR2.6	1	NS1.3		MR1.2	1	NS1.3		MR1.2	1	NS1.3		MR2.4
5	1	NS2.1		MR2.1	1	AF1.2	NS2.1	MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.5
6	2	AF2.1		MR2.6	2	NS3.3	NS2.4	MR2.6	2	NS3.3		MR2.6	2	NS2.4		MR2.6
7	1	NS2.5		MR2.6	1	NS2.5		MR2.6	1	NS2.5		MR2.6	1	NS2.5		MR2.6
8	2	NS2.4		MR2.6	1	NS2.4		MR2.6	2	NS3.3		MR2.6	2	NS2.4		MR2.6
9	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
10	1	NS3.3		MR2.6	1	NS3.3	NS2.1	MR2.6	1	NS3.3		MR2.6	1	NS2.1		MR2.6
11	1	NS3.1		MR1.1	1	NS3.1		MR1.1	1	NS3.1		MR2.3	1	NS3.1		MR1.1
12																
13																
14	1	NS3.3		MR2.6	1	NS2.1		MR2.6	1	NS3.3		MR2.6	1	NS2.1		MR2.6
15	2	NS3.1		MR3.1	2	NS3.1		MR1.1	1	NS3.1		MR2.3	1	NS3.2		MR1.1
16	1	NS2.4		MR2.6	1	NS2.4		MR2.6	1	NS2.4		MR2.6	1	NS2.4		MR2.6
17	1	NS1.2		MR1.1	2	NS1.2		MR1.1	1	NS1.2		MR1.1	2	NS1.2		MR1.1
18	2	NS2.3		MR3.1	2	NS2.3		MR1.1	1	AF1.1		MR3.2	1	NS2.3		MR2.6
19	1	NS1.4		MR2.6	1	NS1.4		MR2.5	1	NS1.4		MR2.2	1	NS1.4		MR2.2
20	1	NS3.4		MR2.6	1	NS3.4		MR2.3	2	NS3.1		MR2.3	2	NS3.4		MR2.3
21	1	AF1.5		MR3.1	1	NS2.3		MR1.1	1	NS2.3		MR3.2	1	NS2.1		MR2.6
22	1	AF1.5		MR2.6	1	NS1.5		MR1.2	1	NS1.5		MR2.6	1	NS1.5		MR2.1
23	1	NS2.6		MR2.6	1	NS2.6		MR3.3	1	NS2.6		MR2.6	1	NS2.6		MR1.1

**Grade 3 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
24	1	NS3.3		MR2.6	1	NS3.3		MR2.6	1	NS3.3		MR2.6	1	NS2.1		MR2.6
25	2	N/A		MR2.6	2	NS2.1		MR1.1	2	NS3.3		MR2.3	2	NS3.3		MR1.1
26	1	NS1.3		MR2.6	1	NS1.1		MR1.2	1	NS1.1		MR2.3	1	NS1.3		MR1.1
27																
28																
29	1	AF2.1		MR2.6	2	AF2.2		MR1.1	1	AF2.2		MR2.3	1	AF2.1		MR1.2
30	1	AF1.2		MR2.6	2	AF1.2		MR1.1	2	AF1.1		MR2.4	2	AF1.1		MR1.2
31	1	AF1.5		MR2.6	1	AF1.5		MR1.1	1	AF1.5		MR2.2	1	AF1.5		MR2.6
32	1	AF2.1		MR2.6	2	AF2.2		MR1.1	1	AF2.2		MR2.3	2	AF1.2		MR2.1
33	1	AF1.1		MR2.6	1	AF1.1		MR1.1	1	AF1.1		MR3.2	1	AF1.1		MR1.2
34	1	AF1.4		MR2.6	1	AF1.4	AF2.1	MR2.2	1	AF1.4		MR2.6	1	AF1.4		MR2.2
35	1	AF1.1		MR2.6	1	AF1.1		MR1.1	1	AF1.1		MR3.2	1	AF1.2		MR2.1
36	1	AF1.2		MR2.6	1	AF2.2		MR1.1	1	NS1.1		MR2.6	2	AF2.1		MR1.2
37																
38																
39	1	MG1.1		MR1.1	1	MG1.1		MR3.1	1	MG1.1		MR2.2	1	MG1.1		MR1.1
40	1	MG2.5		MR1.1	1	MG2.5		MR1.2	1	MG2.5		MR2.2	1	MG2.5		MR1.1
41	1	MG1.2		MR2.6	2	MG1.2		MR1.2	1	MG1.2		MR2.6	1	MG1.1		MR3.1
42	1	MG1.3		MR2.6	1	MG1.3		MR2.6	1	MG1.3		MR2.6	1	MG1.3		MR2.6
43	2	MG1.4		MR2.6	2	MG1.4		MR2.2	1	NS3.3		MR2.2	1	MG1.4		MR2.6
44	1	MG2.1		MR2.6	1	MG2.1		MR1.1	1	MG2.1		MR1.1	1	MG2.1		MR1.1
45	1	MG1.2		MR1.2	1	MG1.2		MR2.2	1	MG1.2		MR2.6	1	MG1.2		MR1.1
46	1	MG1.3		MR2.6	1	MG1.3		MR1.2	1	MG1.3		MR2.6	1	MG1.3		MR2.1
47	1	MG2.4		MR2.6	1	MG2.2		MR1.1	1	MG2.2		MR1.1	1	MG2.2		MR1.1

**Grade 3 Mathematics (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>MR5</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>MR6</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>MR7</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>	<b>MR8</b>
48	1	MG2.3		MR2.6	1	MG2.3		MR1.2	1	MG2.1		MR2.3	1	MG2.3		MR2.3
49	1	MG2.4		MR2.6	1	MG2.4		MR1.1	1	MG2.4		MR1.1	1	MG2.4		MR1.1
50																
51																
52																
53	2	N/A		MR1.2	2	S1.3	S1.2	MR2.3	2	S1.3	NS1.2	MR2.3	2	S1.2		MR2.3
54	2	S1.2		MR1.2	1	S1.2		MR1.1	2	NS1.2		MR2.3	2	S1.3		MR2.3
55	2	S1.1		MR1.2	1	S1.1		MR2.3	1	S1.1		MR2.3	2	S1.1		MR3.1
56	2	S1.3		MR1.2	2	S1.3		MR2.3	2	S1.2		MR2.3	2	S1.3		MR3.1
57	2	S1.2		MR1.2	1	S1.2		MR1.1	2	S1.2		MR2.3	1	S1.1		MR2.4

**Table E14:  
Grade 4 Mathematics**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
1	1	NS1.5		MR2.4	1	NS1.7		MR2.6	2	NS1.7		MR2.2	1	NS1.7		MR2.3
2	1	NS3.2		MR2.6	1	NS3.4		MR2.6	1	NS3.4		MR2.6	1	NS3.2		MR2.6
3	1	NS1.8		MR2.3	1	NS1.8		MR2.6	2	NS1.8		MR3.1	1	NS1.9		MR2.3
4	1	NS1.1		MR2.3	1	NS1.1		MR2.6	1	NS1.1		MR1.2	1	NS1.1		MR2.4
5	1	NS1.9		MR2.3	1	NS1.8		MR1.1	2	NS1.8		MR3.1	1	NS1.9		MR2.3
6	1	NS3.2		MR2.6	1	NS3.4		MR2.6	1	NS3.4		MR2.6	1	NS3.4	NS3.2	MR2.6
7	1	NS3.2		MR2.6	1	NS3.2		MR2.5	1	NS3.4		MR2.6	1	NS3.4	NS3.2	MR2.6
8	1	NS3.2		MR2.5	1	NS3.1		MR2.6	2	NS3.1		MR1.2	2	NS3.3		MR3.2
9	1	NS4.1		MR2.1	1	NS4.1		MR1.1	1	NS4.1		MR2.6	1	NS4.1		MR2.6
10	1	NS4.2		N/A	1	NS4.2		MR3.1	2	NS4.2		MR3.2	1	NS4.2		MR1.1
11	1	NS2.2		MR2.6	1	NS1.3		MR3.1	2	NS2.2		MR2.2	1	NS2.2	NS2.2	MR2.1
12	1	NS3.1		MR2.6	1	NS3.1		MR2.6	1	NS3.1		MR2.6	1	NS3.1		MR2.6
13																
14																
15	1	NS1.6		MR2.3	1	NS1.6		MR2.4	2	NS1.6		MR2.2	2	NS1.6	NS1.5	MR2.6
16	1	NS1.9		MR2.3	1	NS1.7		MR2.4	2	NS1.7		MR2.2	1	NS1.7	S1.1	MR2.5
17	1	NS3.4	NS3.2	MR2.6	1	NS3.4		MR2.6	1	NS3.4		MR2.6	1	NS3.4		MR2.6
18	1	NS1.2		MR1.1	1	NS1.2		MR3.1	2	NS1.2		MR2.5	1	NS1.2		MR2.3
19	1	NS3.2		MR2.6	1	NS3.2		MR2.6	2	NS3.1		MR2.6	1	NS3.3		MR3.2
20	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
21	1	NS1.3		MR2.6	1	NS1.3		MR2.1	2	NS1.3		MR2.2	1	NS1.3		MR2.1
22	1	N/A	NS1.8	MR2.6	1	NS1.8		MR2.6	2	NS1.2	NS1.8	MR3.3	1	NS1.8		MR1.1
23	1	NS3.3	NS3.1	MR2.6	1	NS3.1		MR2.6	1	NS2.1		MR2.6	1	NS3.1		MR2.6

**Grade 4 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
24	1	NS1.7		MR2.3	1	NS1.7		MR2.6	2	NS1.7		MR2.3	1	NS1.7		MR2.3
25	1	NS1.1		MR2.3	1	NS1.1		MR2.6	1	NS1.1		MR2.2	1	NS1.1		MR2.4
26																
27																
28	2	AF1.1		MR1.1	1	AF1.1		MR1.1	2	AF1.1	NS2.1	MR2.6	2	NS3.1		MR2.4
29	1	AF1.2		MR2.6	1	AF1.3		MR2.6	2	AF1.3	NS3.1	MR2.6	1	AF1.2		MR1.2
30	1	AF1.4		MR2.4	2	AF1.4		MR2.6	2	MG1.4		MR3.1	1	MG1.4	MG1.1	MR2.3
31	1	AF1.5		MR2.6	1	AF1.5		MR2.6	2	AF1.1	NS3.1	MR2.6	1	AF1.5		MR2.6
32	2	AF1.2	AF1.5	MR2.6	2	AF1.1	AF1.3	MR2.6	2	AF1.3	NS3.1	MR2.6	1	AF1.5	NS3.1	MR2.6
33	1	AF1.1		MR2.6	1	AF1.1		MR2.6	2	AF2.1	AF1.1	MR2.6	1	AF1.1	NS3.1	MR2.6
34	1	AF1.2	AF1.3	MR2.6	1	AF1.1	AF1.2	MR2.6	2	AF1.3	AF1.1	MR2.1	1	AF1.2	AF1.3	MR2.6
35	1	AF1.2	AF1.3	MR2.6	1	AF1.3	AF1.2	MR2.6	2	AF1.3	NS3.1	MR2.6	1	AF1.3	AF1.2	MR2.6
36	1	AF1.2	AF1.3	MR2.6	1	AF1.3	AF1.2	MR2.6	1	AF1.3	NS2.1	MR2.6	1	AF1.2	AF1.2	MR2.6
37	1	AF1.1	AF1.5	MR2.6	1	AF1.5		MR2.6	2	AF1.1	NS2.1	MR2.6	1	AF1.5		MR2.6
38																
39																
40	2	MG3.6		MR2.3	2	MG3.6		MR2.2	3	MG3.6		MR3.1	3	MG3.6		MR3.3
41	1	MG3.3		MR1.1	1	MG3.3		MR2.2	1	MG3.3		MR2.2	1	MG3.3		MR1.1
42	1	AF1.4	MG1.4	MR2.6	2	MG1.4		MR1.1	3	MG1.4	MG1.1	MR2.2	1	AF1.4	MG1.1	MR2.3
43	2	MG2.1		MR2.3												
44	1	MG3.1		MR1.1	1	MG3.1		MR1.1	2	MG3.1		MR1.1	1	MG3.1		MR2.3
45	1	AF1.4	MG1.4	MR2.6	1	MG1.1		MR2.6	2	MG1.1	NS3.1	MR2.6	2	AF1.4	MG1.1	MR2.6
46	1	MG2.3		MR2.6	1	MG2.3		MR2.6	2	MG2.3		MR2.3	2	MG2.3		MR2.3
47	1	MG3.5		MR2.3	1	MG3.5		MR2.2	2	MG3.5		MR2.3	1	MG3.5		MR2.3

**Grade 4 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
48	1	MG3.2		MR2.3	1	MG3.2		MR2.2	2	MG3.2		MR2.2	1	MG3.2		MR2.3
49	1	MG2.2		MR2.6	1	MG2.2		MR1.1		MG2.2		MR2.3	2	MG2.2		MR2.3
50																
51																
52																
53	1	S1.2		MR1.1	1	S1.2		MR2.2	2	S1.2		MR2.2	1	S1.2		MR1.1
54	2	S1.1		MR2.3	2	S2.1		MR2.2	2	S1.3		MR2.5	2	S1.3		MR3.1
55	2	S1.3		MR2.3	2	S1.3		MR2.3	2	NS1.3	NS2.1	MR2.5	2	S1.3		MR3.1
56	1	S2.2		MR1.1	2	S2.2		MR1.1	2	S2.2		MR3.1	2	S2.2		MR2.1
57	2	S2.1		MR1.1	3	S2.1		MR3.2	2	S2.1		MR3.1	2	S1.3	S2.1	MR2.1

**Grade 4 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
1	2	NS1.7		MR1.1	1	NS1.5	NS1.7	MR2.3	1	NS1.7		MR2.3	1	NS1.5		MR2.3
2	1	NS3.2		MR3.1	1	NS3.4	NS3.2	MR2.6	1	NS4.1		MR2.6	2	NS3.4		MR1.1
3	1	NS1.9		MR1.1	1	NS1.8		MR1.1	1	NS1.9		MR1.1	1	NS1.9		MR1.1
4	1	NS1.1		MR1.1	1	NS1.1		MR1.1	1	NS1.1		MR2.3	1	NS1.1		MR1.2
5	1	NS1.9		MR1.1	2	NS1.9		MR2.3	1	NS1.9		MR2.3	2	NS1.9		MR1.1
6	1	NS3.2		MR2.1	1	NS3.4		MR2.6	1	NS3.2	NS3.2	MR2.6	1	NS3.4		MR1.1
7	1	NS3.2		MR2.1	1	NS3.4		MR2.6	1	NS3.4	NS3.2	MR2.6	2	NS3.4		MR1.1
8	2	NS3.2		MR2.1	2	NS3.3	NS3.2	MR2.6	2	NS3.3		MR2.6	2	NS3.3		MR2.1
9	1	NS4.1		MR3.3	1	NS4.1		MR1.2	2	NS4.1		MR1.2	2	NS4.1		MR2.2
10	1	NS4.2		MR1.1	1	NS4.2		MR1.1	1	NS4.2		MR1.1	1	NS4.2		MR1.1
11	1	NS2.2		MR1.1	1	NS2.2		MR1.2	1	NS2.2		MR2.5	1	AF2.2		MR1.2
12	1	NS3.1		MR2.6	1	NS3.1		MR2.6	1	NS3.1		MR2.6	1	NS3.1		MR2.6
13																
14																
15	1	NS1.6		MR2.6	1	NS1.6		MR1.1	1	NS1.6		MR1.2	2	NS1.6		MR1.2
16	1	NS1.9		MR2.1	1	NS1.9	NS1.7	MR2.3	1	NS1.9		MR1.1	1	NS1.9		MR1.1
17	1	NS3.2		MR2.6	1	NS3.4		MR2.6	1	NS3.4	NS3.2	MR2.6	1	NS3.2		MR2.6
18	1	NS1.2		MR2.6	2	NS1.2		MR1.1	2	NS1.2		MR2.2	1	NS1.2		MR1.2
19	1	NS3.2		MR3.2	1	NS3.2		MR2.6	1	NS3.3	NS3.2	MR2.6	1	NS3.3		MR2.6
20	1	NS2.1		MR2.1	1	NS2.1		MR2.6	1	NS2.1	NS3.1	MR2.6	1	NS2.1		MR2.6
21	1	NS3.1		MR2.6	2	NS1.3		MR2.1	1	NS2.2		MR2.3	1	NS1.3		MR1.1
22	1	N/A		MR2.6	2	NS1.8		MR1.1	2	N/A	NS1.8	MR1.1	1	NS1.8		MR1.1
23	1	NS3.1		MR2.1	1	NS2.2		MR2.6	1	NS3.1	NS2.1	MR2.6	1	NS3.1		MR2.6

**Grade 4 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
24	1	NS1.7		MR2.6	1	NS1.5		MR2.3	2	NS1.7		MR2.3	2	NS1.7		MR2.3
25	1	NS1.1		MR2.6	1	NS1.1		MR1.2	1	NS1.1		MR2.3	1	NS1.1		MR1.1
26																
27																
28	2	AF1.1		MR1.1	2	AF1.1		MR2.4	2	AF1.1		MR3.2	2	AF1.1		MR2.3
29	1	AF1.3		MR1.1	1	AF1.2	AF1.3	MR1.2	2	NS1.3	NS1.2	MR3.2	1	AF1.2		MR2.2
30	1	AF1.4		MR1.1	1	AF1.4		MR3.2	1	AF1.4		MR3.2	2	MG1.4		MR2.4
31	1	AF1.5		MR1.1	2	AF1.5		MR1.1	1	AF1.5		MR2.6	1	AF1.1		MR2.3
32	1	AF1.5	AF1.3	MR2.6	2	AF1.2	AF1.3	MR1.1	1	AF1.5		MR2.6	1	AF1.1		MR2.3
33	1	AF1.1		MR1.1	2	AF1.1		MR1.1	2	AF1.1		MR2.6	1	AF2.1	AF1.1	MR2.3
34	1	AF1.1	AF1.2	MR1.1	1	AF1.1	AF1.2	MR1.1	1	AF1.2	AF1.3	MR3.2	1	AF1.3	AF1.2	MR2.6
35	1	AF1.3		MR2.6	2	AF1.2	AF1.3	MR2.6	1	AF1.3	AF1.2	MR3.2	1	AF1.3		MR2.6
36	1	AF1.2		MR2.6												
37	1	AF1.5		MR2.6	1	AF1.5		MR1.1	1	AF1.5		MR2.6	2	AF1.5		MR2.6
38																
39																
40	2	MG3.6		MR1.2	2	MG3.6		MR1.1	2	MG3.6		MR2.3	2	MG3.6		MR2.3
41	1	MG3.3		MR1.1	1	MG3.3		MR1.1	1	MG3.3		MR2.2	1	MG3.3	MG2.2	MR2.3
42	1	MG1.4		MR1.1	2	MG1.4		MR2.2	2	AF1.4	MG1.4	MR2.4	2	MG1.4		MR2.4
43	2	MG2.1		MR1.1	2	MG2.1		MR2.3	2	MG2.1		MR2.3	2	MG2.1		MR2.3
44	1	MG3.1		MR1.1	1	MG3.1		MR1.1	1	MG3.1		MR2.3	1	MG3.1		MR2.4
45	1	MG1.1		MR1.1	1	MG1.1		MR2.4	1	AF1.4	MG1.4	MR2.3	1	MG1.1	MG1.4	MR2.4
46	2	MG2.3		MR1.1	1	MG2.3		MR2.3	1	MG2.3		MR2.6	1	MG2.1		MR2.4
47	1	MG3.5		MR1.1	1	MG3.5		MR1.1	1	MG3.5		MR1.1	1	MG3.5		MR2.3

**Grade 4 Mathematics (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>MR5</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>MR6</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>MR7</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>	<b>MR8</b>
<b>48</b>	1	MG3.2		MR1.1	1	MG3.2		MR1.2	1	MG3.2		MR1.1	1	MG3.2		MR2.2
<b>49</b>	2	MG2.2		MR1.1	1	MG2.2		MR2.3	1	MG2.2		MR2.6	1	MG2.2		MR2.3
<b>50</b>																
<b>51</b>																
<b>52</b>																
<b>53</b>	1	S1.2		MR1.1	1	S1.2		MR1.1	1	S1.2		MR1.1	1	S1.2		MR2.1
<b>54</b>	2	S2.1		MR1.1	2	S1.3		MR2.3	2	S1.1		MR2.3	1	S2.1		MR2.2
<b>55</b>	2	S1.3		MR2.6	2	S1.3		MR2.3	2	S1.3		MR1.1	1	S1.3		MR2.3
<b>56</b>	1	S2.2		MR1.1	1	S2.2		MR1.1	2	S2.2		MR3.1	2	S2.1		MR2.3
<b>57</b>	2	S2.1		MR2.6	2	S2.1		MR2.3	2	S2.1		MR2.3	1	S2.2		MR2.1

**Table E15:  
Grade 5 Mathematics**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
1	1	NS1.5		MR2.3	1	NS1.5		MR2.6	2	NS1.5		MR3.1	1	NS1.5		MR2.3
2	1	NS2.1		MR2.6	1	NS1.1		MR2.6	1	NS2.1		MR2.6	1	NS1.1		MR2.6
3	1	NS1.4		MR2.6	1	NS1.4		MR2.5	2	NS1.4		MR3.2	1	NS1.4		MR2.6
4	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS1.1		MR2.6
5	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS1.1		MR2.6
6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1	NS1.1	MR2.6
7	1	NS2.2		MR2.6	1	NS2.2		MR2.6	2	NS2.2		MR2.6	2	NS2.2		MR1.2
8	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
9	1	NS1.2		MR2.3	1	NS1.2		MR2.6	1	NS1.2		MR2.6	1	NS1.2		MR2.1
10	1	NS1.3		MR2.6	1	NS1.4		MR2.6	1	NS1.4		MR2.2	1	NS1.4		MR1.1
11																
12																
13	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS1.1		MR2.6
14	1	NS2.1		MR2.3	1	NS1.2		MR2.6	1	NS1.2		MR1.2	1	NS1.2		MR2.1
15	1	NS2.5		MR2.6	1	NS2.5		MR2.6	1	NS2.3		MR2.6	1	NS2.5		MR2.6
16	1	NS2.2		MR2.2	1	NS2.2		MR2.6	2	NS2.2		MR2.6	1	NS2.2		MR2.6
17	1	NS1.4		MR2.6	1	NS1.4		MR2.6	1	NS1.4		MR2.6	1	NS1.4		MR2.6
18	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
19	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
20	1	NS1.2		MR2.6	1	NS1.2		MR2.6	1	NS1.2		MR2.6	1	NS1.2		MR2.6
21	1	NS1.5		MR2.3	1	NS1.5		MR1.1	2	NS1.5		MR3.1	1	NS1.5		MR2.3
22	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.3	1	NS2.3		MR2.6
23	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1	NS1.1	MR2.6

**Grade 5 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
24																
25																
26	2	AF1.1		MR2.6	2	S1.4	AF1.4	MR1.1	2	S1.4		MR3.2	2	AF1.5	AF1.4	MR1.1
27	2	AF1.1		MR2.3	1	AF1.1		MR2.6	2	AF1.1		MR3.1	2	AF1.1		MR2.3
28	1	AF1.4	S1.5	MR2.3	1	AF1.1		MR2.6	2	AF1.4		MR2.3	1	AF1.4		MR2.3
29	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6
30	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6
31	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6
32	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.6
33	1	AF1.4	AF1.2	MR2.3	1	AF1.4		MR2.6	2	S1.5		MR2.2	2	AF1.5	S1.4	MR1.1
34	1	AF1.4	S1.5	MR2.3	1	AF1.1		MR2.6	2	S1.4		MR2.3	2	S1.4	AF1.4	MR1.1
35	1	AF1.4	S1.5	MR2.3	1	AF1.1		MR2.6	2	S1.4		MR2.3	2	S1.4	AF1.4	MR1.1
36	1	AF1.5	AF1.4	MR2.3	1	AF1.5		MR2.6	2	S1.5		MR2.2	2	AF1.5	S1.4	MR1.1
37	2	AF1.3	AF1.2	MR2.6	1	AF1.3		MR2.6	1	AF1.2		MR2.6	2	AF1.3		MR1.1
38																
39																
40	1	MG2.1		MR2.6	1	MG2.1		MR2.1	2	MG2.1		MR2.6	1	MG2.1		MR2.1
41	1	MG1.3		MR2.6	1	MG1.3		MR2.6	2	MG1.3		MR2.6	1	MG1.3		MR2.6
42	2	MG1.2		MR2.6	2	MG1.2		MR2.6	2	MG1.2		MR2.6	2	MG1.2		MR2.6
43	1	MG1.2		MR2.6	1	MG2.2		MR2.6	2	MG2.2		MR2.6	1	MG2.2		MR2.3
44	1	MG1.1		MR2.6	2	MG1.1		MR2.6	2	MG1.1		MR2.3	1	MG1.1		MR2.6
45	1	MG2.2		MR2.6	1	MG2.2		MR2.6	2	MG2.2		MR2.6	1	MG2.2		MR2.6
46	1	MG1.4		MR2.4	1	MG1.4		MR2.2	2	MG1.4		MR2.1	1	MG1.4	MG1.3	MR2.4
47	1	MG2.1		MR1.1	1	MG2.1		MR2.2	2	MG2.1		MR3.1	1	MG2.1		MR2.3

**Grade 5 Mathematics (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>MR1</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>MR2</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>MR3</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>	<b>MR4</b>
48	1	MG1.3		MR2.6	1	MG1.3		MR2.6	2	MG1.1		MR2.2	1	MG1.3		MR2.3
49	1	MG2.2		MR2.6	1	MG1.1		MR2.6	2	MG2.2		MR2.6	1	MG2.2		MR2.6
50																
51																
52																
53	1	S1.4		MR2.3	1	S1.4		MR2.6	2	AF1.1		MR1.1	2	S1.4	AF1.5	MR2.3
54	2	S1.2		MR2.3	1	S1.2		MR2.3	2	S1.2	AF1.1	MR1.2	2	S1.2		MR2.3
55	2	AF1.1	S1.2	MR2.3	1	S1.4	AF1.1	MR2.6	2	AF1.1		MR1.1	2	S1.4		MR2.3
56	1	S1.5	AF1.4	MR2.4	1	S1.5		MR2.6	2	S1.4	AF1.4	MR2.6	2	AF1.4	S1.5	MR2.3
57	1	S1.1		MR2.6	1	S1.1		MR2.6					1	S1.1		MR1.1

**Grade 5 Mathematics (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>MR5</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>MR6</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>MR7</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>	<b>MR8</b>
1	1	NS1.5		MR1.1	1	NS1.5		MR2.3	1	NS1.5		MR2.3	1	NS1.5		MR2.3
2	1	N/A		MR2.6	1	NS1.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
3	1	NS1.4		MR1.1	1	NS1.4		MR1.2	1	NS1.4		MR1.2	1	NS1.4		MR1.2
4	1	NS2.1		MR3.3	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
5	1	NS2.1		MR2.1	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
6	1	NS2.1		MR2.1	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.6
7	1	NS2.2		MR2.6	1	NS2.2		MR2.6	1	NS2.2		MR2.6	2	NS2.5		MR3.1
8	1	NS2.3		MR2.1	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
9	1	NS1.2		MR2.1	1	NS1.2		MR1.1	1	NS1.2		MR1.1	2	NS1.2		MR3.1
10	1	NS1.4		MR1.1	1	NS1.3		MR2.4	1	NS1.3		MR1.2	1	NS1.4		MR3.1
11																
12																
13	1	NS2.1		MR2.6												
14	1	NS1.2		MR2.1	1	NS1.2		MR1.1	1	NS1.2		MR1.1	1	NS1.2		MR2.2
15	1	NS2.5		MR1.1	1	NS2.5		MR2.6	1	NS2.1		MR2.6	1	NS2.3		MR2.6
16	1	NS2.2		MR1.1	2	NS2.2		MR2.6	1	NS2.2		MR2.6	2	NS2.2		MR3.2
17	1	NS1.4		MR1.1	1	NS1.4		MR1.2	1	NS1.4		MR1.2	1	NS1.4		MR3.2
18	1	NS2.3		MR1.1	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.5
19	1	NS2.3		MR1.1	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
20	1	NS1.2		MR1.1	2	NS1.2		MR2.6	1	NS1.2		MR1.1	1	NS1.2		MR1.1
21	1	NS1.5		MR1.1	1	NS1.5		MR2.3	1	NS1.5		MR2.3	1	NS1.4		MR1.1
22	1	NS2.3		MR1.1	1	NS2.3		MR2.6	1	NS2.3		MR2.6	1	NS2.3		MR2.6
23	1	NS2.1		MR1.1	1	NS2.1		MR2.6	1	NS2.1		MR2.6	1	NS2.1		MR2.5

**Grade 5 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
24																
25																
26	2	AF1.1		MR1.1	2	AF1.1		MR2.3	1	AF1.5		MR2.3	1	S1.2		MR3.2
27	2	S1.2		MR1.1	2	AF1.1		MR2.3	2	AF1.1		MR2.3	2	AF1.1		MR2.4
28	1	S1.5		MR1.1	1	AF1.4	S1.5	MR2.3	1	S1.5	S1.4	MR2.4	1	AF1.4		MR2.3
29	1	AF1.2		MR1.1	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.4
30	1	AF1.2		MR1.1	1	AF1.2		MR2.6	1	S1.5	S1.4	MR2.4	1	AF1.2		MR2.4
31	1	AF1.2		MR1.1	1	AF1.2		MR2.6	1	S1.5	S1.4	MR2.4	1	AF1.2		MR2.4
32	1	AF1.2		MR1.1	1	AF1.2		MR2.6	1	AF1.2		MR2.6	1	AF1.2		MR2.4
33	2	AF1.4		MR1.1	2	AF1.4		MR2.3	2	AF1.5		MR2.3	1	AF1.4	S1.1	MR3.2
34	1	AF1.4		MR1.1	1	AF1.4	S1.4	MR2.3	1	S1.5	S1.4	MR2.4	1	S1.4	S1.5	MR2.4
35	1	AF1.4		MR1.1	1	AF1.4	S1.4	MR2.3	1	S1.5	S1.4	MR2.4	2	S1.5	S1.4	MR2.4
36	1	AF1.4		MR1.1	2	AF1.5		MR2.3	2	AF1.5		MR2.3	2	S1.4	S1.5	MR3.2
37	1	AF1.3		MR1.1	2	AF1.3		MR2.6	2	AF1.2		MR1.1	1	AF1.2		MR2.6
38																
39																
40	1	MG2.1		MR1.1	1	MG2.1		MR2.3	1	MG2.1		MR2.4	1	MG2.1		MR2.4
41	2	MG1.3		MR1.1	1	MG1.3		MR2.4	1	MG1.3		MR2.6	2	MG1.3		MR2.6
42	2	MG1.2		MR1.1	2	MG1.2		MR2.2	1	MG1.2		MR2.6	2	MG1.2		MR2.6
43	1	MG2.2		MR2.1	2	MG2.2		MR2.2	1	MG2.2		MR2.6	1	MG2.2		MR2.4
44	1	MG1.1		MR1.1	1	MG1.1		MR2.6	1	MG1.4		MR2.6	1	MG1.4		MR2.6
45	1	MG2.2		MR2.6	2	MG2.2		MR2.2	1	MG2.2		MR2.6	1	MG1.4		MR2.5
46	1	MG1.4		MR2.6	1	MG1.4		MR2.6	1	MG1.4		MR2.4	1	MG1.3		MR2.3
47	1	MG2.1		MR1.1	1	MG2.1		MR2.3	1	MG2.1		MR1.1	1	MG2.1		MR2.4

**Grade 5 Mathematics (Continued)**

<b>Item</b>	<b>DOK R5</b>	<b>R5P</b>	<b>R5S</b>	<b>MR5</b>	<b>DOK R6</b>	<b>R6P</b>	<b>R6S</b>	<b>MR6</b>	<b>DOK R7</b>	<b>R7P</b>	<b>R7S</b>	<b>MR7</b>	<b>DOK R8</b>	<b>R8P</b>	<b>R8S</b>	<b>MR8</b>
48	2	MG1.3		MR1.1	1	MG1.3		MR2.6	1	MG1.4		MR2.6	1	MG1.3		MR2.3
49	1	MG2.2		MR3.3	2	MG2.2		MR2.2	1	MG2.2		MR2.6	2	MG2.2		MR2.6
50																
51																
52																
53	1	S1.4		MR1.1	1	S1.4		MR2.3	2	S1.4		MR2.3	2	AF1.1	S1.2	MR2.3
54	2	N/A		MR1.1	2	S1.2		MR2.3	2	S1.2		MR2.3	1	AF1.1		MR2.3
55	1	N/A		MR1.1	1	AF1.1		MR2.3	2	AF1.1		MR2.3	1	AF1.1		MR2.3
56	1	S1.5		MR1.1	1	S1.4		MR2.3	1	S1.5	S1.4	MR2.4	1	S1.4	S1.4	MR2.4
57	1	S1.1		MR1.1	1	S1.1		MR2.6	1	S1.1		MR2.6	2	S1.1		MR2.6

**Table E16:  
Grade 6 Mathematics**

Item	DOK R1	R1P	R1S	R1P	DOK R2	R2P	R2S	R2P	DOK R3	R3P	R3S	R3P	DOK R4	R4P	R4S	R4P
1	1	NS2.4		MR2.7	1	NS2.4		MR1.1	1	NS2.4		MR1.2	1	NS2.4		MR1.3
2	2	AF2.3	AF2.2	MR3.1	1	AF2.3		MR2.7	2	NS1.3	NS1.2	MR2.2	2	NS2.3		MR1.1
3	1	NS1.4	NS1.3	MR3.1	1	NS1.4		MR1.1	1	NS1.4		MR1.2	1	NS1.4		MR2.1
4	2	NS2.1		MR2.7	1	NS2.2		MR2.7	1	NS2.1		MR1.2	1	NS2.1		MR2.1
5	2	NS2.3		MR2.1	1	NS2.3		MR1.1	2	NS2.3		MR1.2	2	NS2.3		MR2.7
6	2	NS2.1		MR2.7	2	NS2.1		MR2.2	2	NS2.2		MR2.7	1	NS2.1		MR1.2
7	2	NS1.3		MR2.1	1	NS1.3		MR1.1	2	NS1.3		MR2.3	2	NS1.3	AF2.2	MR1.1
8	1	AF1.4	NS2.3	MR2.7	1	AF1.3		MR1.1	1	NS2.1		MR1.1	1	NS2.3		MR2.2
9	2	NS2.1		MR2.1	2	NS2.3		MR2.4	2	NS2.1		MR1.2	1	NS2.3		MR3.2
10	1	NS1.4	NS1.3	MR3.1	1	NS1.4		MR2.7	1	NS1.4		MR1.2	1	NS1.3		MR2.1
11	2	NS1.4	NS1.3	MR2.1	1	NS1.3		MR1.1	2	NS1.4		MR2.4	2	NS1.3		MR2.2
12																
13																
14	1	NS1.1		MR2.4	1	NS1.1		MR2.1	1	NS1.1		MR1.2	1	NS1.1		MR1.2
15	2	NS1.3	NS2.3	MR2.1	2	NS1.3		MR2.2	2	NS1.3		MR2.3	2	NS1.3		MR1.1
16	1	NS1.4	NS1.3	MR3.1	1	NS1.4		MR1.1	1	NS1.4		MR1.2	1	NS1.4		MR2.1
17	2	NS2.2		MR2.7	2	NS2.4		MR2.2	2	NS2.1		MR1.2	2	NS2.4		MR1.3
18	1	NS2.3		MR2.7	1	NS2.3		MR3.1	2	NS2.3		MR1.2	1	NS2.3		MR2.1
19	1	NS1.1		MR2.4	1	NS1.1		MR3.1	1	NS1.1		MR1.2	1	NS1.1		MR2.6
20	2	NS1.4	NS2.3	MR2.1	1	NS1.4		MR2.1	2	NS1.4		MR1.1	2	NS1.4		MR2.7
21	1	AF1.4	NS2.3	MR2.7	1	AF1.3		MR2.5	1	NS2.3		MR1.3	1	NS2.3		MR1.3
22	2	NS1.2	AF2.2	MR2.1	1	NS1.2		MR2.5	2	NS1.2		MR1.2	1	NS1.2		MR2.5
23	2	NS2.3		MR2.1	2	AF2.3		MR2.5	2	NS2.3		MR1.2	2	NS1.2		MR2.2

**Grade 6 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	R1P	DOK R2	R2P	R2S	R2P	DOK R3	R3P	R3S	R3P	DOK R4	R4P	R4S	R4P
24																
25																
26	1	AF1.1		MR2.7	1	AF1.1		MR3.1	1	AF1.1		MR1.2	1	NS1.1		MR2.3
27	2	AF2.3		MR2.1	2	AF2.2		MR3.3	2	NS1.2		MR1.2	1	AF2.3		MR1.1
28	1	AF3.1	NS2.3	MR2.7	1	AF1.2		MR2.5	3	MG2.3		MR3.3	1	AF3.1		MR2.5
29	2	NS2.3		MR2.1	1	AF1.1		MR2.5	2	AF1.1		MR1.2	1	AF1.1		MR2.7
30	1	AF1.4	NS2.3	MR2.7	1	AF1.4		MR2.2	1	AF1.4		MR1.3	1	NS2.3		MR1.3
31	2	AF2.1		MR2.1	1	AF2.1		MR2.7	1	AF2.1		MR1.1	1	AF2.1		MR2.7
32	1	AF1.1	NS2.3	MR2.7	1	AF1.1		MR1.1	1	AF1.1		MR2.7	1	AF1.1		MR2.7
33	2	AF2.3	NS2.3	MR2.1	2	AF2.2		MR2.3	2	NS1.2		MR2.7	2	AF2.3		MR2.7
34	2	AF1.2		MR2.4	1	AF1.2		MR2.4	2	AF1.2		MR3.1	2	AF1.2		MR2.4
35	1	AF2.3		MR2.1	2	AF2.1		MR1.1	2	NS1.2		MR1.2	1	NS2.3		MR2.7
36	1	AF1.1		MR2.1	2	AF1.1		MR3.1	2	NS2.3		MR3.1	1	AF1.1		MR2.4
37	1	AF3.1		MR2.1	2	AF3.1		MR2.5	2	MG2.3		MR3.3	1	AF3.2		MR2.4
38	2	AF2.3		MR2.1	2	AF2.3		MR2.3	2	NS1.2		MR1.2	1	NS2.3		MR1.2
39	1	AF1.3		MR2.1	1	AF1.3		MR1.2	2	AF1.4		MR2.5	1	NS2.3		MR1.3
40	2	AF2.3	NS2.3	MR2.1	2	AF2.3		MR2.3	2	NS1.2		MR2.4	1	AF2.3		MR2.1
41	1	AF1.1	NS2.3	MR2.7	1	AF3.1		MR2.3	1	AF1.1		MR1.2	1	AF1.1		MR2.7
42																
43																
44	1	MG1.1		MR2.1	1	AF3.2		MR2.5	2	MG1.2		MR3.2	1	MG1.2	MG1.1	MR2.4
45	1	MG2.2		MR2.1	1	MG2.2		MR2.7	1	MG2.2		MR2.3	1	MG2.2		MR2.3
46	1	MG2.1		MR2.4	1	MG1.1		MR1.1	1	MG2.1		MR1.2	1	MG2.1		MR1.1
47	1	MG1.1		MR2.1	1	AF3.1		MR2.4	1	NS1.2		MR1.2	1	AF3.1		MR2.4

**Grade 6 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	R1P	DOK R2	R2P	R2S	R2P	DOK R3	R3P	R3S	R3P	DOK R4	R4P	R4S	R4P
48	1	AF2.3		MR2.4	1	MG2.3		MR2.4	1	MG2.3		MR1.2	1	MG2.3		MR1.1
49	1	MG2.2		MR2.3	1	MG2.2		MR2.4	2	MG2.2		MR2.3	1	MG2.2		MR1.1
50	1	MG1.2		MR2.7	2	MG1.2		MR2.1	3	MG1.2		MR2.6	2	AF3.1		MR3.1
51	2	MG2.2		MR2.1	1	MG2.2		MR3.1	1	MG2.2		MR2.6	1	NS2.2		MR3.2
52																
53																
54																
55	2	S1.1	N/A	MR2.3	1	S1.1		MR1.1	2	S1.1		MR2.4	1	S1.1		MR2.4
56	2	S3.3		MR2.7	1	S3.1		MR1.1	2	S3.3		MR2.4	1	S3.1		MR1.2
57	2	S3.3		MR2.1	1	S3.1		MR1.1	1	S3.5		MR2.4	2	S3.5		MR3.3
58	1	S1.1		MR2.1	1	S1.1		MR1.1	2	S1.1		MR1.1	1	S1.1		MR2.5
59	1	N/A		MR2.1	1	S2.5		MR1.1	2	S2.5		MR2.4	2	S1.1		MR2.5
60	1	S3.5		MR2.5	1	S3.5		MR1.2	1	S3.5		MR1.2	2	S3.5		MR2.2
61	2	S3.3	S3.1	MR2.1	1	S3.3		MR1.1	2	S3.3		MR2.1	1	S3.3		MR3.3
62	1	S1.1		MR2.7	1	S1.1		MR2.5	2	S1.1		MR2.4	1	S1.1		MR2.4
63	1	S3.1		MR2.4	2	S2.5		MR2.4	2	S2.5		MR2.1	2	S1.1		MR2.4

**Grade 6 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	R5P	DOK R6	R6P	R6S	R6P	DOK R7	R7P	R7S	R7P	DOK R8	R8P	R8S	R8P
1	1	NS2.4		MR1.1	1	NS2.4		MR1.1	1	NS2.4		MR1.1	1	NS2.4		MR1.1
2	1	NS1.2		MR1.1	1	NS2.3		MR1.2	2	NS1.3		MR1.1	1	NS1.3		MR2.1
3	1	NS1.4		MR1.1	1	NS1.4		MR2.2	1	NS1.4		MR1.1	1	NS1.4		MR2.2
4	1	NS2.2		MR1.1	1	NS2.2		MR2.2	1	NS2.2		MR1.1	1	NS2.2		MR2.2
5	1	NS2.3		MR1.1	1	NS2.3		MR2.2	1	NS2.3		MR1.1	2	NS2.3		MR2.2
6	1	NS2.1		MR1.1	1	NS2.3		MR2.3	2	NS2.1		MR2.7	1	NS2.3		MR2.4
7	1	NS1.3		MR1.1	2	NS1.3		MR2.2	2	NS1.3		MR1.1	1	NS1.3		MR2.2
8	1	NS2.3		MR1.1	1	NS2.1		MR2.7	1	NS2.3	AF1.4	MR1.1	1	NS2.1		MR2.7
9	1	NS2.1		MR1.1	1	NS2.3		MR1.2	2	NS2.1		MR1.1	2	NS2.3		MR1.2
10	1	NS1.4		MR1.1	1	NS1.4		MR2.2	1	NS1.4		MR1.1	1	NS1.4		MR2.2
11	1	NS1.3		MR1.1	1	NS1.4		MR2.6	2	NS1.4		MR2.2	1	NS1.4		MR2.2
12																
13																
14	1	NS1.1		MR1.1	1	NS2.1		MR2.1	1	NS1.1		MR2.1	1	NS1.1		MR2.1
15	1	NS1.3		MR1.1	2	NS1.3		MR2.1	2	NS1.3		MR1.1	2	NS1.3		MR1.1
16	1	NS1.4		MR1.1	1	NS1.4		MR2.1	1	NS1.4		MR1.1	1	NS1.4		MR2.2
17	1	NS1.3		MR1.1	1	NS1.1		MR2.2	2	NS2.4		MR1.2	1	NS1.1		MR2.7
18	1	NS2.3		MR1.1	1	NS1.1		MR2.2	2	NS2.3		MR1.1	1	NS2.3		MR2.7
19	1	NS1.1		MR1.1	1	NS1.1		MR2.1	1	NS1.1		MR1.1	1	NS1.1		MR2.7
20	1	NS1.4		MR1.1	2	NS1.4		MR2.2	2	NS1.4		MR1.1	2	NS1.4		MR2.2
21	1	NS2.3		MR1.1	1	AF1.4		MR2.2	1	NS2.3	AF1.4	MR1.1	1	AF1.3		MR2.7
22	1	NS1.2		MR1.1	1	NS1.2		MR2.2	2	NS1.2		MR1.1	1	NS1.3		MR2.2
23	1	NS2.3		MR1.1	1	NS2.3		MR2.2	2	NS2.3		MR1.1	1	NS1.1		MR2.2

**Grade 6 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	R5P	DOK R6	R6P	R6S	R6P	DOK R7	R7P	R7S	R7P	DOK R8	R8P	R8S	R8P
24																
25																
26	1	AF1.1		MR1.1	1	AF1.1		MR2.2	1	AF1.1		MR1.1	1	AF1.1		MR2.7
27	1	AF2.3		MR1.1	1	NS1.2		MR2.2	2	AF1.2	NS1.3	MR1.1	1	NS1.2		MR2.7
28	2	AF3.1		MR1.1	1	MG1.2		MR2.2	1	AF3.1		MR2.4	1	MG1.2		MR2.2
29	1	AF1.1		MR1.1	2	AF1.2		MR2.2	2	AF1.1		MR1.1	1	AF1.1		MR2.7
30	1	NS2.3		MR1.1	1	NS2.3		MR2.2	1	AF1.4		MR1.1	1	NS2.3		MR2.7
31	1	AF2.1		MR1.1	1	AF2.1		MR2.2	2	AF2.1		MR2.1	1	MG1.2		MR2.1
32	1	AF1.1		MR1.1	1	AF1.1		MR2.2	1	AF1.1		MR1.1	1	AF1.1		MR2.7
33	1	AF2.3		MR1.1	2	AF2.3		MR2.2	2	AF2.3		MR1.1	2	AF2.3		MR2.7
34	1	AF1.2		MR1.1	2	AF1.2		MR2.2	2	AF1.2		MR2.4	2	AF1.2		MR1.3
35	1	AF2.3		MR1.1	2	AF2.1		MR2.2	2	AF2.3		MR1.1	2	AF2.3		MR2.2
36	1	AF1.2		MR1.1	1	AF1.1		MR2.2	2	AF1.1		MR1.2	1	AF1.1		MR2.2
37	1	AF3.2		MR1.1	1	AF1.1		MR2.2	2	AF3.1		MR2.5	1	AF1.1		MR2.2
38	1	AF2.3		MR1.1	2	AF1.2		MR2.2	2	AF2.3		MR1.1	2	AF1.2		MR2.6
39	1	AF1.3		MR1.1	1	AF1.4		MR2.2	2	AF1.4		MR1.1	1	AF1.4		MR2.2
40	1	AF2.3		MR1.1	2	AF2.3		MR2.2	2	AF2.2		MR1.1	1	AF2.3		MR2.2
41	1	AF1.1		MR1.1	1	AF1.1		MR2.2	1	AF1.1		MR1.1	1	AF1.1		MR2.7
42																
43																
44	1	MG1.2		MR1.1	2	MG1.2		MR1.3	2	MG1.1	MG1.2	MR1.1	2	MG1.2		MR2.3
45	1	MG2.2		MR1.1	1	MG2.2		MR1.3	1	NS2.2		MR1.1	1	MG2.2		MR2.7
46	1	MG2.1		MR1.1	2	MG2.2		MR1.3	1	MG2.1		MR1.1	1	MG2.2		MR1.3
47	1	MG1.1		MR1.1	1	MG1.2		MR1.3	1	MG1.1		MR2.5	2	MG1.2		MR2.3

**Grade 6 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	R5P	DOK R6	R6P	R6S	R6P	DOK R7	R7P	R7S	R7P	DOK R8	R8P	R8S	R8P
48	1	MG2.3		MR1.1	2	MG2.3		MR1.3	1	MG2.3		MR1.1	2	MG2.3		MR2.7
49	1	MG2.2		MR1.1	1	MG2.2		MR2.2	2	MG2.2		MR1.1	1	MG2.2		MR2.7
50	1	MG1.1		MR1.1	1	MG1.2		MR2.2	2	MG1.1	MG1.2	MR2.1	2	MG1.2		MR2.1
51	1	MG2.2		MR1.1	1	MG2.2		MR2.2	1	MG2.2		MR1.1	1	MG2.2		MR2.7
52																
53																
54																
55	1	S1.1		MR1.1	2	S1.1		MR2.2	1	S1.1		MR1.1	2	S1.1		MR2.2
56	1	S3.3		MR1.1	2	S3.1		MR2.2	2	S3.3		MR1.1	2	S3.1		MR2.2
57	1	S3.1		MR1.1	2	S3.1		MR2.2	2	S3.1		MR1.1	2	S3.1		MR2.2
58	1	S1.1		MR1.1	1	S3.1		MR2.2	1	S1.1		MR1.1	1	S1.1		MR2.2
59	1	S2.5		MR1.1	2	S2.5		MR2.2	2	S2.5		MR1.1	1	S1.1		MR2.2
60	1	S3.5		MR1.1	2	S3.5		MR2.2	1	S3.5		MR1.1	2	S3.5		MR1.1
61	1	S3.3		MR1.1	2	S3.5		MR2.2	2	S3.3		MR1.1	2	S3.1		MR2.2
62	1	S1.1		MR1.1	2	NS2.3		MR2.2	1	S1.1		MR1.1	2	S1.1		MR2.2
63	1	S2.5		MR1.1	2	MG1.2		MR2.2	3	S2.5		MR1.2	2	NS1.2		MR2.1

**Table E17:  
Grade 7 Mathematics**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
1		NS2.1	NS2.3	MR2.8	1	NS2.1		MR1.1	2	NS2.3		MR1.3	1	NS2.1		MR1.2
2	1	NS1.2	NS1.3	MR2.8	1	NS1.3		MR1.1	1	NS1.3		MR1.2	1	NS1.2	NS1.3	MR2.2
3	1	NS1.2		MR2.8	1	NS1.2		MR1.1	2	NS1.2		MR1.2	1	NS1.2		MR1.3
4	2	NS1.4		MR2.6	1	NS1.5		MR1.1	2	NS1.4		MR1.1	1	NS1.4		MR1.2
5	1	NS2.2		MR2.8	2	NS2.2		MR1.3	3	NS1.2		MR2.4	2	NS2.2	NS1.2	MR3.2
6	2	NS1.6	NS1.3	MR3.1	2	NS1.6		MR1.1	2	NS1.6		MR2.5	2	NS1.7	NS1.6	MR2.1
7	2	NS1.7		MR2.6	2	NS1.7		MR1.1	3	AF1.1		MR2.6	2	AF1.1		MR1.1
8	1	NS1.4		MR2.6	1	NS1.4		MR1.1	1	NS1.5		MR1.1	1	NS1.4		MR3.3
9	2	NS1.7	NS1.3	MR3.1	2	NS1.7		MR2.2	2	NS1.7		MR3.2	2	NS1.7		MR3.2
10	1	NS2.1	NS2.3	MR2.8	1	NS2.1		MR1.1	1	NS2.1		MR1.2	1	NS2.3	AF2.1	MR2.2
11	2	NS1.7	NS1.3	MR3.1	2	NS1.7		MR2.2	3	NS1.7		MR3.3	2	NS1.6	NS1.7	MR2.7
12																
13																
14	1	NS1.1		MR2.6	1	NS1.1		MR1.1	2	NS2.1		MR1.2	1	NS1.1		MR2.6
15	2	NS2.3	NS2.1	MR2.8	1	NS2.3		MR1.1	2	NS2.3		MR2.4	1	NS2.3		MR2.8
16	2	NS2.3		MR2.8	1	NS2.3		MR1.1	1	NS2.3		MR1.1	1	NS2.3	NS2.1	MR2.8
17	2	NS1.2		MR3.1	2	NS1.7		MR2.2	2	NS1.7		MR1.2	2	NS1.2		MR1.1
18	2	NS1.7	NS1.2	MR3.1	2	NS1.7		MR2.2	2	NS1.7		MR1.2	2	NS1.7	NS1.2	MR3.3
19	2	NS2.4	NS1.2	MR2.8	1	NS2.4		MR2.2	2	NS2.4		MR2.1	2	NS1.5	NS2.4	MR1.3
20	1	NS2.5		MR2.8	1	NS2.5		MR1.1	1	NS2.5		MR1.2	1	NS2.5		MR3.3
21																
22																
23	2	AF1.1		MR2.6	2	AF1.1		MR1.3	3	AF1.1		MR3.2	2	AF1.1		MR1.1

**Grade 7 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
24	1	AF4.1		MR2.8	1	AF4.1		MR1.3	1	NS1.3		MR1.2	2	AF4.1		MR3.2
25	1	AF2.2	NS2.1	MR2.8	2	AF2.2		MR1.3	1	NS2.3		MR3.2	1	NS2.3	NS2.1	MR1.3
26	1	AF1.5	MG2.3	MR2.6	2	AF3.1		MR2.5	2	AF3.1		MR1.3	2	AF3.1		
27	1	AF3.3		MR2.6	1	AF3.3		MR2.6	1	AF3.3		MR1.2	2	AF3.3		MR2.5
28	1	AF1.3		MR2.6	2	AF1.3		MR1.1	1	AF1.3		MR2.6	2	AF1.3		MR1.3
29	2	S1.2		MR2.5	1	AF1.5		MR2.2	3	AF3.4		MR3.3	2	MG1.2	MG2.4	MR2.3
30	2	AF3.4		MR2.3	1	AF1.5		MR2.8	3	NS1.5		MR3.2	2	AF1.2	AF1.5	MR2.8
31	2	AF3.3		MR2.5	2	AF3.3		MR1.1	1	AF3.3		MR2.3	2	AF3.3		MR2.5
32	1	AF1.3		MR2.2	2	AF1.2		MR1.3	1	AF1.3	NS1.4	MR1.2	2	AF1.2		MR3.1
33	2	AF1.4		MR2.5	2	AF3.4		MR2.2	1	AF1.5	S1.1	MR2.2	2	MG1.2		MR2.5
34	2	AF4.1		MR2.6	1	AF1.1		MR1.3	3	AF1.1		MR3.3	2	AF4.1		MR3.3
35	1	AF1.2		MR2.8	2	AF1.2		MR1.3	2	AF1.2	NS2.3	MR2.2	2	AF1.2		MR1.3
36	1	NS2.3		MR2.6	1	AF2.1		MR1.1	1	AF1.1		MR1.2	1	AF1.3		MR1.3
37	1	AF1.3		MR2.6	1	AF4.1		MR1.3	2	AF1.2		MR1.2	2	AF4.1		MR3.2
38	2	AF4.2		MR2.8	2	AF4.2		MR2.2	2	AF1.3		MR3.1	2	AF4.2		MR3.2
39	1	AF1.4		MR2.6	1	AF4.1		MR1.3	3	NS1.4		MR3.3	1	AF1.4		
40	2	AF4.2	NS1.2	MR2.8	2	AF4.2		MR2.2	3	AF4.2		MR3.2	2	MG1.3	AF4.1	MR3.1
41	2	AF4.1		MR2.8	2	AF4.2		MR2.2	3	NS1.3		MR2.5	2	AF4.1		MR2.2
42	2	AF4.2	NS1.2	MR2.8	2	AF4.2		MR2.2	1	AF4.2		MR2.2	2	AF4.2		MR3.2
43																
44																
45	1	MG1.1	MG1.3	MR2.6	1	MG1.1		MR2.8	2	MG1.1		MR1.2	1	MG1.1		MR1.1
46	2	MG3.2	MG2.1	MR2.8	2	MG3.2		MR2.2	2	MG2.1	MG1.2	MR2.5	1	MG3.2	MG2.1	MR2.1
47	1	MG3.4		MR1.2	1	MG3.4		MR1.1	1	MG3.4		MR2.4	1	NS2.5		MR2.4

**Grade 7 Mathematics (Continued)**

Item	DOK R1	R1P	R1S	MR1	DOK R2	R2P	R2S	MR2	DOK R3	R3P	R3S	MR3	DOK R4	R4P	R4S	MR4
48	2	MG1.2		MR2.5	2	MG2.4		MR2.8	3	MG2.4	MG1.2	MR3.2	2	MG1.2		MR2.7
49	1	MG2.3	NS1.2	MR2.8	1	MG2.1		MR1.1	2	MG2.1		MR2.5	2	MG2.3		MR2.3
50	1	MG2.4		MR2.6	2	MG2.3		MR2.2	2	NS2.3		MR2.8	2	NS2.3		MR2.1
51	2	AF2.2		MR1.3	2	MG2.2		MR1.3	2	MG2.1		MR2.2	2	MG2.2		MR3.3
52	2	MG1.1	AF4.2	MR2.8	1	MG1.3		MR2.2	2	MG1.3		MR2.2	1	AF4.2		MR3.1
53	1	MG3.3		MR2.8	2	MG3.3		MR1.1	2	MG3.3		MR1.2	2	MG3.3		MR3.1
54	1	MG2.1		MR2.8	1	MG2.1		MR2.6	2	MG2.1		MR2.5	1	MG2.1		MR3.3
55	1	MG3.4		MR2.6	2	MG3.4		MR2.4	1	MG3.4		MR1.2	2	MG3.4		MR3.3
56																
57																
58																
59	2	S1.2		MR3.1	2	S1.2		MR2.4	2	S1.2		MR1.1	2	S1.2	S1.1	MR3.2
60	2	S1.1		MR2.5	1	S1.1		MR1.1	2	S1.1		MR3.3	2	S1.1		MR3.2
61	2	S1.3		MR2.6	1	S1.3		MR1.1	2	S1.3		MR2.5	2	S1.1		N/A
62	1	S1.1		MR2.5	1	S1.1		MR1.1	2	S1.1		MR1.2	2	S1.1		N/A
63	2	S1.2		MR2.6	1	S1.1		MR1.1	2	S1.2		MR1.1	2	S1.3		MR3.1

**Grade 7 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
1	1	NS1.2		MR1.1	1	NS2.1		MR2.2	1	NS2.1		MR1.1	1	NS2.1		MR2.8
2	1	NS1.3		MR1.1	1	NS1.2		MR2.2	1	NS1.3		MR1.3	1	NS1.3		MR2.8
3	1	NS1.2		MR1.1	1	NS1.2		MR2.2	1	NS1.2		MR1.1	1	NS1.2		MR2.2
4	1	NS1.5		MR1.1	1	NS1.4		MR2.2	2	NS1.4		MR1.2	1	NS1.4		MR2.2
5	1	NS2.2		MR1.1	1	NS1.2		MR2.2	2	NS1.2		MR2.4	1	NS1.2		MR2.2
6	1	NS1.6		MR1.1	1	NS1.6		MR2.2	1	NS1.7		MR2.8	1	NS1.6		MR2.1
7	1	NS1.7		MR1.1	2	NS1.6		MR2.2	2	NS1.7		MR2.5	2	NS1.7		MR2.2
8	1	NS1.4		MR1.1	1	NS1.4		MR2.2	1	NS1.4		MR2.2	1	NS1.5		MR2.2
9	1	NS1.7		MR1.1	2	NS1.6		MR2.2	1	NS1.7		MR1.1	1	NS1.7		MR2.2
10	1	NS2.1		MR1.1	1	NS2.1		MR2.2	1	NS2.3		MR1.3	2	NS2.1		MR2.2
11	1	NS1.7		MR1.1	2	NS1.6		MR2.2	3	NS1.7		MR3.3	2	NS1.6		MR2.2
12																
13																
14	1	NS1.1		MR1.1	1	NS1.1		MR2.2	1	NS1.1		MR2.4	1	NS1.1		MR2.2
15	1	NS2.3		MR1.1	1	NS2.1		MR2.2	1	NS2.3		MR1.3	1	NS2.1		MR2.2
16	1	NS1.2		MR1.1	1	NS2.1		MR2.2	1	NS2.3		MR1.1	1	NS2.1		MR2.2
17	1	NS1.2		MR1.1	2	NS1.7		MR2.2	1	NS1.2		MR2.1	1	NS1.7		MR2.2
18	1	NS1.7		MR1.1	2	NS1.6		MR2.2	1	NS1.7		MR2.4	2	NS1.6		MR2.2
19	1	NS2.4		MR1.1	2	AF2.2		MR2.2	1	NS2.4		MR2.4	1	NS2.4		MR2.2
20	1	NS2.5		MR1.1	1	NS2.5		MR2.2	1	NS2.5		MR1.1	1	NS2.5		MR2.2
21																
22																
23	1	AF1.1		MR1.1	2	AF1.1		MR2.2	2	AF1.1		MR2.5	2	AF1.1		MR2.2

**Grade 7 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
24	1	AF4.1		MR1.1	1	AF1.1		MR2.2	1	AF1.3		MR2.6	2	AF1.5		MR2.2
25	1	AF2.2		MR1.1	1	NS2.3		MR2.2	1	AF2.2		MR2.2	1	NS2.3		MR2.2
26	1	AF3.1		MR1.1	1	AF3.4		MR2.2	2	AF3.1		MR2.8	2	AF3.1		MR2.2
27	1	AF3.3		MR1.1	2	AF3.3		MR2.2	1	AF3.4		MR3.1	2	AF3.3		MR2.3
28	1	AF1.3		MR1.1	1	AF1.2		MR2.2	1	AF1.3		MR3.1	1	AF1.2		MR2.2
29	1	AF3.4		MR1.1	2	AF1.5		MR2.2	2	AF1.5		MR2.5	1	AF1.5		MR2.2
30	1	AF3.4		MR1.1	2	AF1.5		MR2.2	2	AF1.5		MR2.5	2	AF1.5		MR2.2
31	1	AF3.3		MR1.1	2	AF1.5		MR2.2	1	AF3.3		MR2.6	2	AF1.5		MR2.2
32	1	AF1.2		MR1.1	1	AF1.2		MR2.2	1	AF1.2		MR2.2	1	AF1.2		MR2.2
33	1	AF1.5		MR1.1	2	AF1.5		MR2.2	2	AF1.5		MR3.1	2	AF1.5		MR2.2
34	1	AF4.1		MR1.1	2	AF4.1		MR2.2	2	AF4.1		MR2.8	2	AF4.1		MR2.2
35	1	AF1.2		MR1.1	1	AF1.3		MR2.2	1	AF1.2		MR2.8	1	AF1.2		MR2.2
36	1	AF2.1		MR1.1	1	AF1.3		MR2.2	1	AF1.1		MR3.3	1	NS2.3		MR2.2
37	1	AF1.3		MR1.1	1	AF1.2		MR2.2	2	AF1.3		MR2.4	1	AF1.3		MR2.2
38	1	AF4.2		MR1.1	2	AF1.1		MR2.2	2	AF4.2		MR2.6	2	AF4.2		MR2.2
39	1	AF1.4		MR1.1	1	AF1.1		MR2.2	1	AF1.4		MR1.1	1	AF4.1		MR2.2
40	1	AF4.2		MR1.1	2	AF1.1		MR2.2	2	AF4.1		MR2.8	2	AF1.1		MR2.2
41	1	AF4.1		MR1.1	1	AF1.1		MR2.2	1	AF4.1		MR2.6	2	AF4.1		MR2.2
42	1	AF4.2		MR1.1	1	AF1.1		MR2.2	2	AF4.2		MR2.2	1	AF1.1		MR2.2
43																
44																
45	1	MG1.1		MR1.1	1	MG1.1		MR2.2	2	MG1.1		MR3.2	1	MG1.1		MR2.2
46	1	MG3.2		MR1.1	1	MG2.1		MR2.2	1	MG2.1		MR2.5	1	MG2.1		MR2.2
47	1	MG3.4		MR1.1	1	MG2.1		MR2.2	1	MG3.4		MR3.3	1	MG1.2		MR2.2

**Grade 7 Mathematics (Continued)**

Item	DOK R5	R5P	R5S	MR5	DOK R6	R6P	R6S	MR6	DOK R7	R7P	R7S	MR7	DOK R8	R8P	R8S	MR8
48	1	MG1.2		MR1.1	1	MG1.2		MR2.2	2	MG2.4	MG1.2	MR2.3	1	MG1.2		MR2.2
49	1	MG2.3		MR1.1	2	MG2.2		MR2.2	1	MG2.3		MR2.8	2	MG2.1	MG2.3	MR2.2
50	1	MG2.4		MR1.1	2	MG2.3		MR2.2	3	MG2.3		MR3.3	2	MG2.1	MG2.3	MR2.2
51	1	MG2.2		MR1.1	2	MG2.1		MR2.2	2	MG2.2		MR2.2	2	MG2.1		MR2.2
52	1	MG1.3		MR1.1	2	MG1.3		MR2.2	1	MG1.1		MR2.8	1	MG1.3		MR2.2
53	1	MG3.3		MR1.1	2	MG3.2		MR2.2	1	MG3.3		MR3.1	1	MG3.3		MR2.2
54	1	MG2.1		MR1.1	2	MG2.1		MR2.2	1	MG1.3		MR2.8	2	MG2.1		MR2.2
55	1	MG3.4		MR1.1	1	MG3.2		MR2.2	1	MG3.4		MR1.1	1	MG1.2		MR2.2
56																
57																
58																
59	1	S1.2		MR1.1	2	S1.2		MR2.2	2	S1.2		MR2.4	2	S1.2		MR2.2
60	1	S1.1		MR1.1	2	S1.2		MR2.2	2	S1.1		MR2.6	2	S1.1		MR2.2
61	1	S1.3		MR1.1	1	S1.1		MR2.2	2	S1.3		MR2.4	1	S1.3		MR2.2
62	1	S1.1		MR1.1	2	S1.1		MR2.2	1	S1.1		MR2.5	2	S1.1		MR2.2
63	1	S1.2		MR1.1	2	S1.2		MR2.2	2	S1.2		MR2.5	2	S1.2		MR2.2

**Table E18:  
Algebra I**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	2.0		1	2.0		1	2.0		1	2.0	
2	1	5.0		2	5.0		2	3.0	5.0	1	2.0	
3	2	24.2		1	24.2		1	24.2		1	24.2	
4	2	5.0		1	4.0		2	4.0		1	4.0	
5	1	5.0		1	5.0		2	3.0		1	3.0	
6	1	2.0		1	2.0		1	2.0		1	2.0	
7	3	5.0		2	5.0		2	5.0		2	5.0	
8	1	3.0		2	3.0		2	3.0		1	3.0	
9	2	5.0		2	5.0		2	4.0		2	5.0	
10	1	5.0		1	5.0		2	5.0		1	3.0	
11	1	11.0		1	2.0		1	2.0		1	2.0	
12	2	5.0		1	4.0		2	4.0		1	4.0	
13	1	5.0		1	5.0		2	5.0		2	5.0	
14	1	2.0		1	2.0		1	2.0		1	2.0	
15	2	5.0		3	5.0		2	5.0		2	5.0	
16												
17												
18												
19	2	6.0		2	6.0		2	7.0		2	6.0	
20	2	6.0	7.0	3	7.0		2	7.0		2	7.0	
21	3	9.0		1	9.0		2	9.0		2	9.0	
22	2	7.0		3			2	7.0		2	6.0	
23	2	6.0	7.0	2	7.0		2	6.0	7.0	2	7.0	

**Algebra I (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24	2	6.0	7.0	2	6.0		2	7.0		2	7.0	
25	3	9.0		1	9.0		2	9.0		2	9.0	
26	2	8.0		1	8.0		1	8.0		2	8.0	
27	3	9.0		2	9.0		2	9.0		2	9.0	
28	2	6.0	7.0	2	7.0		2	6.0	7.0	2	8.0	
29	3	9.0		2	9.0		2	9.0		2	9.0	
30	2	6.0		2	6.0		2	6.0	7.0	2	7.0	
31	2	7.0		1	7.0		2	7.0		2	7.0	
32	3	9.0		2	9.0		1	9.0		2	7.0	
33												
34												
35												
36	2	11.0		2	11.0		1	11.0		2	11.0	
37	2	20.0		1	20.0		2	19.0		3	14.0	
38	2	21.0		2	21.0		1	21.0		3	22.0	
39	2	11.0		2	11.0		1	11.0		2	11.0	
40	1	14.0		1	20.0	14.0	2	14.0		2	14.0	
41	1	19.0		1	19.0		1	19.0		1	19.0	
42	1	4.0		1	10.0		1	10.0		1	2.0	
43	3	10.0		2	14.0	20.0	2	11.0		2	14.0	
44	2	20.0		2	20.0		2	20.0		3	20.0	
45	1	15.0		1	23.0		2	10.0		2	23.0	
46	2	20.0		1	20.0		2	14.0		2	20.0	
47	3	19.0	14.0	2	19.0		1	19.0		2	14.0	

**Algebra I (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
48	3	22.0	21.0	1	21.0		1	21.0		2	20.0	
49	1	N/A		1	10.0		1	10.0		2	22.0	
50	3	21.0		1	21.0		1	22.0		3	22.0	
51	1	22.0		3	22.0		1	21.0		2	11.0	
52	1	4.0		2	10.0		2	10.0		2	10.0	
53	1	14.0	19.0	1	19.0		2	19.0		2	19.0	
54	1	2.0		2	10.0		2	10.0		1	2.0	
55												
56												
57	2	10.0	12.0	3	12.0	10.0	2	12.0		2	12.0	
58	2	10.0	12.0	3	12.0	10.0	1	12.0		2	12.0	
59	2	15.0		2	15.0		3	15.0		2	12.0	
60	3	10.0	12.0	3	13.0		2	13.0		2	15.0	
61	2	18.0		1	18.0		1	17.0		2	18.0	
62	1	15.0		1	15.0		2	15.0		2	15.0	
63												
64												
65	3	12.0	10.0	3	13.0		2	13.0	12.0	2	12.0	
66	2	12.0		2	12.0		2	12.0		2	12.0	
67	2	10.0		1	13.0		2	12.0		2	10.0	
68	1	17.0		1	17.0		1	17.0		2	18.0	
69	2	10.0		1	13.0		2	12.0		2	10.0	
70	2	15.0		3	15.0		2	15.0		2	15.0	

**Algebra I (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	2.0		1	2.0		1	2.0		1	2.0	
2	2	5.0		2	5.0		1	4.0		2	5.0	
3	1	24.2		1	24.2		2	24.2		1	24.2	
4	1	4.0		1	4.0		1	4.0		1	4.0	
5	2	5.0		2	5.0		2	5.0		2	5.0	
6	1	2.0		1	2.0		1	2.0		1	2.0	
7	2	5.0		2	5.0		2	5.0		2	5.0	
8	2	3.0		2	3.0		1	3.0		2	3.0	
9	2	4.0		2	4.0	5.0	2	4.0		2	4.0	
10	2	5.0		2	5.0		1	5.0		2	5.0	
11	1	2.0		1	2.0		1	2.0		1	2.0	
12	2	4.0		2	4.0		2	4.0		2	4.0	
13	2	5.0		2	5.0		1	5.0		2	5.0	
14	1	2.0		1	2.0		1	2.0		1	2.0	
15	3	5.0		3	5.0		3	5.0		3	5.0	
16												
17												
18												
19	2	6.0		2	6.0		2	6.0		2	6.0	
20	1	7.0		1	7.0		2	7.0		2	7.0	
21	2	9.0		2	9.0		2	9.0	10.0	2	9.0	
22	1	6.0		1	6.0		2	6.0	7.0	1	6.0	
23	2	6.0	7.0	2	7.0		3	7.0		1	7.0	

**Algebra I (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24	2	6.0		2	6.0		2	6.0		2	6.0	
25	3	9.0		2	9.0		2	10.0	9.0	2	9.0	
26	1	8.0		1	8.0		1	8.0		1	8.0	
27	2	9.0		2	9.0		2	10.0	9.0	2	9.0	
28	2	7.0		3	7.0		2	7.0		2	7.0	
29	2	9.0		2	9.0		2	10.0	9.0	2	9.0	
30	1	6.0		1	6.0		1	6.0		2	6.0	
31	1	7.0		1	7.0		2	7.0		1	7.0	
32	1	9.0		1	9.0		1	9.0		1	9.0	
33												
34												
35												
36	1	11.0		1	11.0		1	11.0		2	11.0	
37	2	20.0		2	20.0		3	14.0		2	20.0	
38	3	22.0		2	21.0		1	21.0		1	21.0	
39	1	11.0		1	11.0		1	11.0		2	11.0	
40	2	14.0		2	14.0	20.0	2	14.0	11.0	2	14.0	
41	1	19.0		1	19.0		1	19.0		1	19.0	
42	1	10.0		1	10.0	11.0	1	4.0		1	10.0	
43	2	20.0		2	14.0		2	11.0	10.0	2	14.0	
44	2	20.0		2	20.0		2	20.0		2	20.0	
45	2	2.0		2	10.0		2	2.0		2	2.0	14.0
46	2	20.0		2	20.0		2	20.0		2	20.0	
47	1	11.0		2	14.0		3	19.0		2	14.0	

**Algebra I (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	1	20.0		1	21.0		1	21.0		1	21.0	
49	1	10.0		1	10.0		1	10.0	4.0	2	10.0	
50	1	21.0		1	21.0		2	11.0		1	21.0	
51	3	22.0		3	22.0		2	22.0		2	22.0	
52	2	10.0		2	10.0		2	10.0	4.0	2	10.0	
53	1	19.0		1	19.0		1	19.0		1	19.0	
54	1	10.0		1	10.0		1	12.0		1	10.0	
55												
56												
57	2	12.0		2	12.0		2	12.0		2	12.0	
58	2	12.0		2	12.0		2	12.0		2	12.0	
59	3	15.0		1	15.0		1	15.0		2	15.0	
60	3	13.0		1	13.0		2	13.0	12.0	2	13.0	
61	2	18.0		1	18.0		1	17.0	18.0	1	18.0	
62	2	15.0		1	15.0		1	15.0		1	15.0	
63												
64												
65	2	10.0		1	13.0		1	12.0		1	13.0	
66	2	11.0		2	12.0		1	13.0	12.0	2	12.0	
67	2	13.0		1	13.0		1	13.0		1	13.0	
68	3	18.0		1	17.0		1	17.0		1	17.0	
69	2	13.0		1	13.0		1	13.0		1	13.0	
70	3	15.0		3	15.0		3	15.0		3	15.0	

**Table E19:  
Geometry**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
1	1	21.0	1.0	1			1	7.0		1	21.0	
2	3	4.0	5.0	2	4.0	2.0	2	4.0	1.0	2	5.0	
3	3	13.0	1.0	3	2.0		1	13.0	2.0	2	7.0	
4	1	1.0		1			1	1.0		1	1.0	
5	1	1.0		1	1.0		1	1.0		2	12.0	
6	1	1.0	12.0	1	12.0		1	1.0		1	4.0	
7	3	5.0		2	5.0		1	5.0		2	7.0	
8	2	7.0	13.0	2	7.0		1	7.0		2	5.0	
9	3	4.0	5.0	2	5.0	2.0	1	4.0	2.0	2	12.0	
10	3	8.0		2	7.0		1	7.0	12.0	2	5.0	
11	3	5.0	4.0	3	2.0	5.0	1	5.0	2.0	2	4.0	
12	3	2.0		3	2.0	5.0	1	7.0	5.0	2	7.0	
13	3	7.0	2.0	3	7.0	2.0	1	7.0	13.0	2	7.0	
14	2	4.0	5.0	2	4.0	2.0	2	4.0		2	5.0	
15	2	1.0	3.0	2	7.0		1	1.0		2	1.0	
16	2	14.0		1	6.0		2	10.0		1	1.0	
17	2	5.0	4.0	2	4.0		1	4.0		2	5.0	
18	2	5.0	4.0	1			2	4.0		2	5.0	
19	2	7.0		3	5.0		2	7.0	2.0	2	7.0	
20	1	1.0		2	1.0		1	1.0		1	1.0	
21	2	13.0		2			2	12.0		2	13.0	
22	2	7.0		1	7.0		2	7.0		2	13.0	
23	2	7.0		3	7.0		1	7.0	2.0	2	13.0	

**Geometry (Continued)**

Item	DOK R1	R1P	R1S	DOK R2	R2P	R2S	DOK R3	R3P	R3S	DOK R4	R4P	R4S
24												
25												
26												
27												
28	1	8.0	10.0	2	8.0	10.0	1	1.0		1	8.0	
29	1	8.0		2	8.0		1	1.0		1	8.0	
30	3	11.0		2	11.0	8.0	1	11.0		2	11.0	
31	1	9.0	8.0	2	9.0		2	9.0		2	10.0	
32	1	8.0		2	8.0		2	8.0		2	8.0	
33	2	9.0		1	8.0	9.0	2	9.0		2	9.0	
34	1	10.0		2	8.0	10.0	2	8.0		1	8.0	
35	2	8.0		1	8.0		2	8.0		1	8.0	
36	1	10.0	8.0	2	10.0	8.0	2	10.0		1	8.0	
37	1	9.0		1	10.0	7.0	1	9.0		1	9.0	
38	1	8.0	10.0	1	8.0	10.0	1	8.0		1	8.0	
39												
40												
41												
42	2	12.0	13.0	2	12.0		2	12.0		1	8.0	
43	1	15.0		1	15.0		2	15.0		1	15.0	
44	3	17.0	15.0	1	12.0		1	17.0		2	17.0	
45	1	12.0		1	12.0		2	12.0		2	12.0	
46	1	16.0		1	16.0		1	16.0		2	17.0	
47	1	17.0		1	17.0		2	17.0		2	15.0	

**Geometry (Continued)**

<b>Item</b>	<b>DOK R1</b>	<b>R1P</b>	<b>R1S</b>	<b>DOK R2</b>	<b>R2P</b>	<b>R2S</b>	<b>DOK R3</b>	<b>R3P</b>	<b>R3S</b>	<b>DOK R4</b>	<b>R4P</b>	<b>R4S</b>
48	2	15.0	14.0	2	15.0		2	15.0		1	14.0	
49	3	5.0	4.0	2	2.0	14.0	2	14.0	4.0	2	16.0	
50	1	16.0		2	16.0		1	16.0		2	17.0	
51	1	17.0		2	15.0		2	17.0		2	8.0	
52	2	8.0		2	12.0		2	7.0		2	8.0	
53	2	13.0	12.0	3	13.0		2	12.0		2	12.0	
54	2	12.0	13.0	1	12.0		2	12.0		2	12.0	
55	1	13.0		1	13.0		2	13.0		2	13.0	
56												
57												
58												
59	1	18.0	19.0	1	19.0		1	18.0		1	13.0	
60	2	21.0	18.0	2	21.0		2	21.0		2	21.0	
61	2	22.0		2	22.0		2	22.0		2	22.0	
62	2	18.0	19.0	1	18.0		1	18.0		2	18.0	
63	3	21.0		3	22.0		2	21.0		2	21.0	
64	3	19.0	18.0	2	19.0		1	19.0		2	19.0	
65	1	22.0		2	22.0		1	22.0		1	22.0	
66	3	12.0	7.0	3	21.0		1	21.0		2	21.0	
67	1	22.0		1	22.0		1	22.0		2	22.0	
68	3	19.0	18.0	2	19.0		2	19.0		2	19.0	
69	2	7.0	12.0	3	21.0		1	21.0		2	21.0	
70	1	20.0		1	20.0		2	19.0		2	19.0	

### Geometry (Continued)

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
1	1	21.0		1	21.0		1	21.0		1	21.0	
2	1	5.0		1	5.0		1	5.0		1	5.0	
3	1	13.0	2.0	1	2.0		2	13.0	7.0	1	2.0	
4	2			1	1.0		1	1.0		1	1.0	
5	1	1.0		1	1.0		1	1.0		1	1.0	
6	2	3.0		1	12.0		2	12.0		2	1.0	
7	2	4.0		1	5.0		3	12.0	13.0	2	5.0	1.0
8	2	7.0		1	7.0		2	7.0		2	7.0	1.0
9	1	4.0		1	5.0		1	5.0		1	5.0	
10	2	12.0		2	12.0		2	13.0		2	12.0	
11	2	5.0		2	5.0		3	5.0	4.0	2	5.0	
12	3	2.0		2	2.0		3	2.0		2	5.0	
13	2	7.0		1	2.0		3	2.0		2	7.0	
14	2	5.0		1	5.0		2	4.0	2.0	2	5.0	
15	2	3.0		1	3.0		3	3.0		2	3.0	1.0
16	1	6.0		2	6.0		3	1.0		1	6.0	
17	2	5.0		1	5.0		1	4.0		1	5.0	
18	2	5.0		2	4.0		2	1.0		1	5.0	
19	3	5.0		3	7.0		3	5.0	4.0	2	5.0	7.0
20	1	1.0		1	1.0		1	1.0		1	1.0	
21	1	13.0		2	13.0		3	13.0		2	1.0	
22	2	7.0		2	7.0		2	7.0		2	7.0	
23	2	7.0		1	2.0		3	7.0		2	7.0	

**Geometry (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
24												
25												
26												
27												
28	1	10.0		2	10.0		1	10.0	8.0	1	10.0	8.0
29	1	8.0		1	8.0		1	8.0		1	8.0	
30	2	11.0		2	11.0		2	11.0		2	11.0	
31	1	9.0		2	9.0		2	9.0		2	9.0	8.0
32	1	8.0		2	8.0		1	8.0		1	8.0	
33	1	8.0		2	8.0		1	9.0		1	9.0	8.0
34	1	8.0		2	10.0		1	10.0		1	10.0	8.0
35	1	8.0		2	8.0		1	8.0		1	8.0	
36	1	8.0		2	10.0		1	8.0		1	10.0	8.0
37	1	9.0		1	9.0		1	9.0		1	9.0	8.0
38	1	8.0		1	10.0		1	10.0		1	10.0	8.0
39												
40												
41												
42	2	12.0		2	12.0		2	12.0		2	12.0	
43	2	15.0		2	15.0		2	15.0		1	15.0	
44	2	17.0		2	17.0		1	17.0		2	12.0	
45	1	12.0		2	12.0		1	12.0		1	12.0	
46	1	16.0		1	16.0		1	16.0		1	16.0	
47	1	17.0		1	17.0		1	17.0		1	17.0	

**Geometry (Continued)**

Item	DOK R5	R5P	R5S	DOK R6	R6P	R6S	DOK R7	R7P	R7S	DOK R8	R8P	R8S
48	1	15.0		2	15.0		2	15.0		1	15.0	
49	2	14.0		1	14.0		1	1.0		1	1.0	
50	2	16.0		1	16.0		1	16.0		1	16.0	
51	1	17.0		2	17.0		1	17.0		1	17.0	
52	2	12.0		2	12.0		2	8.0	12.0	2	12.0	
53	2	12.0	13.0	3	13.0		2	13.0		2	12.0	
54	2	12.0		1	12.0		2	13.0		1	12.0	
55	1	13.0		1	13.0		1	13.0	1.0	1	13.0	
56												
57												
58												
59	2	18.0		1	18.0		1	18.0		1	18.0	
60	2	21.0		1	21.0		1	21.0	18.0	1	21.0	
61	1	22.0		2	22.0		1	22.0		2	22.0	
62	2	18.0		1	18.0		1	18.0	19.0	1	18.0	
63	2	21.0		1	21.0		2	21.0		1	21.0	
64	2	19.0		2	19.0		2	19.0		2	19.0	
65	1	22.0		1	22.0		1	22.0		1	22.0	
66	2	21.0		2	21.0		2	21.0		2	21.0	
67	1	22.0		1	22.0		2	22.0		1	22.0	
68	2	19.0		2	19.0		2	19.0		2	19.0	
69	2	20.0		1	21.0		2	21.0		1	21.0	
70	2	20.0		2	20.0		1	20.0		1	20.0	

## **Appendix F**

### **Results of Intraclass Correlation**

## Results of Intraclass Correlation

Reliability can be increased by adding more training to reduce the One-Judge Reliability or by adding more judges to reduce the variability of the mean.

### Number of Judges needed to reach Aspiration Level of Reliability

Aspiration Level	One-Judge Reliability			Number of Judges Needed		
	0.335	0.421	0.399	Mathematics	English Language Arts	Science
0.7	4.6	3.2	3.5	5	4	4
0.8	7.9	5.5	6.0	8	6	7
0.9	17.9	12.4	13.6	18	13	14
0.95	37.7	26.1	28.6	38	27	29

Notes: The minimum number of judges calculation is based on the Spearman Browne Prophecy

formula,  $m = \left\{ \frac{\rho^*}{1 - \rho^*} \middle/ \frac{\rho_L}{1 - \rho_L} \right\} = \frac{\rho^* \langle 1 - \rho_L \rangle}{\rho_L \langle 1 - \rho^* \rangle}$ , where  $\rho^*$  is the reliability aspired to and  $\rho_L$  is the reliability

estimate for a single judge.

The two-way analysis assuming both random items and fixed judges gives a result for the mean correlation identical to Cronbach's Alpha, i.e.,  $\alpha = \frac{\sigma_{Bet}^2 - \sigma_e^2}{\sigma_{Bet}^2}$ . While SPSS allows the user to

select between the random and mixed models, the calculations come out the same with either model. Assuming the judges are fixed would imply these are the only judges that would ever be used so there is no component of variance associated with them. *Random judges* assume the judges used are one of many possible selections of judges; then the variability among judges must be taken into account, which will result in a lower value for the intraclass correlation (or any other measure of reliability.)

For the mixed model (i.e., fixed judges), the intraclass correlation would be calculated identically to Alpha.

$$ICC_{FixedJudges} = \frac{ItemMS - EMS}{ItemMS}$$

For the random model, the correct calculation is:

$$ICC_{RandomJudges} = \frac{ItemMS - EMS}{ItemMS + \frac{\langle JudgeMS - EMS \rangle}{n}}$$

## Calculation Modes

Calculation for two-way model with both questions and judges random:

**English language arts Table F1: Grade 3**

<b>English Language Arts</b>		
	DF	MS
questions	47	1.97
judges	7	1.03
error	329	0.14
<b>Intraclass Correlation</b>		0.92
Cronbach's Alpha		0.93

**Table F2: Grade 4**

<b>English Language Arts</b>		
	DF	MS
questions	47	1.74
judges	7	2.10
error	329	0.21
<b>Intraclass Correlation</b>		0.86
Cronbach's Alpha		0.88

**Table F3: Grade 5**

<b>English Language Arts</b>		
	DF	MS
questions	47	1.88
judges	7	2.36
error	329	0.17
<b>Intraclass Correlation</b>		0.89
Cronbach's Alpha		0.91

**Table F4: Grade 6**

<b>English Language Arts</b>		
	DF	MS
questions	53	2.09
judges	7	1.72
error	371	0.28
<b>Intraclass Correlation</b>		0.86
Cronbach's Alpha		0.87

Calculation Modes (Continued)

**Table F5: Grade 7**

<b>English Language Arts</b>		
	DF	MS
questions	53	3.16
judges	7	2.04
error	371	0.17
<b>Intraclass Correlation</b>		0.94
Cronbach's Alpha		0.95

**Table F6: Grade 8**

<b>English Language Arts</b>		
	DF	MS
questions	53	2.22
judges	7	6.26
error	371	0.26
<b>Intraclass Correlation</b>		0.84
Cronbach's Alpha		0.88

**Table F7: Grade 9**

<b>English Language Arts</b>		
	DF	MS
questions	59	2.21
judges	7	2.33
error	413	0.31
<b>Intraclass Correlation</b>		0.85
Cronbach's Alpha		0.86

**Table F8: Grade 10**

<b>English Language Arts</b>		
	DF	MS
questions	59	1.99
judges	7	1.67
error	413	0.23
<b>Intraclass Correlation</b>		0.88
Cronbach's Alpha		0.89

Calculation Modes (Continued)

**Table F9: Grade 11**

<b>English Language Arts</b>		
	DF	MS
questions	59	1.53
judges	7	2.10
error	413	0.26
<b>Intraclass Correlation</b>		0.81
Cronbach's Alpha		0.83

Science

**Table F10: Grade 5**

<b>Science</b>		
	DF	MS
questions	47	1.05
judges	7	2.97
error	329	0.21
<b>Intraclass Correlation</b>		0.76
Cronbach's Alpha		0.80

**Table F11: Grade 8**

<b>Science</b>		
	DF	MS
questions	53	0.63
judges	7	2.22
error	371	0.16
<b>Intraclass Correlation</b>		0.71
Cronbach's Alpha		0.75

**Table F12: High School**

<b>Science</b>		
	DF	MS
questions	59	1.20
judges	7	0.93
error	413	0.14
<b>Intraclass Correlation</b>		0.87
Cronbach's Alpha		0.88

Calculation Modes (Continued)

Mathematics

Table F13: Grade 3

Mathematics		
	DF	MS
questions	47	0.72
judges	7	1.12
error	329	0.11
<b>Intraclass Correlation</b>		0.82
Cronbach's Alpha		0.85

Table F14: Grade 4

Mathematics		
	DF	MS
questions	47	0.79
judges	7	1.80
error	329	0.13
<b>Intraclass Correlation</b>		0.81
Cronbach's Alpha		0.84

Table F15: Grade 5

Mathematics		
	DF	MS
questions	47	0.52
judges	7	1.04
error	329	0.10
<b>Intraclass Correlation</b>		0.77
Cronbach's Alpha		0.80

Table F16: Grade 6

Mathematics		
	DF	MS
questions	53	0.64
judges	7	2.08
error	371	0.16
<b>Intraclass Correlation</b>		0.72
Cronbach's Alpha		0.75

Calculation Modes (Continued)

**Table F17: Grade 7**

<b>Mathematics</b>		
	DF	MS
questions	53	0.77
judges	7	3.50
error	371	0.18
<b>Intraclass Correlation</b>		0.71
Cronbach's Alpha		0.76

**Table 18: Algebra I**

<b>Algebra I</b>		
	DF	MS
questions	59	1.30
judges	7	0.68
error	413	0.26
<b>Intraclass Correlation</b>		0.79
Cronbach's Alpha		0.80

**Table F19: Geometry**

<b>Geometry</b>		
	DF	MS
questions	59	1.14
judges	7	1.56
error	413	0.27
<b>Intraclass Correlation</b>		0.75
Cronbach's Alpha		0.76

## **Appendix G**

### **Alignment Study Reviewers and Biographies of the National Experts**

## List of Reviewers

### Trainer/Facilitator

Carsten Wilmes

### Bias Expert

Kimberly Fountain

### Data Analyst

Jared Hollermann

### Senior Project Advisor

Patricia McDivitt

### State of California Reviewers

#### English Language Arts Grades 3–5

Vanessa Bryant

Teri Early

Joan Perry

Lisa Shah

#### English Language Arts Grades 6–8

Josie Gibbs

Nikole Johnson

Charlotte Noon

Joshua Weeden

#### English Language Arts Grades 9–11

Jo Bjerke

Beverly Foster

Holly Hollingsworth

Catherine Sherman

#### Mathematics Grades 3–5

Leticia Cardinal-Norris

Jan DeMers

Lori Rayor

Laura Trocha

#### Mathematics Grades 6–7

Miyoko Itokazu

Danny Lulla

Thomas Noriega

Amy Swain

\*Group Leader

### Special Populations Expert

Karen Paavola

### Demographics Expert

Gail Carpenter

### Quality Control Reviewer

H. Gary Cook

### National Experts

#### English Language Arts Grades 3–5

Mary Basch

Rick Gedart

Anne Kirpes

Roxanne Semon\*

#### English Language Arts Grades 6–8

Jacquelyn Graham\*

Penny Houtz

Bobbie Reiten

Carole Wicklander

#### English Language Arts Grades 9–11

Joe Eliaz

Cheryl Engle

Chris Scalercio

Margaret Weldon\*

#### Mathematics Grades 3–5

Linda Bridges\*

Penny Ridgeway

Angela Tapper

Eric Jenson

#### Mathematics Grades 6–7

Beth Cipolletti

Dorothy DeMars

Leo Edwards\*

John Selisky

**State of California Reviewers (continued)****Algebra I / Geometry**

Barbara Coleman  
 Jennifer Kuklenski  
 John Ploppert  
 Mike Stutz

**Science Grades 5 and 8**

Tom Anderson  
 Denise Johnson  
 Christina Lambie  
 Eric Willis

**High School Science**

Nancy Jones-Powers  
 Francine Kennedy  
 Gay McDonald  
 Shahida Merchant

\*Group Leader

**National Experts (continued)****Algebra I / Geometry**

Charlie Breit  
 Monica Kocourek  
 Tom Muchlinski  
 Rachelle Rogers\*

**Science Grades 5 and 8**

Kip Bollinger\*  
 Charles Hill  
 Erica Hyland  
 Deedra Pell

**High School Science**

Timothy Butcher\*  
 Dave Durette  
 Lee Enger  
 Joe Schweiss

**Project Support****Carsten Wilmes, PhD**

Dr. Carsten Wilmes is the director for assessment for the World-Class Instructional Design and Test Consortium (WIDA). Dr. Wilmes supervises the development and operational implementation for WIDA's tests and is responsible for the planning and implementation of alignment studies for English language learners. In addition, he coordinates the data analysis for and manages the development of each study's final report. Prior to his current position, he served as WIDA's alignment coordinator/researcher, where he was the presenter and facilitator for alignment workshops for the states of Wisconsin and the University of Wisconsin–Madison. He also conducted alignment research pursuant to the requirements of the *No Child Left Behind Act of 2001*. Dr. Wilmes has served as a national alignment expert for alignment studies in Louisiana, Maryland, and California.

In addition to his educational test background, Dr. Wilmes has considerable expertise in foreign language testing, teaching, translation, and interpretation. As an intern for Berlitz International Inc., Testing Division, he developed a telephone-delivered proficiency test and provided language proficiency test consulting services. Dr. Wilmes also served as a coordinator for international relations for the city of Natori, Japan. There he translated official documents, interpreted for official city functions, coordinated official student and government exchanges, taught ESL and German courses, and functioned as a cultural and community outreach liaison. While working as a research assistant for the Foreign Language Test Group (FLAG) at the University of Illinois at Urbana-Champaign, he developed a specification-based revision of the Oral English Placement Test (Oral EPT) for incoming international graduate students.

Dr. Wilmes has reviewed the book *Diagnosing Foreign Language Proficiency: The Interface between Learning and Test*. His review was published in the *Modern Language Journal*. Furthermore, Dr. Wilmes has presented at numerous professional organizations, including the American Educational Research Association (AERA) Annual Meeting and the 14<sup>th</sup> World Congress of Applied Linguistics. He is a member of the AERA, International Language Testing Association (ILTA), and the Modern Language Association (MLA).

He earned a BA in linguistics from the University of Paderborn (Germany). Additionally, he earned an MA in Germanic languages and literatures with a concentration in second-language acquisition, and a PhD in second-language acquisition with a concentration in educational measurement.

### **H. Gary Cook, PhD**

Dr. Cook has provided guidance and information to state agencies, universities, and professional organizations on measurement and evaluation issues associated with special education and English language state assessments, alignment, and growth/value-added modeling. He developed, along with Dr. Norman Webb of the University of Wisconsin, the depth-of-knowledge levels for alternate assessment, and was awarded an Office of Special Education grant to develop Hawaii's alternate assessment.

As an educator, Dr. Cook directed and managed development activities for the Wisconsin Department of Public Instruction. He was responsible for supervising assessment staff members, as well as the managing annual state assessment budget for public school assessment programs. At Michigan State University, Dr. Cook lectured in the Department of Counseling, Educational Psychology and Special Education, served as testing coordinator, and acted as curriculum development specialist for the English Language Center. His teaching experience includes teaching at the University of Hawaii at Manoa and at language schools in Honolulu. He is the author of several publications regarding alignment studies (e.g., *Alignment Study: South Dakota's English Language Proficiency Standards for English Language Learners K-12 to Stanford English Language Proficiency Examination*). Dr. Cook is a member of the American Educational Research Association (AERA) and National Council on Measurement in Education (NCME). Dr. Cook received a BA in Linguistics, an MA in teaching English as a second language (TESOL) from the University of Hawaii at Manoa, and a PhD in educational measurement, evaluation, and research design from Michigan State University.

### **Patricia McDivitt**

Ms. Patricia Jo McDivitt serves as senior vice president of curriculum, instruction, and assessment at DRC. She has over 25 years of educational item and test development experience, including overseeing the development of all steps in the item, test development, and publication process for a number of K–12 statewide standards-based testing programs. She has also overseen the development and publication of numerous in-house and author-developed assessments and ancillaries, including the development of K–12 and postsecondary curriculum units and lesson plans designed to link assessment results to instruction. She is an experienced facilitator of test development focus groups and teacher committees, including item writing committees; content item review committees; bias, fairness, and sensitivity review committees; third-party

independent alignment committees; and committees of educators responsible for the development of performance-level descriptors, learning progressions, and grade-level expectations. She is also an experienced facilitator of reviews of instructional units and lesson plans by committees of educators, and she has conducted numerous professional development workshops on such topics as aligning assessment results to curriculum and instruction and assessment literacy.

Ms. McDivitt began her career as an educator, serving as a classroom teacher and counselor for 12 years. In addition to her teaching experience and educational item development, test development, and publishing experience, she has served as president of the Association for Assessment in Counseling and Development, a division of the American Counseling Association. During her year as president, she was coeditor of the *Measurement and Evaluation in Counseling and Development* (MECD) special edition: Large-Scale Assessment and High-Stakes Testing, and she facilitated the revision of the Rights and Responsibilities for Test Users (RUST) Statement. Ms. McDivitt also served on the MECD Editorial Board and as a member of the American Counseling Association's Publications Committee, where she served as cochair.

Ms. McDivitt currently serves as DRC's representative of the State Collaboratives on Assessment and Student Standards (SCASS), Assessing Special Education Students (ASES). She is also a member of the Association of Test Publishers test committee, a division of the American Publishers Association. In addition, Ms. McDivitt also serves as vice chair of the Joint Committee on Standards for Educational Evaluation, where she has been instrumental in the development and launch of *The Student Evaluation Standards*. She has also authored numerous educational publications, including journal articles and chapters on assessment for several books. Most recently, she coauthored the monograph *Applying the Standards: What Educators Need to Know*.

### **Karen Paavola**

Ms. Karen Paavola provides program leadership expertise relative to all stages of the test development process for all student populations including students with cognitive disabilities and English language learners. She provides project direction to ensure that all items and assessments are developed utilizing the principles of universal design, which allows accessibility by all students. During her 15 years in large-scale assessment, Ms. Paavola has worked on many statewide assessments, providing leadership as content director, project lead, and content lead. Some programs Ms. Paavola has led include the California High School Exit Exam, California Standardized Testing and Reporting, California Alternate Performance Assessment, Louisiana Alternate Assessment for 1 percent and 2 percent, Los Angeles Unified School District Formative Assessments, Nebraska State Accountability System, Idaho Standards Achievement Tests, Washington Assessment of Student Learning, Georgia High School Graduation Tests, Georgia End-of-Course Test, Georgia Criterion-Referenced Test, Minnesota Comprehensive Assessments and Basic Skills Tests, Ohio K–5 Assessment System, and Pennsylvania System of School Assessment.

Ms. Paavola's assessment experience ranges from test design to standard setting, including directing and participating in item/rubric development and test construction, participating in the performance assessment scoring processes, and facilitating rangefindings and item and data committee reviews. She is also DRC's lead for third-party alignment studies. She has led such efforts in the states of Alaska, Alabama, Idaho, Louisiana, Nebraska, Maryland, Pennsylvania,

Oklahoma, and West Virginia. Ms. Paavola also has seven years of mathematics test development experience at all grade levels.

In addition to her comprehensive experience in large-scale assessment, Ms. Paavola worked for 13 years as a teacher at the elementary school level and in special education. She has extensive experience in curriculum design and course development. She facilitated the development and implementation of a new mathematics curriculum and series in her school. Ms. Paavola focused on the integration of technology into all areas of the curriculum and engaged the students in project-based learning activities for preschool through eighth grade. While pursuing her MEd at National Louis University, Ms. Paavola taught adult education courses at Wright Junior College in Chicago, Illinois. She holds a BS in special education.

### **Gail Carpenter**

Ms. Gail Carpenter is responsible for business development, education solutions, and professional development solutions at DRC. She has over 17 years of experience as a classroom educator. She also coordinated professional development efforts focused on the assessment-instruction connection in a large district. Ms. Carpenter has 13 years of experience in the education test publishing industry working with all aspects of district and state-level test programs and as a result in a unique understanding of district and school challenges when implementing large-scale assessment.

Ms. Carpenter holds a BA in English from Hardin-Simmons University, and an MEd in administration, supervision and curriculum development from the University of Colorado. She also has completed a principal's licensure program.

### **Jared Hollermann**

As a data analyst at DRC, Mr. Jared Hollermann is involved with many different aspects of the alignment study process and has worked on several alignment study projects, including those for Alabama, Alaska, Idaho, Nebraska, Louisiana, Maryland, and West Virginia. In this role, he has had a variety of responsibilities ranging from task sheet and materials development to data analysis and report writing. He developed an analysis template that quickly and accurately calculates the results of alignment-study data. Mr. Hollermann works closely with test development and other business areas in proposal costing as well.

In addition to his analysis experience in the alignment study process, Mr. Hollermann has worked in the financial services field as an underwriting specialist, where he analyzed credit reports and performed other statistical analyses. Mr. Hollermann has a BS degree in statistics from North Dakota State University.

### **Kimberly Fountain**

As DRC's bias/fairness and sensitivity test development specialist, Ms. Kimberly Fountain facilitates bias and sensitivity review meetings for state assessment programs and provides program support for proposals. Ms. Fountain has project management experience in all stages of the test development process. She has facilitated bias reviews in all content areas and item review meetings in English language arts. Ms. Fountain's successful leadership and interpersonal skills have yielded on-time delivery of quality test materials.

Ms. Fountain has nine years of assessment experience and thirteen years of teaching experience at the elementary level, including special education and gifted/talented education. Her extensive professional development background includes Balanced Literacy, 6+1 Trait® of Writing, the New Jersey Writing Project, and Learning Strategies Institute. She is a former Teacher of the Year and recipient of an Angel grant. This award gave her the opportunity to implement the Flat Stanley Project (an international literacy and communication project) within her classroom. In addition, she has conducted staff development training for teachers and provided academic advisement for students within a juvenile justice school setting. Ms. Fountain holds both an MS and a BS in Education.

## **English Language Arts**

### **Mary Basch**

Since joining DRC, Ms. Mary Basch has worked in the areas of reading and language arts as part of the test development team. Her areas of experience include passage and item development, editing, proofreading, and verifying assessments. She has worked on several state testing programs, including those for Alabama, Alaska, Idaho, Louisiana, Nebraska, Oklahoma, Pennsylvania, and Washington.

Ms. Basch has 19 years of classroom experience teaching elementary students serving as both grade-level and department chairs. During this time, she worked on the Graduation Standards Committee for Columbia Heights Independent School District, matching curriculum to the Minnesota state standards. She also served on the district leadership team, fulfilling the roles of both grade-level and department chairs. Ms. Basch is also trained in gifted and talented education and has taught the gifted and talented cluster for second grade. She holds a MA in curriculum and instruction and a BS in elementary education with an early childhood minor.

### **Joe Eliaz**

Mr. Joe Eliaz is an experienced educator and test developer. Mr. Eliaz has 11 years of experience teaching social studies and language arts and over 13 years of experience in educational assessment. He has contributed to the development of multiple large-scale assessments, including alternate assessments, for programs in California, Georgia, Idaho, Maryland, Oklahoma, Tennessee, Texas, and Virginia. He has extensive experience in the test development process and has facilitated the development of items, content standards, performance level descriptors, test blueprints, standards alignment, and forms construction.

Mr. Eliaz taught secondary school history and language arts for eleven years and served as a campus administrator for three years. His diverse teaching experience ranges from a reading and history position at an alternative high school to a language arts and history position for a campus gifted and talented program. His administrative experience included serving as a 504 coordinator and special education ARD administrator. He has also developed professional development materials and presented them to teachers and administrators, members of client state committees, and attendees at state conferences in Texas and California.

Mr. Eliaz earned an MA degree in educational administration from the University of Houston at Clear Lake and a BS in history from Southwest Texas State University. He holds teaching certificates in history, English, and English as a second language.

### **Cheryl Engle**

Cheryl Engle is an associate professor of reading at Austin Community College in Austin, Texas. She is also a reading/English language arts assessment and curriculum consultant and textbook reviewer for the Engle Consultation Group. As a consultant, she has written and conducted a variety of workshops, training sessions, and presentations in curriculum, instruction, and assessment. Ms. Engle also designed and directed a school-wide high school reading

program based in the content areas of science, mathematics, social studies, health, and vocational education for Northside Independent School District (San Antonio, Texas).

Ms. Engle's past employment includes serving as curriculum supervisor for Baltimore City Public Schools in Baltimore, Maryland. In this position she was responsible for developing and conducting staff development sessions on a variety of topics, including preparing students for statewide assessments, understanding reader-response theory, and teaching secondary reading and writing. She also supervised English language arts instruction in more than 40 middle and high schools and conducted school-wide program reviews to evaluate alignment with the State of Maryland School Performance Program. In addition, Ms. Engle's previous employment includes 10 years of test development experience as a reading test developer and manager of primary reading assessment for Harcourt Educational Measurement in San Antonio, Texas. She is also a former classroom teacher; she taught reading and language arts in grades 7–12.

Ms. Engle received a BA degree in secondary education from the State University of New York at Geneseo and an MEd in reading education degree from the University of Arizona, Tucson.

### **Rick Gedart**

Mr. Rick Gedart taught in Florida at the elementary and middle-school levels and served his internship at the high-school level. At one middle school, he created formative assessments for his students modeled after the Florida Comprehensive Assessment Test, and he served as an original member of an afterschool tutoring program. The school successfully improved on its state-assigned NCLB grade. Mr. Gedart combined interdisciplinary themes and technology in his classroom using methods from BRIDGES interdisciplinary training and the Integrated Science program from the University of Alabama. He also served as a school science fair representative at both the elementary and middle-school levels.

While at Educational Testing Service, Mr. Gedart worked on the Georgia End-of-Course Tests and the Tennessee Gateway and End-of-Course Tests. He supervised the staff and development for the California Standards Test portion of California's Standardized Testing and Reporting (STAR) program and the California High School Exit Exam.

### **Jacquelyn Graham, PhD**

Dr. Jacquelyn Graham has extensive experience in the field of English language arts education. Currently, she is a professional development coach/consultant with the Association for Supervision and Curriculum Development (Virginia) and an adjunct professor of elementary education at St. Petersburg College (Florida). As a consultant, she helps administrators and teacher leaders build expertise in faculty members to improve teaching quality. As an adjunct professor, Dr. Graham teaches core education online courses for teacher education program candidates in both the undergraduate and alternative certification programs. Her English language arts experience includes 10 years a classroom teacher at the elementary, middle school, and college levels. She has coordinated the English language arts program in elementary education, assisted students with English language arts difficulties via small group instruction, taught a developmental writing course, and diagnosed students' English language arts difficulties at grades 7 and 8.

Dr. Graham's related professional work experience includes curriculum development and test development. As a curriculum developer, she helped to develop a plan for the implementation of English language arts portfolios for use in county middle schools. In addition, Dr. Graham has test development experience with the Maryland Department of Education, Measurement Incorporated, and DRC. Among the states she has worked with closely in test development are Alaska, North Carolina, Louisiana, Minnesota, and Pennsylvania. In addition, she served as a consultant on a development team at the Maryland State Department of Education to create an integrated writing, language usage, and English language arts task for the Maryland School Performance Assessment Program (MSPAP) test.

Furthermore, Dr. Graham has served as a research analyst for the American Institutes for Research. Her responsibilities included directing research and policy analyses over a range of education, assessment, and evaluation programs for all aspects of research, including project management, research design, survey instrument development, statistical analysis, reports, and briefings.

Dr. Graham received a BS in elementary education, an MEd in English language arts education from Indiana University in Pennsylvania, and a PhD in English education with a specialty in composition from the University of Maryland.

### **Penny Houtz**

Ms. Penny Houtz has extensive experience in the field of education and assessment. She has contributed her development expertise to large-scale assessment projects for Alabama, North Carolina, and South Carolina. She currently oversees and is team lead for the writing portion of the Alaska Comprehensive System of School Assessment, High School Qualifying Examination and the Alaska Comprehensive System of School Assessment, Standards Based Assessment grades 3–9. In addition, Ms. Houtz is the content lead for the English language arts portion of the Louisiana Educational Assessment Program, which includes developing the writing assessment for both the Integrated Louisiana Educational Assessment Program and the Louisiana Alternate Assessments. She is also involved in the Idaho, Oklahoma, Pennsylvania, and Washington writing assessment programs, and she serves as manager of the English language arts test development team.

In addition to her assessment experience, Ms. Houtz also has a background in curriculum development and classroom teaching. She served three years as director of curriculum and assessment for a school district in Wyoming, acting as the district liaison for Wyoming Department of Education's state assessment. She also served as the district facilitator for the Wyoming Assessment Consortium. Her primary focus was on improving assessment literacy within the district. Ms. Houtz was involved in district coordination of the Wyoming state assessment for six years. Additionally, she has 12 years of experience as an English language arts, social studies, and journalism teacher at the junior-high/middle-school level. She served as the Title I building coordinator, English department chair, and as a representative on district-level reading and assessment committees. Ms. Houtz has led several professional development workshops training teachers on a variety of instructional strategies to improve students' writing achievement including use of the 6+1 Trait® method.

Ms. Houtz holds an MEd in curriculum and instruction with a literacy specialization from Lesley University and BA in English and secondary education from Western Washington University. She also has a K–12 Principal and Director Endorsement from the University of Wyoming.

### **Anne Kirpes**

Ms. Anne Kirpes has 14 years of reading and language arts test development experience at all grade levels. As DRC’s reading test development director, she provides subject-specific expertise relative to all stages of the test development process. She has worked on more than 10 statewide assessments, providing leadership as team lead and/or content lead. Some programs Ms. Kirpes has worked on include the Alaska Comprehensive System of School Assessment, Idaho Standards Achievement Tests, Minnesota Comprehensive Assessments and Basic Skills Test, Louisiana Educational Assessment Program/Graduation Exit Exam, Louisiana Alternate Assessment Levels 1 and 2, Oklahoma School Testing Program, Pennsylvania System of School Assessment, Pennsylvania Voluntary Model Curriculum, and Washington Assessment of Student Learning. Her assessment experience ranges from test design to standard setting, including directing and participating in item/rubric development and test construction, participating in performance assessment scoring processes, and facilitating rangefinding and data committee reviews.

In addition to her comprehensive experience in large-scale assessment, Ms. Kirpes has eight years of teaching experience at the elementary level. She has presented at numerous professional conferences and has won several prestigious awards, including both the Silver and Gold Congressional Awards from the United States Congress and being named to the Phi Delta Kappa 2007–2008 Class of Emerging Leaders.

Ms. Kirpes is the current president of the State of Minnesota Phi Delta Kappa Chapter. She has served four years on the International Reading Association’s Honor Society Committee of Alpha Upsilon Alpha, most recently completing her two-year term as chair. She coauthored the article, “Demystifying Assessments: Understanding the Test Development Process in Large-Scale Assessments,” in PDK’s January 2009 issue of its *EDge* magazine. Ms. Kirpes earned a MEd with a concentration in teaching and learning from Harvard University Graduate School of Education. She also holds a BA in elementary education, reading/language arts from the University of Northern Iowa.

### **Bobbie Reiten**

Ms. Bobbie Reiten has 22 years of experience in education. As an educator, she has worked with many diverse populations, including in both high and low income areas, as well as in rural and suburban settings. Ms. Reiten has taught English-language arts at grades 7–12, has experience as a middle- and high-school guidance counselor, and also as a high-school testing coordinator, data analyst, and administrator. As a classroom teacher, Ms. Reiten has experience with a variety of different teaching models, including departmentalized, team-teaching, and integrated curriculum. Her daily instruction included lessons that were differentiated to meet the needs of individual students and included many hands-on, inquiry-based activities. She also helped implement the Kentucky Instructional Results Information System (KIRIS) in her school, district, and region. Ms. Reiten is especially cognizant of the needs of students from lower socioeconomic levels,

working to meet the needs of her students who had very few resources and to challenge them to reach beyond their perceived limits.

Both in the classroom and in administrative roles, Ms. Reiten continually sought opportunities to increase her knowledge of best practices. She attended district-provided training and went to national and regional conferences, where she explored strategies and methods to better meet student needs, including NCTE conferences, AP conferences, assessment training, team-teaching training, 504 training, gifted and talented training, and Professional Learning Communities training.

Ms. Reiten earned her K–12 administrative license from Saint Mary’s University in Minneapolis. She earned an MA in secondary guidance and counseling from Eastern Kentucky University in Richmond, Kentucky, and an undergraduate degree in secondary English education from the University of Kentucky, Lexington.

### **Christopher Scalercio**

Mr. Christopher Scalercio has 10 years of reading and language arts test development experience across all grade levels. As a senior test development specialist, he provides subject-specific expertise in the content areas of reading and English language arts relative to all stages of the test development process. Mr. Scalercio has worked on several statewide assessment programs, providing leadership as the supervisor of content teams, team lead, and content lead. His assessment experience encompasses a wide range of activities: facilitating passage, item, data, and forms reviews; item writing, editing, and reviewing; item writer workshops; cognitive labs; prompt-anchor pulling; rangefinding; standard setting; test design including test blueprints and item specifications; and assessment scripts including scripts for special populations.

Mr. Scalercio’s specific grade-level assessment experience ranges from working with grades 3 through high school language, writing, and reading multiple choice items, short and long constructed responses, and writing prompts. For two years, he handled the item development, committee reviews, and test construction for the CAHSEE and achieved an excellent working relationship with the California Department of Education.

In addition to his comprehensive experience in large-scale assessment, Mr. Scalercio has seven years of teaching experience at the high school level. He holds an MA degree in adult and higher education and BA degree in English, both from the University of Texas, San Antonio.

### **Roxanne Semon**

Ms. Roxanne Semon serves as a consultant in educational assessment at DRC. She has an extensive background in assessment, including item writing and review, form building, electronic item bank development, state standards alignment, rubric scoring, and development of ancillary materials. She is also an editor of nationally distributed informational booklets and posters for high school counseling offices. In addition, Ms. Semon was an adjunct instructor at Sinclair Community College where she taught courses such as beginning and advanced Composition and Literature.

Ms. Semon earned her BA in English with a minor in French and religion from The College of Wooster (Ohio) and an MA in English from Wright State University (Ohio).

## **Margaret E. Weldon, EdD**

Dr. Margaret Weldon is an educational consultant. She has served as an English language arts national expert for alignment studies based on the methodology of Dr. Norman Webb for the states of Alaska, Nebraska, Idaho, Maryland, and California as a facilitator and reviewer. Dr. Weldon was an assessment specialist for the Alabama Department of Education, where she managed the writing assessment program development and administration for grades 5, 7, and 11. She led the development of the English language arts assessment (grades 3–8) for the Alabama English language arts and mathematics Test and the English language arts comprehension and language subject-area tests of the Alabama High School Graduation Exam (3rd ed.), as well as collaborating on the development of the Alabama Early Learning Assessment—K, 1, and 2 English language arts tests. Dr. Weldon has conducted statewide writing programs for teachers and administrators on composition, instructional strategies, holistic scoring, and English language arts instruction. She has participated in NAEP item reviews for English language arts and writing and in standard setting using Bookmark and Modified-Angoff methodologies.

Dr. Weldon was a classroom teacher and administrator for 19 years in the Montgomery public schools. As a central office administrator, she directed the implementation of the state assessment program for a school system of 35,000 students. When she taught secondary English she was English department chair. Also, Dr. Weldon was a Title 1 English language arts specialist.

She received a BS in secondary English education, an MEd degree in secondary English language arts education, and an EdD in educational leadership, foundations, and technology from Auburn University, Auburn, Alabama.

## **Carole Wicklander**

Ms. Carole Wicklander's test development experience began more than six years ago with her work on reading and language arts assessments for state testing programs. Prior to joining DRC, she worked as a content lead on several statewide assessments, providing subject-specific expertise relative to the test-development process. Her experience includes selecting or commissioning passages, directing and participating in item writing and scoring guidelines development, and constructing test forms. She has also participated in item/passage reviews and range-finding committee meetings.

In addition to her experience in large-scale state assessments, Ms. Wicklander has served as a project manager for some national assessments, grades K–12. She also worked in educational publishing as a senior editor for textbooks and related materials. She has teaching experience in grades K–8 and has worked as a tutor for adult English language learners. Ms. Wicklander has a BA in American Studies and Education from Dominican University.

## Science

### **Kip Bollinger, PhD**

Dr. Bollinger is a consultant in science teaching and performance assessment. Most recently, he coordinated a Master of Science Education program at Lebanon Valley College. His responsibilities included managing all aspects of a 30-semester-hour graduate program in science education and providing diagnostic supervision and direction in focusing on exemplary instruction. Dr. Bollinger has been a science education advisor for the Pennsylvania Department of Education, where he oversaw the development and dissemination of the science and technology content standards and the statewide framework for the assessment of science. As the science education advisor, he also developed a statewide request for administering a \$3,700,000 federal Math and Science Partnership grant and coordinated a science standards-based curriculum with various advisory councils and professional associations. Dr. Bollinger has also served as director of leadership programs and assistant professor of education at Lebanon Valley College. One of his responsibilities included developing and presenting seminars to area teachers and students in science and leadership subjects. He has worked in the public school systems of Pennsylvania for 14 years, where he developed and taught new courses such as MICE-Power, an energy enriched experimental course; Advanced Science, an AP biology course; and Earth Science Lab Blocks. Dr. Bollinger has also been an adjunct professor in graduate studies at colleges and universities in Pennsylvania. He has made many contributions to publications for the Pennsylvania Department of Education and other education agencies.

Dr. Bollinger received a BS in biology with a minor in chemistry from Juniata College, an MS in science and an EdD in science education from Temple University.

### **Timothy Butcher**

Mr. Butcher is a science assessment coordinator at the West Virginia Department of Education in Charleston, West Virginia. His responsibilities include managing item development for statewide science assessments in grades 3–11, analyzing test and item data for the development of test forms, and developing state science standards to ensure testable objectives and appropriate DOK levels. Mr. Butcher has extensive experience in science education that includes teaching the courses Science 9, Advanced Chemistry, Environmental Science, and Advanced Placement Environmental Science at the Putnam County Board of Education. He has also taught courses in Earth, Life, and Physical Science, Environmental Science, Biology; Biology II; Human Anatomy; and Advanced Placement Biology at the Wood County Board of Education. He is the owner, author, and illustrator of *Amoeba Books* and a freelance author for a biology textbook at McGraw-Hill. He works as a supervisor of publisher sales and marketing science material kits at Science Kit & Boreal Laboratories/VWR Scientific in Tonawanda, New York. Mr. Butcher is also the inventor of Groundwater Flowmeister, which simulates the flow of groundwater. The product was manufactured and marketed by Science Kit.

Mr. Butcher has participated in Dr. Norman Webb's alignment study in South Dakota, and he has presented at science conferences and conventions. Mr. Butcher has also served on the Wood County Schools curriculum and science textbook committees. In addition, he has developed and edited the *WESTEST 2 Test Coordinator's Manual*, *WESTEST 2 Examiner's Manual*, *West*

*Virginia Geological Survey Activity Book, and Marietta College Environmental Alliance Activity Book.*

Mr. Butcher completed a BS in biology, general science and secondary education from the State University of New York at Buffalo. He received an MBA in educational administration from West Virginia University. In addition, he has completed 45 graduate hours in science and education courses.

### **David Durette**

Mr. Durette has a comprehensive background in the field of large-scale assessment and education and has developed items, blueprints, and test designs for science assessments (including developing, revising, and editing many science scenarios). He also revised guiding documents and facilitated item review meetings for several statewide testing programs. Mr. Durette has worked on a variety of assessments, including those implemented by the Commonwealth of Pennsylvania, the New Jersey Department of Education, and the Georgia Department of Education. He was also responsible for the science development of the Maryland High School Assessment, the Oklahoma Criterion-Referenced Assessment, and the Washington Assessment of Student Learning.

Mr. Durette is a candidate for an MS in teaching and learning at Harvard University and holds a BS in biology with a minor in chemistry from Northland College in Wisconsin.

### **Lee Enger, PhD**

Dr. Lee Enger currently serves as an instructor at Quincy University, Quincy, Illinois. Courses he teaches include Anatomy, Physiology I and II, Biochemistry, Pre-Professional Exam Preparation, and QUEST: Human Biology. He is currently the chair of the Division of Science and Technology, serves as a faculty advisor for the Minority Student Association, and is also the chair of the Faculty Welfare and Development Committee. Dr. Enger's research includes Drug Resistance Gene Expression in *Candida albicans* Switch Phenotypes and the Expression of Toll-like Receptors in Human Tissue in response to *Candida albicans*. Dr. Enger has had articles published in the *Journal of Clinical Microbiology* and the *Journal of Dental Research*. Presentations include "Intersection of Science and Art" and the *National Science Teachers*. Dr. Enger is a postdoctoral fellow at the Dows Institute for Dental Research at the University of Iowa and received his PhD in biological sciences from there as well.

### **Charles Hill**

Mr. Hill has extensive experience in science education. His experience includes teaching courses in astronomy, biology, chemistry, physical science, and physics in Boston public schools; mentoring four Harvard University Graduate School of Education students; being an evaluator for the Presidential Awards for Excellence in Math and Science Teaching; and being a reviewer for the Louisiana Comprehensive Curriculum: K–12 Science Curriculum. Aside from his education career, Mr. Hill has worked at Polaroid Corporation as a junior process engineer. Currently, he is a senior research associate at the Center for Science Education at the Education Development Center, Inc., in Newton, Massachusetts. His responsibilities include writing,

managing a WebBoard, and serving as field-test coordinator for teachers nationwide using the NSF-sponsored Foundation Science: Earth Space Curriculum.

Mr. Hill has presented the topic “The Power of Story” at the National Science Teacher Association (NSTA) conference in Anaheim, California, which focused on developing high school physics and chemistry curricula. He has also copresented to teachers in the Springfield, Massachusetts, public schools the topic “Analyzing Grade 9 Physical Science Investigations.” In addition, Mr. Hill has participated as an external national expert in alignment studies for the states of Alabama, Maryland, and West Virginia.

Mr. Hill completed a BA in biology and received an MA in secondary science education from Boston University. He holds a certificate of advanced study in teaching, curriculum, and learning environments from Harvard University.

### **Erica Hyland**

Ms. Hyland has six years of classroom teaching experience; five of these years were spent as a science teacher at the middle school and high school levels. She has taught numerous science courses, including physical science, earth science, and biology; she has also taught a basic mathematics-skills course. Ms. Hyland has developed a portfolio of lesson plans, including yearly, unit, and daily plans that address district, state, and national standards. She has also served on numerous committees for schoolwide improvement, student behavior issues, and community building.

Ms. Hyland holds an MEd in science education and a BS in biology, both from the University of Minnesota. She is a licensed science educator in the State of Minnesota.

### **Deedra Pell**

As a science test development specialist at DRC, Ms. Deedra Pell oversees and participates in the development of state assessments and ancillary materials in science. With seven years of experience in the assessment industry, she currently serves as the project lead for the Pennsylvania Classroom Diagnostic Tools and Pennsylvania System of School Assessment. Ms. Pell completes senior reviews of science items and test forms as well as ensuring the accuracy of science content in English language arts items.

Ms. Pell was the project lead for the Qatar Senior Schooling Certificate. In this capacity, she worked with item writers, editors, and translators to develop test forms for two levels in each of eight content areas. She provided senior reviews of test items and forms for the content areas of chemistry, physics, and biology at the foundation and advanced levels. She facilitated and oversaw reviews of items, translations, and bilingual test forms with members of the Supreme Education Council. She was the science lead for numerous state testing programs, including the Georgia Criterion-Referenced Competency Tests, West Virginia WESTEST 2, and Missouri Assessment Program. She oversaw and participated in the development of test items, selection of test forms, and production of test materials in science. In addition, she facilitated many customer meetings and reviews, including item-writing workshops, content and sensitivity reviews, forms reviews, rangefindings, and standard settings. She also served as the science subject-matter

expert for a research-and-development project seeking to develop more cost-efficient item types, and on a committee to improve the implementation of universal design on shelf and custom contracts.

Ms. Pell taught science in Indiana at the elementary and high school levels, where she differentiated instruction for students at different places along the learning spectrum. She volunteers with the Indiana State 4-H program, developing assessments for a competition of equine knowledge for students in grades 3–12.

Ms. Pell holds an MS in educational psychology with an emphasis in research methods and measurement and a BS in chemistry with a teaching option, both from Purdue University in West Lafayette, Indiana. She is currently enrolled in a doctoral program in curriculum and instruction, also at Purdue University.

### **Joseph Schweiss**

Mr. Schweiss has a diverse background that includes classroom teaching experiences in urban, suburban, and rural settings in secondary physical and biological sciences and post-secondary marine biology. He has experience teaching English as a foreign language in a Costa Rican elementary school. He has taught community education classes in rural Ecuador as a part of an environmental conservation group. Mr. Schweiss holds an MEd from the University of Minnesota in science education, a BS from the University of Wisconsin, and a Minnesota teaching license in life sciences, grades 9–12.

Currently, Mr. Schweiss is a senior science assessment specialist with DRC. As an assessment specialist, Mr. Schweiss participates in all aspects of science item development and assessment design for general education large-scale assessments, as well as modified assessments, including those that address the 1 percent and 2 percent student populations. His duties include reviewing, editing, and verifying test items; facilitating item review committees; and reviewing items for alignment with content curriculum standards. In addition, Mr. Schweiss has developed workshop materials for training teachers and assessment leaders on how to use assessments and interpret results. He has trained over 100 teachers from various locations around the country to develop high quality, scientifically accurate items that meet state-specific, standards-based criteria. He has worked on science assessments with the state department of education in various states including Alabama, Alaska, Georgia, Idaho, Louisiana, Maryland, Pennsylvania, and South Carolina. He understands that, in order for it to be successful, an assessment needs to enhance educators' understanding of the critical connection between assessments and day-to-day classroom instruction and learning. Mr. Schweiss' professional experiences have given him the tools and insights to develop and critique creative, accurate, and insightful science test items.

## **Mathematics**

### **Charles Breit**

Mr. Charles Breit has a comprehensive background in the field of large-scale assessment and education. He has more than 30 years of experience in classroom instruction, department leadership, and curriculum design and evaluation. He has taught classes in mathematics, physics, and special education. Mr. Breit's assessment experience ranges from blueprint and test design to standard setting and reporting including facilitation of client planning and review meetings. He has coordinated the development of manuals, testing accommodations, ancillary materials, and client reports. Mr. Breit has planned and overseen work across functional and content areas, coordinating efforts and collaborating with project partners and contractors. He has presented at professional conferences and coordinated the creation of professional development materials and presentations for clients.

Mr. Breit holds a MEd in mathematics education and a BS degree in mathematics and mathematics education from the University of Minnesota. He is currently enrolled in the Master's Certificate in Project Management program through the University of Wisconsin Executive Education Center.

### **Linda Bridges**

Ms. Linda Bridges is currently a secondary Alabama Mathematics, Science, Technology Initiative (AMSTI) specialist at the University of Alabama in Huntsville, Alabama. In this capacity, Ms. Bridges serves as an AMSTI trainer for grades 6–12 mathematics teachers; develops and presents professional development sessions and workshops to grades 6–12 mathematics teachers; models inquiry-based, hands-on lessons in grades 5–12 AMSTI mathematics classrooms; models and uses appropriate forms of technology in lesson presentations and teacher training; and presents AMSTI overview sessions to preservice teachers at local universities. Ms. Bridges has also worked as a college algebra adjunct teacher at Northwest Mississippi Community College and the University of Mississippi in Oxford, Mississippi.

In addition to her university teaching experience, Ms. Bridges has over 32 years of teaching experience at the middle school and high school levels, including five years teaching geometry, Algebra II, precalculus, trigonometry, foundations of higher mathematics, AP Calculus I and II, AP Statistics, probability and statistics, Integrating Science/Mathematics with Technology and Data Analysis, Theory of Equations, and other individualized courses at the Mississippi School for Mathematics and Science. Ms. Bridges is also a mentor for teachers seeking National Board Certification and a member of the Alabama Council of Teachers of Mathematics, the National Council of Teachers of Mathematics, and the Council of Presidential Awardees in Mathematics. She has been extensively involved in state and national mathematics initiatives throughout her in education.

Ms. Bridges received a BS in mathematics from Mississippi University for Women and an MEd in secondary mathematics education from the University of Mississippi. She also holds a Class AA Secondary Mathematics (6–12) teacher certification in the state of Alabama and is a National Board Certified Teacher in secondary mathematics.

## **Beth Cipoletti, EdD**

Dr. Beth Cipoletti has more than 20 years of experience in assessment and mathematics education. Currently she is the assistant director of the Office of Assessment and Accountability at the West Virginia Department of Education. She is responsible for directing and monitoring components of the West Virginia Statewide Assessment Program: ACT EXPLORE, ACT PLAN, and COMPASS. Dr. Cipoletti also develops technical assistance and training materials for teachers, analyzes test results, and participates in the development and implementation of the alternate assessment data folio for students with significant cognitive disabilities. In addition to her role in assessment, Dr. Cipoletti is an associate professor of elementary and secondary education at Marshall University Graduate College. She develops and plans lectures, activities, and evaluations for the following courses: Finite Mathematics, Technical Mathematics for Math Educators, Teaching Mathematics to Early Adolescents, Advanced Techniques in Teaching Elementary and Middle School Mathematics (online), and Graphing to Enrich Middle School Mathematics.

As an assistant professor of mathematics at the University of Charleston–West Virginia, Dr. Cipoletti’s responsibilities included teaching the courses Business Mathematics, College Mathematics, Intermediate Algebra, College Algebra, Trigonometry, Calculus I, and Fundamentals of Mathematics Instruction. She has also served as content coordinator of mathematics education for grades 5 through 12. Her teaching experience includes teaching middle school and high school students in West Virginia.

Dr. Cipoletti has published articles in *Mathematics Teaching in the Middle School* and *Math Matters*. She has presented at the Council of Chief State School Officers (CCSSO) National Conference on Student Assessment, the West Virginia Council of Teachers of Mathematics Annual Conference, the American Educational Research Association (AERA), and the National Council of Teachers of Mathematics (NCTM).

Dr. Cipoletti earned a BS in secondary education and an EdD in educational leadership from West Virginia University. She earned an MA in secondary education from Marshall University Graduate College–West Virginia.

## **Dorothy DeMars**

Dorothy DeMars has extensive experience in mathematics education. She has served as a secondary mathematics teacher for over 18 years and most recently has been employed by the Alabama Department of Education as an educational and mathematics specialist. In this capacity, Ms. DeMars was responsible for helping to develop and manage the Alabama Graduation Exam Program, the End-of-Course Assessment (Algebra I and Geometry) and serving as member of the Mathematics Course of Study Committee. As a mathematics specialist, Ms. DeMars has contributed to the development of the Alabama Basic Competency Test, Grades 3, 6, and 9; Alabama High School Graduation Examination, Second Edition; Alabama Algebra I End-of-Course, Alabama Geometry End-of-Course, and Alabama High School Graduation Exam, Third Edition. Additionally, Ms. DeMars was responsible for the publication of various ancillary materials for the Alabama Department of Education assessment program including Mathematics item specifications for the Basic Competency Test–Grades 3 and 6 for the First Edition of

AHSGE, mathematics item specifications for the Alabama Basic Competency Test Grade 9 and for the Alabama High School Graduation Examination, Bulletin 1990, No. 51, Standards and Objectives (Reading Comprehension, Language, Mathematics, and Science) for the Alabama High Schools Graduation Exam, Bulletin 19967, No. 16, and the mathematics item specifications for the Alabama High School Exam, Bulletin 1999, No. 39.

Ms. DeMars received a BS in mathematics and education from Morris Harvey College, an MEd in curriculum from Florida Atlantic University, and an EdD in curriculum study and research from the University of Alabama.

### **Leo Edwards Jr., EdD**

Dr. Leo Edwards has participated as a mathematics national expert for Alaska, Idaho, Nebraska, and Oklahoma alignment studies based on Dr. Norman Webb's methodology. He currently serves as a mathematics education consultant for state departments of education, school districts, and other educational resource groups and agencies. His work includes many research and professional practices, including projects awarded and funded by the Eisenhower Fund, NASA, Texas Instruments, the National Science Foundation, and other states, universities, and educational organizations. He is a contributing author for several mathematics textbooks for elementary and secondary levels from publishers that include Silver Burdett Ginn and Glencoe/Merrill. Dr. Edwards has conducted numerous mathematics and education-related workshops and made conference presentations related to mathematics topics at the elementary and secondary levels. In addition to his position on the faculty at Fayetteville State University, Dr. Edwards has held leadership positions that include director of the Mathematics and Science Education Center, acting dean of the college of Arts and Sciences, and acting vice chancellor for academic affairs.

Dr. Edwards received a BS in mathematics from Fayetteville State University, an MEd in mathematics education from Temple University, an MA in computer sciences from Goddard College, and an EdD in curriculum and instruction from Utah State University.

### **Eric Jenson**

In his role as a mathematics test development specialist, Mr. Eric Jenson participates in all aspects of the test development process. He develops mathematics assessments according to test and item specifications: creating, editing, and reviewing items. He also provides assessment design, item development, and curriculum content services to DRC's state education clients and works closely with item writers. Through his expertise, he helps to construct tests that are compliant with both content and psychometric requirements. At DRC, he has provided services for numerous large-scale statewide assessments, including those for Alaska, Alabama, Idaho, Louisiana, Nebraska, and Pennsylvania.

In addition to his assessment experience, Mr. Jenson has five years of high school and college classroom experience at economically diverse schools, teaching mathematics including Basic Skills, Pre-Algebra, Algebra I, Geometry, Algebra II, and College Mathematics. He also has experience with both reformed and traditional curriculum and developing alternative education programs for students who do not meet assessment requirements.

Mr. Jenson earned a BA in mathematics from Carleton College in Northfield, MN.

### **Monica Kocourek**

Ms. Monica Kocourek has 11 years of experience teaching students in middle school mathematics, including algebra and geometry as well as broad experience as a mathematics test developer. In addition to large-scale mathematics assessment experience, her background also includes mathematics curriculum and instruction. In her role at DRC, she manages and facilitates project tasks across functional areas for multiple content areas, with mathematics as her specialty. She develops, edits, and reviews mathematics items and assessments according to item and test specifications and trains and works with item writers. She also has experience with aligning mathematics items with academic standards and test blueprints, conducting content review and other committee reviews, and leading professional development sessions for teachers. She has provided her expertise to testing programs in Alabama, Alaska, Georgia, Idaho, Louisiana, Oklahoma, and Pennsylvania.

Ms. Kocourek holds a MA in teaching from the University of St. Thomas, St. Paul, Minnesota, and a BS in mathematics from Creighton University, Omaha, Nebraska. She is a licensed mathematics teacher, grades 7–12.

### **Tom Muchlinski, PhD**

A dedicated mathematics education professional, Dr. Muchlinski has been a mathematics specialist for the Minnesota Department of Education and an assistant professor at Southwest Minnesota State University. As a mathematics specialist, he facilitated state mathematics standards development and advised the state commissioner of education on policy and legislation affecting mathematics education. He taught undergraduate mathematics education courses as well as supervised student teachers at Southwest Minnesota State University. As a high school teacher, Dr. Muchlinski taught in Minnesota schools for 26 years; his courses included Algebra I through Advanced Placement Calculus. He is active in many organizations such as the National Council of Supervisors of Mathematics, National Council of Teachers of Mathematics, and Phi Delta Kappa International. Currently Dr. Muchlinski is a project coordinator for the Minnesota Mathematics Achievement Project (MNMAP) at the University of Minnesota. His responsibilities include designing and coordinating data collection procedures and assisting with data analysis. Dr. Muchlinski disseminates his research findings through journal articles and conference presentations.

Dr. Muchlinski received a BA in mathematics from St. John's University, an MS in curriculum and instruction from St. Cloud State University, and a PhD in mathematics education from University of North Carolina at Chapel Hill.

### **Penny Ridgeway**

Ms. Penny Ridgeway has 21 years of educational experience as a teacher, administrator, and assessment specialist. She has taught students of all ages, preschool through adult, in the areas of mathematics, science, and art. Ms. Ridgeway has served as a high school academic director, a K–8 assistant principal, mathematics supervisor, and university administrator. She has also

tutored ESL students in mathematics and written and conducted a tutorial program for the Scholastic Achievement Test.

Ms. Ridgeway has worked as a mathematics team lead with a state large-scale assessment program. In this position, she was responsible for item writer training, content editing, item review sessions, test construction, and pilot testing. Additionally, Ms. Ridgeway has served on standards and articulation committees and has written and edited test items for assessment programs in many states.

Ms. Ridgeway holds a BA in art education with a minor in science, an MA in system development and adaptation, and she has completed all course work and examinations for a PhD in education. She has taken additional courses in mathematics, business and computer science, and holds certifications in K–12 administration, mathematics, and art.

### **Rachelle Rogers, EdD**

Dr. Rogers is currently a lecturer in the Department of Curriculum and Instruction at Baylor University in Waco, Texas. Her responsibilities include teaching content pedagogy for secondary and middle school mathematics teaching associates, and supervising university interns. She has also served as the mathematics laboratory coordinator at Baylor University and as a mentor teacher at Texas State University. Dr. Rogers is also extensively involved in a number of mathematics initiatives and community programs, including university liaison for University High School, co-principal investigator for Action Research and Its Impact on PDS Partnerships, director of GEAR UP: Project S.T.O.M.P, co-director of GEAR UP Lesson Study, instructor for Teacher Quality Grant, instructor for GEAR UP Super Saturdays, president of the Central Texas Council of Teachers of Mathematics, member of the PDS Coordinating Council, member of the PDS Research Symposium, chair of the middle school task force, member of the secondary certificate team, member of the middle school certificate team, and member of the NCATE middle school and secondary mathematics spa report teams. Dr. Rogers has authored and coauthored numerous manuscripts and research publications, professionally presented at state and national educational conferences, and she has reviewed for NCTM Mathematics Teaching in the Middle School.

Prior to her university teaching experience, Dr. Rogers taught intermediate and high school mathematics for over 10 years, serving as mathematics department chair and as a master teacher for Mathworks. As a master teacher for Mathworks, Dr. Rogers was responsible for developing and writing summer mathematics curriculum, teaching level 2 students, modeling instructional strategies for certified teachers, and coteaching a graduate course in content pedagogy.

Dr. Rogers received a BA in mathematics from Texas Lutheran University. She received an MEd in curriculum and instruction from Texas State University, and an EdD in curriculum and instruction from Baylor University. She also holds a Texas teacher certification for mathematics 6–12.

## **John Selisky, PhD**

Dr. John Selisky has been in practice as a test development and educational measurement professional since 1996, working on large-scale assessment projects for fifteen states, one province, and four of the largest urban school districts in the U.S. and Canada. This work has included both criterion-referenced and norm-referenced instruments. His experience includes item development, test specification and construction, psychometric analysis, standard setting, content review, rangefinding, scoring, and reporting. He has provided oversight in the management of assessment programs as project director, content manager, and senior consultant. His knowledge of test development policy and execution encompasses all major components including cost analysis, budgeting, operations, quality assurance, and product delivery. As a senior project lead for DRC's Test Development department, he is responsible for development of the high school mathematics component of the Pennsylvania Voluntary Model Curriculum. These instructional and assessment materials are designed as exemplars of standards-aligned best practices in classroom activities for teachers, and these materials include supporting resource documents and standards-based assessments created by DRC.

Dr. Selisky began building his educational assessment knowledge as a teacher, first as a Peace Corps volunteer teacher in Sierra Leone, West Africa, then as a mathematics teacher in the public schools of Pennsylvania, New York, and Illinois. He also held university teaching positions in mathematics and teacher education. His professional work in large-scale assessment began with item and test development for the states of Ohio, New Jersey, and Washington, where he created mathematics tests for grade 3 through high school. He developed multiple-choice items, constructed-response items, and scoring rubrics, as well as strategies for reliable handscoring, analysis, and reporting. He also served as the content development manager and project manager for the Georgia Criterion-Referenced Competency Tests in English language arts, mathematics, science, and social studies. He was responsible for staffing, budgeting, developing, delivering, and reporting for Georgia's principal educational accountability program that includes approximately one million students. He also supervised the content delivery components of item and test development to the automated item management systems.

As a senior content consultant in mathematics, Dr. Selisky worked in collaboration with the education departments of Washington, Michigan, Oklahoma, and Georgia to train educators in the most appropriate and effective uses of assessments and to help teachers improve their skills in interpreting and reporting results. Some of Dr. Selisky's most important policy contributions to large-scale assessment programs have been in the area of organizing, mapping, and coding state curriculum content standards, including the development of mathematics learning progressions (scope and sequence). The products of these efforts have contributed to more efficient and transparent assessment initiatives and increased instructional effectiveness by teachers.

Dr. Selisky has also written and developed a variety of ancillary products in support of assessment programs. These products include sample item sets, training materials for teachers, and interpretive products for students, parents, and administrators. He has also worked with large urban school districts, including Los Angeles, Clark County (Las Vegas), and Chicago in the development and implementation of high school formative and course assessments to improve student and teacher accountability.

Dr. Selisky has also conducted training presentations, committee reviews, and analytical procedures for educators and measurement professionals. His presentations to state and national professional organizations have included original work in item development, scoring, and instructional practice for teachers. Through his work in the private, not-for profit, and public sectors, Dr. Selisky has trained and mentored assessment professionals in item writing and development, test construction, and data analysis.

Dr. Selisky is a graduate of the University of Pittsburgh with a BS in earth and planetary sciences and mathematics. He holds MAs in secondary education from Lehigh University and instructional technology from Teachers College, Columbia University, New York City. He earned his EdD in mathematics education from Teachers College, Columbia University.

### **Angela Tapper**

Ms. Angela Tapper is a mathematics test development specialist who has participated in all aspects of DRC's mathematics item and test development. She has participated in item acquisition and editing, test construction, standard alignment studies, item translation, forms production, and development of curriculum/instructional ancillary materials for elementary, middle school and high school student populations. Ms. Tapper is also responsible for conducting and facilitating review committees.

In addition to her assessment background, Ms. Tapper has three years of experience teaching high school mathematics, one year teaching high school Spanish, and two years teaching as a Peace Corps volunteer. She holds a BA in mathematics and Spanish from Milligan College in Johnson City, Tennessee.

## **Appendix H**

### **California Participant Demographic Information**

### CMA Alignment Study Participant Selection Methodology

Category	Goal	Group Demographics (Actual) N=32	Comments
<b>Geographic Region (Student %)</b>	Northern/Central 40% (13) Southern 60% (19)	14 18	Combined Northern & Central Regions
<b>Ethnicity (Student %)</b>	Hispanic 52% (16) Anglo 27% (9) Asian 12% (4) African American 7% (2)	8 20 2 2	Hispanic combined with Two or More Races;
<b>Gender (Teacher %)</b>	Male 27% (9) Female 73% (23)	7 25	Reflects teacher population
<b>ELL Certificate (Student %)</b>	26% (8)	23 out of 32	
<b>SPED Certificate (Student %)</b>	11% (4)	24 out of 32	Avg Exper : 11.6 yrs
<b>Type of School (School %)</b>	Rural and Suburban/Town 40% (13) Metro/Urban 60% (19)	22 10	Rural and Suburban/Town Combined
<b>Other Statistics:</b> <b>Currently Classroom Teacher</b>  <b>Currently Teaching in Assigned Subject Area</b>  <b>Number of Schools Represented/Districts represented</b>  <b>Approx. Average Teaching Experience of Selected Group</b>		24 out of 32  19 out of 32  27 schools and 17 districts  11.1 years	Other roles include District Administrators, Education Specialists, Instructional Coach, Program Specialist

# **Appendix I**

## **Alignment Study Training PowerPoint**

# California Modified Assessment Alignment Study

April 10—13, 2012

1

## This Study

- ▶ California Modified Assessment (CMA):
  - English Language Arts
  - Mathematics
  - Science
  
- ▶ Based on the Webb methodology

2

## Participants

- ▶ Trainer/Facilitator
- ▶ National Content Reviewers
- ▶ California Content Reviewers

3

## Alignment Study Key Points

- ▶ Purpose of the study
- ▶ Definition of alignment
- ▶ Alignment criteria
- ▶ Depth-of-Knowledge (DOK) levels
  - Definitions and examples of each level
- ▶ Alignment process

4

## Alignment

“The degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide the system toward students learning what is expected.”

(Webb 1999)

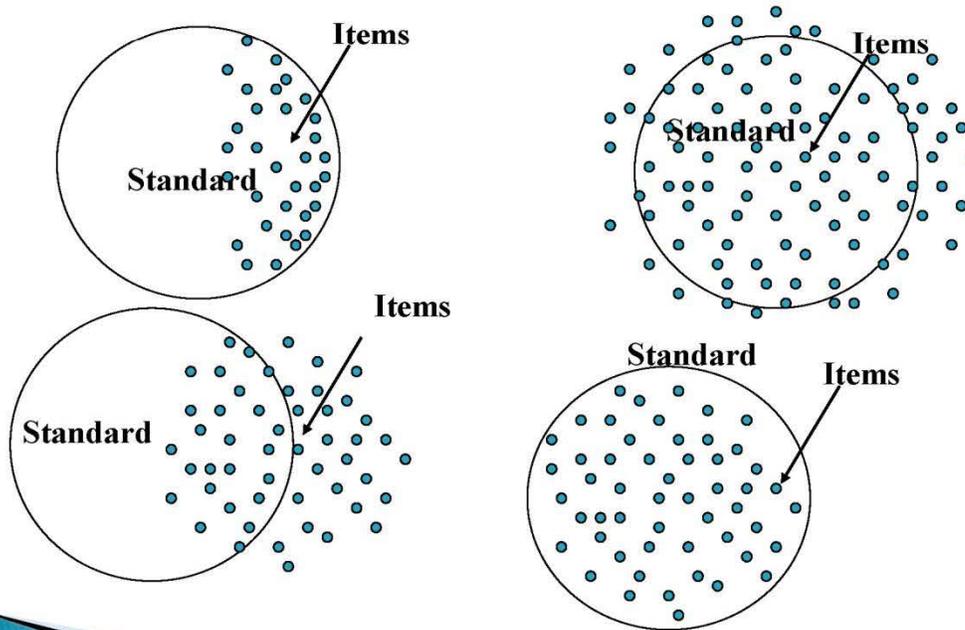
5

## Main Concepts in Alignment

- ▶ Match—How well the assessment matches content expectations
- ▶ Depth—The degree of complexity within content expectations that reside in the assessment
- ▶ Coverage—How well tests cover content expectations

6

## Degrees of Alignment



7

## Match of Depth-of-Knowledge Level and the Level of Performance

“Depth-of-Knowledge between standards and assessments 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.” (Webb 1999)

8

## Coding Depth of Knowledge (DOK)

- ▶ **Level 1: Recall of Information**
  - Recall of a fact, information, or procedure
- ▶ **Level 2: Skill/Concept**
  - Use information or conceptual knowledge, two or more steps, etc.
- ▶ **Level 3: Strategic Thinking**
  - Requires reasoning, developing a plan or a sequence of steps, some complexity, more than one possible answer
- ▶ **Level 4: Extended Thinking**
  - Requires an investigation, time to think and process multiple conditions of the problem

9

## Level 1 Recall of Information

Key words found in standard and questions at Level 1 may include

- ▶ identify
- ▶ recall
- ▶ recognize
- ▶ use

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# Level 1 Example

11

# Level 1 Example

12

## Level 2 Skill/Concept

Key words found in standards and questions at Level 2 may include

- ▶ interpret
- ▶ infer
- ▶ analyze
- ▶ compare

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## Level 2 Example

14

## Level 2 Example

15

## Level 3 Strategic Thinking

- ▶ Requires students to justify their response to a question that has more than one possible answer

Activities may include

- ▶ Experimental designs that involve more than one dependent variable
- ▶ Drawing conclusions from observations
- ▶ Citing evidence and developing a logical argument for concepts
- ▶ Explaining phenomena in terms of concepts
- ▶ Using concepts to solve nonroutine problems

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**Level 3  
Example**

17

**Level 3  
Example**

18

## Issues in Assigning Depth-of-Knowledge Levels

- ▶ Complexity vs. test question difficulty
- ▶ Central performance in the standards

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## Alignment Process

- Task 1 – Individually verify depth of knowledge of each standard; discuss rating, if necessary
- Task 2 – Take the test and record answers in the booklet
- Task 3 – Determine which standard each test question measures and the DOK of each test question
- Task 4 – Categorical Concurrence  
Range-of-Knowledge Correspondence  
Balance of Representation
- Task 5 – Debriefing Questions

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# Data Collection

Task 1		
Enter the depth-of-knowledge level for the first three standards. We will then discuss them as a group and reach consensus on the depth of knowledge (DOK). Once consensus is reached on the first three standards, continue to assign depth-of-knowledge levels to the remaining standards. Once everyone has finished, we will reach consensus on the remaining standards before proceeding to Tasks 2 and 3.		
Grade 3 English-Language Arts		
Standards	Reviewer Rating	Consensus
<b>Vocabulary</b>		
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT:</b> Students understand the basic features of reading. They select letter patterns and know how to translate them into spoken language by using phonics, syllabication, and word parts. They apply this knowledge to achieve fluent oral and silent reading.		
<b>R1.1 Decoding and Word Recognition:</b> know and use complex word families when reading (e.g., -ight) to decode unfamiliar words		
<b>R1.2 Decoding and Word Recognition:</b> decode regular multisyllabic words		
<b>R1.4 Vocabulary and Concept Development:</b> use knowledge of antonyms, synonyms, homophones, and homographs to determine the meanings of words		

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# Data Collection

Task 3				
Complete Task 3 by selecting a DOK and Primary standard for each item. If you feel that an item is not aligned to any of the standards listed, select N/A in the Primary standard cell. If you think that an item is aligned to more than one standard, you may select a standard from the Secondary category. A DOK level must be assigned for every item. Use the drop-down boxes to enter your judgments.				
Item Number	DOK	Primary	Secondary	Source of Challenge
1		R1.7		
2				
3		R1.1		
4		R1.2		
5		R1.4		
6		R1.5		
7		R1.6		
8		R1.7		
9		R1.8		
		R2.1		

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# Data Collection

Task 4					
<p>In Task 4 you will use your professional judgment to determine if the test is aligned to the standards. In the cells that are shaded blue, enter a "yes" or a "no" based on the criteria described in the corresponding column for the Blueprint, Categorical Concurrence, Range of Knowledge, and Balance of Representation. The numbers listed next to the standards were automatically calculated based on your judgments in Task 3. Use the judgments from Task 3 and the definitions at the top of the page to determine if the criteria were met.</p>					
	Number of Items Measuring the Primary or Secondary Eligible Content	California CMA Blueprint for ELA Grade 3	Categorical Concurrence  (For categorical concurrence, 6 or more test questions must be aligned to the Standard - primary and/or secondary)	Range-of-Knowledge  (For range-of-knowledge, at least 50% of the eligible content must have a related test question)	Balance of Representation  (For balance of representation, distributed proportionately among eligible content within the standard)
<b>Vocabulary</b>					
<b>R1.0 WORD ANALYSIS, FLUENCY, AND SYSTEMATIC VOCABULARY DEVELOPMENT</b>					
R1.1 <b>Decoding and Word Recognition:</b> know and use complex word families when reading (e.g., -ight) to decode unfamiliar words	1	2			
R1.2 <b>Decoding and Word Recognition:</b> decode regular multisyllabic words	2	2			

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# Data Collection

Task 5	
<p>Task 5 gives you an opportunity to give feedback about the test. Please complete each question in the space provided.</p>	
Debriefing Questions	
1. In your opinion, does the assessment cover the full range of content specified in the State's standards? (Are all of the standards represented legitimately in the assessment?)	
2. In your opinion, does the assessment reflect a similar degree and pattern of emphasis apparent in the standards?	
3. In your opinion, does the assessment reflect the full range of cognitive complexity and level of difficulty of the concepts and processes described? (Is the assessment as demanding as the standards?)	

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## Remember

- ▶ DOK is a scale of cognitive demand, not difficulty.
- ▶ DOK requires looking at the standard—**not student work**—in order to determine the level. DOK is about the item/standard—**not the student**.
- ▶ The context of the item/standard must be considered to determine the DOK; just looking at what verb was used is not enough.

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## Room Assignments

- ▶ Bear - ELA Grades 3-5
- ▶ Feather - ELA Grades 6-8
- ▶ American - ELA Grades 9-11

26

# Questions?

27

## Bibliography

- ▶ **Webb, N. L. (1999). *Alignment of science and mathematics standards and assessments in four states (Monograph)*. Council of Chief State School Officers, 18.**
- ▶ **Webb, N. L. (2005). *Depth-of-knowledge levels for four content areas*. Paper presented at the meeting of the Florida Education Research Association, 50th Annual Meeting, Miami, FL.**
- ▶ **N.L. Webb (personal communication, November 20, 2006).**

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California Modified Assessment  
Alignment Study  
Sample Agenda  
English Language Arts  
Grades 3–5  
April 10–11, 2012



**Tuesday, April 10**

8:00 AM	Continental Breakfast and Registration
8:30 AM	Welcome
9:15 AM	Alignment Study Training
9:45 AM	Transition to assigned Breakout Rooms
10:30 AM	Depth-of-Knowledge Consensus-Grade 3
12:00 PM	Lunch
1:00 PM	Finish Depth-of-Knowledge Consensus-Grade 3
1:30 PM	Individual Judgments -Grade 3
2:30 PM	Break
2:45 PM	Depth-of-Knowledge Consensus-Grade 4
4:30 PM	Wrap-up

**Wednesday, April 11**

8:00 AM	Continental Breakfast
8:30 AM	Individual Judgments-Grade 4
9:15 AM	Break
9:30 AM	Finish Individual Judgments-Grade 4
10:45 AM	Depth-of-Knowledge Consensus-Grade 5
11:30 AM	Lunch
12:30 PM	Finish Depth-of-Knowledge Consensus-Grade 5
1:15 PM	Individual Judgments-Grade 5
2:00 PM	Break
2:15 PM	Finish Individual Judgments-Grade 5
3:30 PM	Wrap-up