



A L T E R N A T E

***Alabama Comprehensive Assessment
Program (ACAP) Alternate***

Item Specifications

Mathematics

Grade 3

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(ACAP) Alternate***

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Mathematics

The *Alabama Comprehensive Assessment Program (ACAP) Alternate* item specifications are based on the development of alternate assessments that measure the *2019 Alabama Alternate Achievement Standards: Math*. The item specifications define the purpose of the *ACAP Alternate* and provide important information regarding the content to be measured. The item specifications also serve as a road map to guide Alabama educators in the development and subsequent review of items that best measure the *2019 Alabama Alternate Achievement Standards: Math* for a given grade and subject area. Each item specification is aligned to the given Alabama content area, cluster, and standard and includes the following key information:

- Course of Study Standard
- Alternate Achievement Standard
- Content limits/constraints
- Recommended depth of knowledge (DOK) or cognitive levels
- Sample item stem information

Definitions

Course of Study Standards: The Course of Study Standards are a set of content curriculum statements that define what general education students should know and be able to do at a given grade level.

Alternate Achievement Standards: The *2019 Alabama Alternate Achievement Standards: Math* are directly aligned to the 2019 Alabama Course of Study Standards. The *2019 Alabama Alternate*

Achievement Standards: Math define what students with the most significant support needs should understand (know) and be able to do at the conclusion of a course or grade.

Alabama Content Areas: Alabama content areas are large groups of related clusters and content standards. Because mathematics is a connected subject, standards from different Alabama content areas may sometimes be closely related.

Standards: Standards define what students should understand (know) and be able to do at the conclusion of a course or grade.

Assessment Limits/Content Constraints: Assessment limits and/or content constraints define the range of content knowledge and the degree of difficulty allowable when items are written to measure a given standard.

Depth of Knowledge (DOK): Depth of knowledge involves the cognitive complexity, or the nature of thinking required for a given item. Depth of knowledge levels are used in the development of items for cognitive demand. Therefore, when developing items for depth of knowledge, the item should be as demanding cognitively as what the actual standard expects. The depth of knowledge includes three levels, from the lowest (basic recall) to the highest (strategic thinking). The *ACAP Alternate* assessment items are written to one of three cognitive levels of complexity:

- Level 1: Recall
- Level 2: Application of a Skill/Concept
- Level 3: Strategic Thinking

Item Types: The *ACAP Alternate* assessments are composed of various item types. These item types are described in the following section.

Context: Context provides information regarding the types of stimulus materials that can be used

in the items. If a context is allowable, it means that the item may have context. If context is required, then the item measuring the given standard must have context. If no context is noted, then the items measuring the given standard should not have context.

Sample Stem Information: This statement explains what students are expected to do when they respond to a given item.

Item Types

The *Alabama Comprehensive Assessment Program (ACAP) Alternate* assessments are composed of various item types. These item types are described below.

Multiple-Choice (MC) Items: MC items have three answer choices, including two distractors and one correct answer. Distractors for mathematics represent common misconceptions, incorrect logic, incorrect application of an algorithm, computational errors, etc. A correct response to an MC item is worth one score point in the mathematics *ACAP Alternate*.

Performance Task Items:

Multiple-Select (MS) Items: MS items are similar in structure to MC items. However, unlike an MC item, an MS item has four options and more than one correct answer. In other words, multiple responses are required for a given item. A correct response to an MS item is worth two score points in the mathematics *ACAP Alternate*.

Two-Part Multiple-Choice Items: Two-Part Multiple-Choice Items have two questions. The questions may require the student to identify the sides and then angles of a shape, perform computations, identify information of a graph or chart, etc. A correct response to a Two-Part MC item is worth two score points in the mathematics *ACAP Alternate* when both parts are correct.

Item Specifications

Item specifications are one of the key requirements for a high-quality, legally defensible, standards-based assessment. Item specifications help define important characteristics of the items (i.e., test questions) developed for each Alternate Achievement Standard. These item specifications provide guidelines to help clarify the focus of what is to be assessed, what items may include, and what items may not include (i.e., assessment limits). Item specifications are used by item writers, item editors, and item reviewers as a common reference throughout the item-development process, from initial writing to final approval. These mathematics item specifications are based on the *2019 Alabama Alternate Achievement Standards: Math*.

Grade	3
Content Area	Operations and Algebraic Thinking
Cluster	Represent and solve problems involving multiplication and division.
Standard	Illustrate the product of two whole numbers as equal groups by identifying the number of groups and the number in each group and represent as a written expression.
Alternate Achievement Standard	M.AAS.3.1: Using vocalization, sign language, augmentative communication, or assistive technology, model finding the sum of equal groups using repeated addition (sums within 30).
Assessment Limits/Content Constraints	Limit sums to 30 or less. Limit equal groups to 15 or less.
DOK(s)	1 or 2
Item Type	MC
Sample Item Stem(s)	Aria, Kinsley, Lucas, and Samuel each have five markers. How many markers do they have altogether?

Grade	3
Content Area	Operations and Algebraic Thinking
Cluster	Represent and solve problems involving multiplication and division.
Standard	Solve word situations using multiplication and division within 100 involving equal groups, arrays, and measurement quantities; represent the situation using models, drawings, and equations with a symbol for the unknown number.
Alternate Achievement Standard	M.AAS.3.3: Use strategies (arrays, equal groups, manipulatives, etc.) to model multiplication and division equations to find an unknown number.
Assessment Limits/Content Constraints	Limit to unknown numbers of 30 or less. Limit known numbers to 10 or less.
DOK(s)	1 or 2
Item Type	MC
Sample Item Stem(s)	Here are three models. Which model shows three times six? What is the answer to three times six?

Grade	3
Content Area	Operations and Algebraic Thinking
Cluster	Multiply and divide within 100.
Standard	<p>Use strategies based on properties and patterns of multiplication to demonstrate fluency with multiplication and division within 100.</p> <p>a. Fluently determine all products obtained by multiplying two one-digit numbers.</p> <p>b. State automatically all products of two one-digit numbers by the end of third grade.</p>
Alternate Achievement Standard	M.AAS.3.7: Demonstrate fluency of multiplication using skip counting, multiples of numbers, number charts, arrays, etc.
Assessment Limits/Content Constraints	Limit to products of 30 or less.
DOK(s)	1 or 2
Item Type	MC
Sample Item Stem(s)	Here is a multiplication number chart. Here is a multiplication problem. What is the answer to five times six?

Grade	3
Content Area	Operations with Numbers: Base Ten
Cluster	Use place value understanding and properties of operations to perform multi-digit arithmetic.
Standard	Use concrete materials and pictorial models based on place value and properties of operations to find the product of a one-digit whole number by a multiple of ten (from 10 to 90).
Alternate Achievement Standard	M.AAS.3.10: Using vocalization, sign language, augmentative communication, or assistive technology, use concrete materials and pictorial models to model whole numbers.
Assessment Limits/Content Constraints	Limit whole numbers to 50 or less. Use objects or models.
DOK(s)	1 or 2
Item Type(s)	MC
Sample Item Stem(s)	Here are three models. Which model shows the number nineteen?

Grade	3
Content Area	Operations with Numbers: Base Ten
Cluster	Develop understanding of fractions as numbers.
Standard	<p>Explain equivalence and compare fractions by reasoning about their size using visual fraction models and number lines.</p> <p>a. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers.</p> <p>b. Compare two fractions with the same numerator or with the same denominator by reasoning about their size (recognizing that fractions must refer to the same whole for the comparison to be valid). Record comparisons using $<$, $>$, or $=$ and justify conclusions.</p>
Alternate Achievement Standard	<p>M.AAS.3.15: Compare fractions.</p> <p>M.AAS.3.15a: Use models to identify two equivalent fractions (limit to fourths and halves).</p> <p>M.AAS.3.15b: Recognize two equivalent fractions (limit to fourths and halves).</p> <p>M.AAS.3.15c: Use models of fourths and halves to make a whole.</p>
Assessment Limits/Content Constraints	<p>Limit fractions to fourths and halves.</p> <p>Limit model shapes to circles, squares, and rectangles.</p> <p>Limit shapes used in the answer choices to those shapes used in the stem.</p>
DOK(s)	1 or 2
Item Type(s)	MC, MS
Sample Item Stem(s)	Here is a circle with one-half of the circle shaded. Here are three other circles with portions shaded. Which picture also shows one-half of the circle shaded?

Grade	3
Content Area	Data Analysis
Cluster	Represent and interpret data.
Standard	Measure lengths using rulers marked with halves and fourths of an inch to generate data and create a line plot marked off in appropriate units to display the data.
Alternate Achievement Standard	M.AAS.3.16: Measure lengths of objects using non-standard tools (paper clips). Limit to whole numbers.
Assessment Limits/Content Constraints	Non-standard tools may include paper clips, blocks, counters, shoes, etc. Limit to whole numbers of 50 or less.
DOK(s)	1 or 2
Item Type(s)	MC
Sample Item Stem(s)	Here are three keys. Which key is three paper clips long?

Grade	3
Content Area	Data Analysis
Cluster	Represent and interpret data.
Standard	<p>For a given or collected set of data, create a scaled (one-to-many) picture graph and scaled bar graph to represent a data set with several categories.</p> <p>a. Determine a simple probability from a context that includes a picture.</p> <p>b. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled graphs.</p>
Alternate Achievement Standard	M.AAS.3.17: Using vocalization, sign language, augmentative communication, or assistive technology, represent and interpret data on a picture or bar graph when given a model or a graph to complete.
Assessment Limits/Content Constraints	<p>Limit to three categories.</p> <p>Limit data to 10 or less.</p>
DOK(s)	2 or 3
Item Type(s)	MC, MS, EBSR
Sample Item Stem(s)	Jackie and Johnny surveyed students in their class on which fruit juice they preferred, grape juice or apple juice. Here is a chart that shows the results of their survey. The chart title is “Favorite Fruit Juice.” There are two columns: one is labeled “Grape Juice” and the other is labeled “Apple Juice.” Based on the chart, which graph shows all the results from the survey?

Grade	3
Content Area	Measurement
Cluster	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Standard	Tell and write time to the nearest minute; measure time intervals in minutes (within 90 minutes.) a. Solve real-world problems involving addition and subtraction of time intervals in minutes by representing the problem on a number line diagram.
Alternate Achievement Standard	M.AAS.3.18: Using vocalization, sign language, augmentative communication, or assistive technology, tell time on a digital clock (to the hour, half hour, or quarter hour).
Assessment Limits/Content Constraints	Limit to a digital clock. Limit time to the hour, half hour, and quarter hour.
DOK(s)	1 or 2
Item Type(s)	MC
Sample Item Stem(s)	Charles and Addison start their homework at six thirty. Which clock shows six thirty?

Grade	3
Content Area	Measurement
Cluster	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
Standard	<p>Estimate and measure liquid volumes and masses of objects using liters (l), grams (g), and kilograms (kg).</p> <p>a. Use the four operations to solve one-step word problems involving masses or volumes given in the same metric units.</p>
Alternate Achievement Standard	M.AAS.3.19: Identify the appropriate measurement tool to measure liquids and masses of a given object.
Assessment Limits/Content Constraints	Limit to measurements of volumes of liquids and masses of objects.
DOK(s)	1 or 2
Item Type(s)	MC
Sample Item Stem(s)	Penelope and Brent found a large rock. Which tool should they use to find the mass of the rock?

Grade	3
Content Area	Mathematics
Cluster	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
Standard	Relate area to the operations of multiplication using real-world problems, concrete materials, mathematical reasoning, and the distributive property.
Alternate Achievement Standard	M.AAS.3.20: Find the area of a given shape using arrays (unit cubes and tiles) in relationship to multiplication. Limit units to 25.
Assessment Limits/Content Constraints	Limit area to 25 square units. Limit arrays to unit cubes and tiles.
DOK(s)	1 or 2
Item Type(s)	MC
Sample Item Stem(s)	Here is a rectangle covered with square unit tiles. The rectangle is five tiles long and two tiles wide. What is the area of the rectangle?

Grade	3
Content Area	Geometry
Cluster	Reason with shapes and their attributes.
Standard	<p>Recognize and describe polygons (up to 8 sides), triangles, and quadrilaterals (rhombuses, rectangles, and squares) based on the number of sides and the presence or absence of square corners.</p> <p>a. Draw examples of quadrilaterals that are and are not rhombuses, rectangles, and squares.</p>
Alternate Achievement Standard	M.AAS.3.26: Using vocalization, sign language, augmentative communication, or assistive technology, recognize and sort polygons by their attributes (triangle, rectangle, square).
Assessment Limits/Content Constraints	Limit shapes to triangles, rectangles, and squares.
DOK(s)	1 or 2
Item Type(s)	MC, MS
Sample Item Stem(s)	Here are four polygons. Which two polygons have four sides?