DRAFT

Grade 3 Mathematics Item Specifications

Florida Standards Assessments

The draft Florida Standards Assessments (FSA) *Test Item Specifications* (*Specifications)* are based upon the Florida Standards and the Florida Course Descriptions as provided in CPALMs. The *Specifications* are a resource that defines the content and format of the test and test items for item writers and reviewers. Each grade-level and course *Specifications* document indicates the alignment of items with the Florida Standards. It also serves to provide all stakeholders with information about the scope and function of the FSA.

Item Specifications Definitions

Also assesses refers to standard(s) closely related to the primary standard statement.

Clarification statements explain what students are expected to do when responding to the question.

Assessment limits define the range of content knowledge and degree of difficulty that should be assessed in the assessment items for the standard.

Item types describe the characteristics of the question.

Context defines types of stimulus materials that can be used in the assessment items.

- **Context - Allowable** refers to items that may but are not required to have context.
- **Context - No context** refers to items that should not have context.
- **Context - Required** refers to items that must have context.

Item Descriptions:

The Florida Standards Assessments (FSA) are composed of test items that include traditional multiple-choice items and other item types that may be scanned and scored electronically.

Currently, there are six types of items that may appear on paper-based assessments for FSA Mathematics.

Any of the item types may be combined into a single item with multiple parts called a multi-interaction item. For paper-based assessments, the student will interact with the same item type within a single item.

For samples of each of the item types described below, see the FSA Practice Tests.

Paper-Based Item Types – Mathematics

1. **Multiple Choice –** The student is directed to select the one correct response from among four options.
2. **Multiselect –** The student is directed to select all of the correct answers from among a number of options. These items are different from Multiple Choice items, which prompt the student to select only one correct answer.
3. **Editing Task Choice –** The student fills in a bubble to indicate the correct number, word, or phrase that should replace a blank or a highlighted number, word, or phrase.
4. **Selectable Hot Text –** Excerpted sentences from the text are presented in this item type. The student fills in bubbles to indicate which sentences are correct.
5. **Equation Editor** – The student fills in bubbles indicating numbers and mathematical symbols to create a response. Students respond in response grids in which they write their answer in the boxes at the top of the grid, then fill in the corresponding bubble underneath each box.
6. **Matching Item –** This item type presents options in columns and rows. The student is directed to fill in a bubble that matches a correct option from a column with a correct option from a row.

Mathematical Practices:

The Mathematical Practices are a part of each course description for Grades 3-8, Algebra 1, and Geometry. These practices are an important part of the curriculum. The Mathematical Practices will be assessed throughout.

MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Reference Sheets:

- Reference sheets will be available as online references (in a pop-up window). A paper version will be available for paper-based tests.
- Reference sheets with conversions will be provided for FSA Mathematics assessments in Grades 4–8 and EOC Mathematics assessments.
- There is no reference sheet for Grade 3.
- For Grades 4, 6, 7, and Geometry, some formulas will be provided on the reference sheet.
- For Grade 5 and Algebra 1, some formulas may be included with the test item if needed to meet the intent of the standard being assessed.
- For Grade 8, no formulas will be provided; however, conversions will be available on a reference sheet.

Grade	Conversions	Some Formulas
3	No	No
4	On Reference Sheet	On Reference Sheet
5	On Reference Sheet	With Item
6	On Reference Sheet	On Reference Sheet
7	On Reference Sheet	On Reference Sheet
8	On Reference Sheet	No
Algebra 1	On Reference Sheet	With Item
Geometry	On Reference Sheet	On Reference Sheet

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.1*** *Represent and solve problems involving multiplication and division.* **MAFS.3.OA.1.1** Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*	
Assessment Limits	Whole number factors may not exceed 10 x 10. Students may not be required to write an equation to represent a product of whole numbers.	
Calculator	No	
Context	Allowable	
Sample Item		Item Type
Tom told Mary he planted 48 flowers in the rectangular-shaped garden. Which sentence could Mary use to describe how the flowers were planted? A. Tom planted 24 rows of 24 flowers. B. Tom planted 4 rows of 24 flowers. C. Tom planted 40 rows of 8 flowers. D. Tom planted 8 rows of 6 flowers.		Multiple Choice
See Appendix A for the Practice Test item aligned to this standard.		

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.1*** *Represent and solve problems involving multiplication and division.* **MAFS.3.OA.1.2** Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
Assessment Limits	Whole number quotients and divisors may not exceed 10. Items may not require students to write an equation to represent a quotient of whole numbers.
Calculator	No
Context	Allowable
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.1*** *Represent and solve problems involving multiplication and division.* **MAFS.3.OA.1.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	
Assessment Limits	All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts. Items may not contain more than one unknown per equation. Items may not contain the words “times as much/many.”	
Calculator	No	
Context	Required	
Sample Item		Item Type
Craig has 72 grapes. He separates the grapes into 9 equal groups. How many grapes are in each group?		Equation Editor
See Appendix A for the Practice Test item aligned to this standard.		

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.1*** *Represent and solve problems involving multiplication and division.* **MAFS.3.OA.1.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \_ \div 3$, $6 \times 6 = ?$*
Assessment Limits	All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts. Items must provide the equation. Students may not be required to create the equation.
Calculator	No
Context	No context

Sample Item	Item Type
A division problem is shown. $9 = \square \div 3$ What is the value of the unknown number?	Equation Editor
What is the value of the unknown number in the equation $72 \div \square = 9$?	Equation Editor
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.2*** *Understand properties of multiplication and the relationship between multiplication and division.* **MAFS.3.OA.2.5** Apply properties of operations as strategies to multiply and divide. Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)
Assessment Limit	All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts. Items may contain no more than two properties in an equation (e.g., a x (b + c) = (a x b) + (c x a)).
Calculator	No
Context	No context

Sample Item	Item Type
An equation is shown. 4 x 9 = 9 x □ What is the missing value? A. 4 B. 5 C. 9 D. 13	Multiple Choice
Select all the expressions that could be used to find 6 x 10. A. 10 x 6 B. 6 x (2 x 5) C. 6 + (2 x 5) D. (6 x 2) x 5 E. (6 x 8) x (6 x 2)	Multiselect
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.2*** *Understand properties of multiplication and the relationship between multiplication and division.* **MAFS.3.OA.2.6** Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*
Assessment Limit	All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts.
Calculator	No
Context	No context
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.3*** *Multiply and divide within 100.* **MAFS.3.OA.3.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	
Assessment Limit	All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts.	
Calculator	No	
Context	No context	
Sample Item		Item Type
Multiply: 8 x 2		Equation Editor
See Appendix A for the Practice Test item aligned to this standard.		

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.4*** *Solve problems involving the four operations, and identify and explain patterns in arithmetic.* **MAFS.3.OA.4.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
Assessment Limits	Adding and subtracting is limited to whole numbers within 1,000. All values in multiplication or division situations may not exceed whole number multiplication facts of 10 x 10 or the related division facts. Students may not be required to perform rounding in isolation. Equations may be provided in items.
Calculator	No
Context	Required

Sample Item	Item Type
A bookstore has 4 boxes of books. Each box contains 20 books. On Monday, the bookstore sold 16 books. How many books remain to be sold?	Equation Editor
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.OA*** *Operations and Algebraic Thinking* ***MAFS.3.OA.4*** *Solve problems involving the four operations, and identify and explain patterns in arithmetic.* **MAFS.3.OA.4.9** Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
Assessment Limits	Adding and subtracting is limited to whole numbers within 1,000. All values in items may not exceed whole number multiplication facts of 10 x 10 or the related division facts.
Calculator	No
Context	No context
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.NBT*** *Number and Operations in Base Ten* ***MAFS.3.NBT.1*** *Use place value understanding and properties of operations to perform multi-digit arithmetic.* **MAFS.3.NBT.1.1** Use place value understanding to round whole numbers to the nearest 10 or 100.	
Assessment Limit	Items may contain whole numbers up to 1,000.	
Calculator	No	
Context	No context	
Sample Item		Item Type
What value is 846 rounded to the nearest 100?		Equation Editor
A. Round 846 to the nearest hundred. B. Round 846 to the nearest ten.		Equation Editor
Select all the numbers that will equal 800 when rounded to the nearest hundred. A. 739 B. 751 C. 792 D. 805 E. 850		Multiselect
See Appendix A for the Practice Test item aligned to this standard.		

Content Standard	***MAFS.3.NBT*** *Number & Operations in Base Ten* ***MAFS.3.NBT.1*** *Use place value understanding and properties of operations to perform multi-digit arithmetic.* **MAFS.3.NBT.1.2** Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	
Assessment Limits	Addends and sums are less than or equal to 1,000. Minuends, subtrahends, and differences are less than or equal to 1,000. Items may not require students to name specific properties.	
Calculator	No	
Context	No context	
Sample Item		Item Type
What is the sum of 153, 121, and 178?		Equation Editor
See Appendix A for the Practice Test item aligned to this standard.		

<table>
<tr><td>Content Standard</td><td colspan="2">MAFS.3.NBT Number & Operations in Base Ten

MAFS.3.NBT.1 Use place value understanding and properties of operations to perform multi-digit arithmetic.

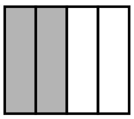
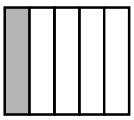
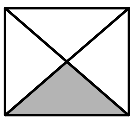
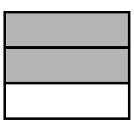
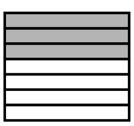
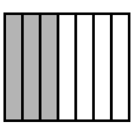
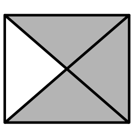
MAFS.3.NBT.1.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.</td></tr>
<tr><td>Assessment Limit</td><td colspan="2">Items may not require students to name specific properties.</td></tr>
<tr><td>Calculator</td><td colspan="2">No</td></tr>
<tr><td>Context</td><td colspan="2">Allowable</td></tr>
<tr><td colspan="2">Sample Item</td><td>Item Type</td></tr>
<tr><td colspan="2">What is the product of 7 and 50?</td><td>Equation Editor</td></tr>
<tr><td colspan="2">Select all expressions that have a product of 320.

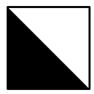
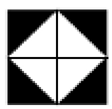
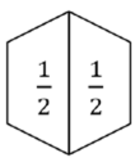
A. 3 x 90
B. 4 x 80
C. 5 x 60
D. 8 x 40
E. 9 x 30</td><td>Multiselect</td></tr>
<tr><td colspan="2">Mr. Engle has 10 tables in his classroom. There are 3 students at each table. Each student has 6 glue sticks.

A. How many glue sticks are at each table?

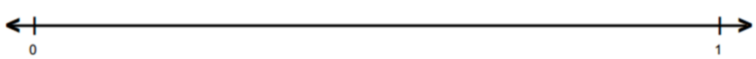
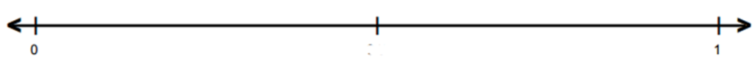
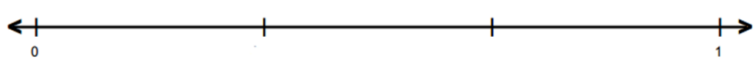
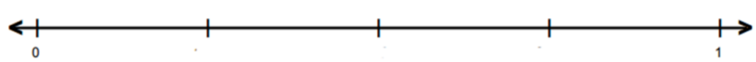
B. How many glue sticks do all of Mr. Engle’s students have combined?</td><td>Equation Editor</td></tr>
<tr><td colspan="3">See Appendix A for the Practice Test item aligned to this standard.</td></tr>
</table>

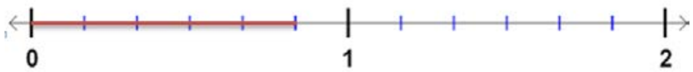
Content Standard	***MAFS.3.NF*** *Number and Operations — Fractions* ***MAFS.3.NF.1*** *Develop understanding of fractions as numbers.* **MAFS.3.NF.1.1** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by *a* parts of size $\frac{1}{b}$. Also Assesses: ***MAFS.3.G*** *Geometry* ***MAFS.3.G.1*** *Reason with shapes and their attributes.* **MAFS.3.G.1.2** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as* $\frac{1}{4}$ *of the area of the shape*.
Assessment Limits	Denominators are limited to 2, 3, 4, 6, and 8. Items are limited to combining or putting together unit fractions rather than formal addition or subtraction of fractions. Maintain concept of a whole as one entity that can be equally partitioned in various ways when working with unit fractions. Fractions *a*/*b* can be fractions greater than 1. Items may not use the term “simplify” or “lowest terms” in directives. Items may not use number lines. Shapes may include: quadrilateral, equilateral triangle, isosceles triangle, regular hexagon, regular octagon, and circle.
Calculator	No
Context	Allowable for 3.NF.1.1; no context for 3.G.1.2

Sample Item	Item Type
Each model shown has been shaded to represent a fraction. Which model shows $\frac{1}{4}$ shaded? A.  B.  C.  D. 	Multiple Choice
Each model shown has been shaded to represent a fraction. Which model shows $\frac{3}{4}$ shaded? A.  B.  C.  D. 	Multiple Choice

Sample Item	Item Type
A figure is shown. Part of the figure is shaded.  Which fraction of the total area of the figure does the shaded part represent?	Equation Editor
A figure is shown. Part of the figure is shaded.  Which fraction of the total area of the figure does the shaded part represent?	Equation Editor
Each shape shown represents $\frac{1}{2}$ of a whole.  How many shapes should be put together to make $\frac{5}{2}$?	Equation Editor
See Appendix A for the Practice Test item aligned to a standard in this group.	

Content Standard	***MAFS.3.NF*** *Number and Operations – Fractions* ***MAFS.3.NF.1*** *Develop understanding of fractions as numbers.* **MAFS.3.NF.1.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **MAFS.3.NF.1.2a** Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line. **MAFS.3.NF.1.2b** Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off *a* lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.
Assessment Limits	Denominators are limited to 2, 3, 4, 6, and 8. Number lines in MAFS.3.NF.1.2b items may extend beyond 1. Only whole number marks may be labeled on number lines.
Calculator	No
Context	No context

Sample Item	Item Type
Which number line is divided into thirds? A.  B.  C.  D. 	Multiple Choice

<table>
<tr><th>Sample Item</th><th>Item Type</th></tr>
<tr><td>What fraction is represented by the total length marked on the number line shown?

</td><td>Equation Editor</td></tr>
<tr><td>What fraction is represented by the length marked on the number line shown?

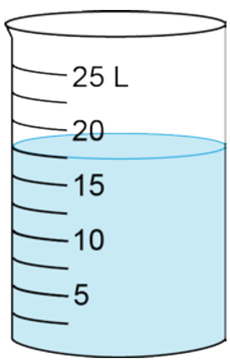
</td><td>Equation Editor</td></tr>
<tr><td colspan="2">See Appendix A for the Practice Test item aligned to a standard in this group.</td></tr>
</table>

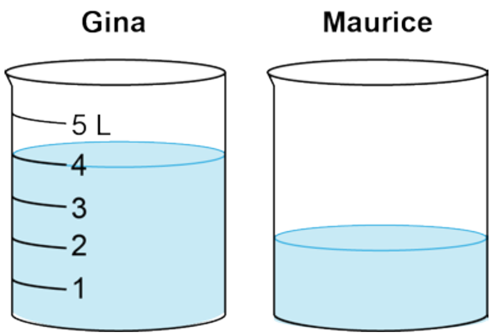
Content Standard	***MAFS.3.NF*** *Number and Operations — Fractions* ***MAFS.3.NF.1*** *Develop understanding of fractions as numbers.* **MAFS.3.NF.1.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **MAFS.3.NF.1.3a** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **MAFS.3.NF.1.3b** Recognize and generate simple equivalent fractions, e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6} = \frac{2}{3}$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. **MAFS.3.NF.1.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 =* $\frac{3}{1}$*; recognize that* $\frac{6}{1}$ *= 6; locate* $\frac{4}{4}$ *and 1 at the same point of a number line diagram.* **MAFS.3.NF.1.3d** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
Assessment Limits	Denominators are limited to 2, 3, 4, 6, and 8. Fractions must reference the same whole entity that can be equally partitioned, unless item is assessing MAFS.3.NF.1.3d. Items may not use the term “simplify” or “lowest terms” in directives. Visual models may include number lines and area models. Only whole number marks may be labeled on number lines.
Calculator	No
Context	Allowable
See Appendix A for the Practice Test item aligned to a standard in this group.	

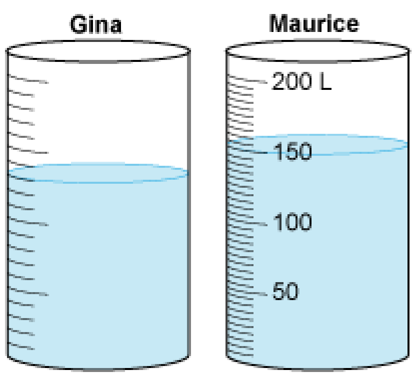
Content Standard	***MAFS.3 MD*** *Measurement and Data* ***MAFS.3.MD.1*** *Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.* **MAFS.3.MD.1.1** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
Assessment Limits	Clocks may be analog or digital. Digital clocks may not be used for items that require telling or writing time in isolation.
Calculator	No
Context	Allowable

Sample Item	Item Type
Alex arrives at the grocery store at 5:17 p.m. He leaves at 5:59 p.m. How many minutes was he in the grocery store?	Equation Editor
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.MD*** *Measurement and Data* ***MAFS.3.MD.1*** *Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.* **MAFS.3.MD.1.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.
Assessment Limits	Items may not contain compound units such as cubic centimeters (cm3) or finding the geometric volume of a container. Items may not require multiplicative comparison (e.g., “times as much/many”). Unit conversions are not allowed. Units are not limited to grams, kilograms, and liters.
Calculator	No
Context	Allowable

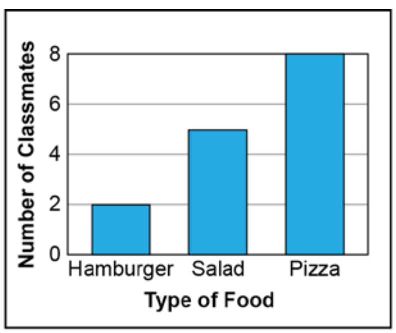
Sample Item	Item Type
How many liters (L) of water are in the following container? 	Equation Editor

<table>
<tr><th>Sample Item</th><th>Item Type</th></tr>
<tr><td>Gina and Maurice have same-sized containers filled with different amounts of water, as shown.


Gina’s container has 4 liters (L) of water. About how much water, in liters (L), does Maurice’s container have?</td><td>Equation Editor</td></tr>
<tr><td>Gina and Maurice have the containers shown.


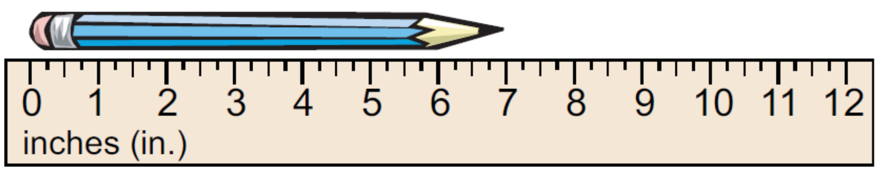
Gina does not know how much water is in her container. Maurice’s container is the same size as Gina’s container. About how much less water, in liters (L), does Gina have than Maurice?</td><td>Equation Editor</td></tr>
<tr><td colspan="2">See Appendix A for the Practice Test item aligned to this standard.</td></tr>
</table>

Content Standard	***MAFS.3.MD*** *Measurement and Data* ***MAFS.3.MD.2*** *Represent and interpret data.* **MAFS.3.MD.2.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets*.
Assessment Limits	The number of data categories are six or fewer. Items must provide appropriate scale and/or key unless item is assessing that feature. Only whole number marks may be labeled on number lines.
Calculator	No
Context	Required

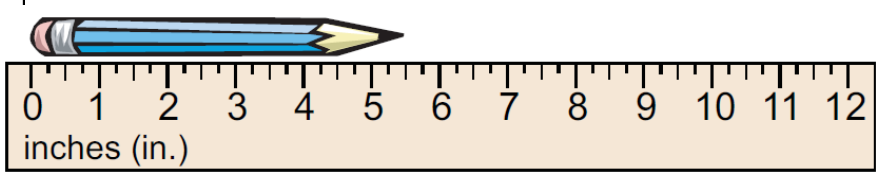
Sample Item	Item Type
John surveys his classmates about their favorite foods, as shown in the bar graph.  How many more classmates prefer pizza over salad?	Equation Editor
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.MD*** *Measurement and Data* ***MAFS.3.MD.2*** *Represent and interpret data.* **MAFS.3.MD.2.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
Assessment Limits	Standard rulers may not be used; only special rulers that are marked off in halves or quarters are allowed. Measurements are limited to inches.
Calculator	No
Context	Allowable

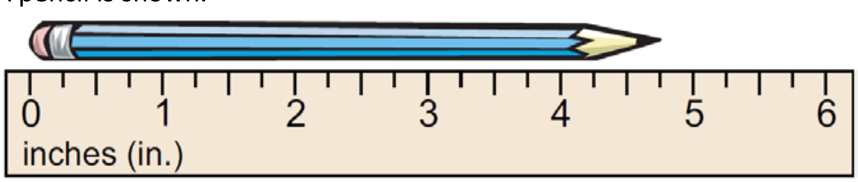
<table>
<tr><th>Sample Item</th><th>Item Type</th></tr>
<tr><td>
A pencil is shown.



What is the length of the pencil to the nearest whole inch?
</td><td>Equation Editor</td></tr>
<tr><td>
A pencil is shown.



What is the length of the pencil to the nearest half inch?
</td><td>Equation Editor</td></tr>
<tr><td>
A pencil is shown.



What is the length of the pencil to the nearest quarter inch?
</td><td>Equation Editor</td></tr>
<tr><td colspan="2">See Appendix A for the Practice Test item aligned to this standard.</td></tr>
</table>

<table>
<tr><td>Content Standard</td><td colspan="2">MAFS.3.MD Measurement and Data

MAFS.3.MD.3 Geometric measurement: understand concepts of area and relate area to multiplication and addition.

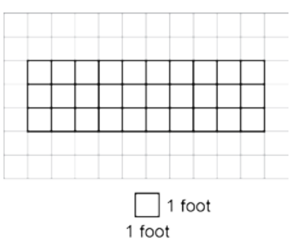
MAFS.3.MD.3.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.

MAFS.3.MD.3.5a A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.

MAFS.3.MD.3.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

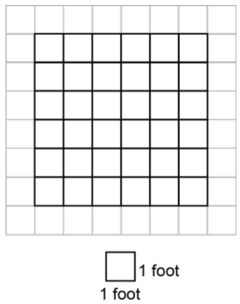
Also Assesses:

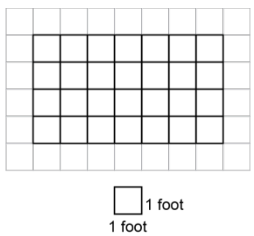
MAFS.3.MD.3.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).</td></tr>
<tr><td>Assessment Limits</td><td colspan="2">Items may include plane figures that can be covered by unit squares.
Items may not include exponential notation for unit abbreviations (e.g., “cm^2”).</td></tr>
<tr><td>Calculator</td><td colspan="2">No</td></tr>
<tr><td>Context</td><td colspan="2">Allowable</td></tr>
<tr><td colspan="2">Sample Item</td><td>Item Type</td></tr>
<tr><td colspan="2">Alex put the tiles shown on his floor.

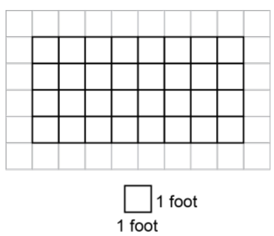


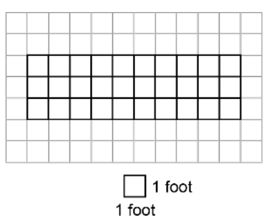
What is the area, in square feet, of Alex’s floor?</td><td>Equation Editor</td></tr>
</table>

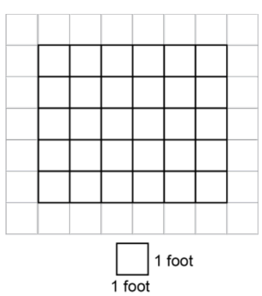
<table>
<tr><th>Sample Item</th><th>Item Type</th></tr>
<tr><td>The area of Alex’s floor is 30 square feet.
Select all the floors that could be Alex’s.

A. 

B. 

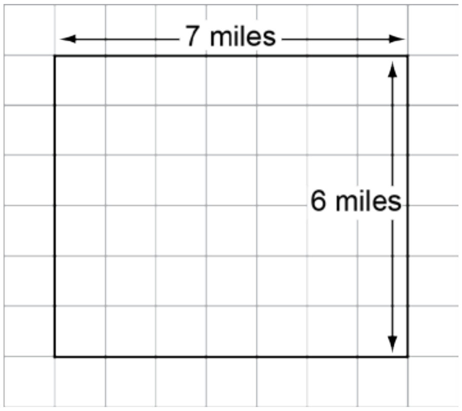
C. 

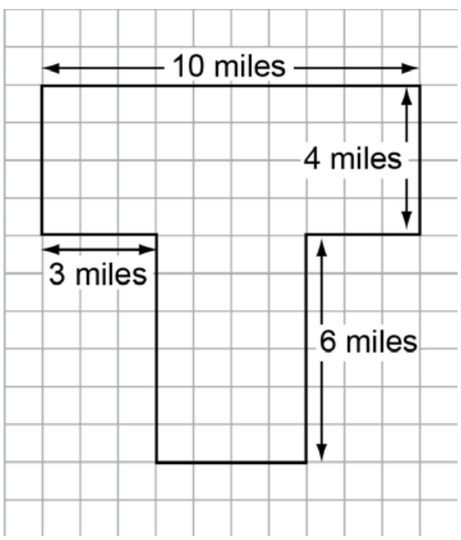
D. 

E. 

</td><td>Multiselect</td></tr>
<tr><td colspan="2">See Appendix A for the Practice Test item aligned to a standard in this group.</td></tr>
</table>

Content Standard	***MAFS.3.MD** Measurement and Data* ***MAFS.3.MD.3** Geometric measurement: understand concepts of area and relate area to multiplication and addition.* **MAFS.3.MD.3.7** Relate area to the operations of multiplication and addition. **MAFS.3.MD.3.7a** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. **MAFS.3.MD.3.7b** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. **MAFS.3.MD.3.7c** Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. **MAFS.3.MD.3.7d** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
Assessment Limits	Figures are limited to rectangles and shapes that can be decomposed into rectangles. Dimensions of figures are limited to whole numbers. All values in items may not exceed whole number multiplication facts of 10 x 10.
Calculator	No
Context	Allowable

<table>
<tr><th>Sample Item</th><th>Item Type</th></tr>
<tr><td>A park is in the shape of the rectangle shown.


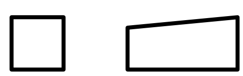
What is the area, in square miles, of the park?</td><td>Equation Editor</td></tr>
<tr><td>A park is shown.


What is the area, in square miles, of the park?</td><td>Equation Editor</td></tr>
<tr><td colspan="2">See Appendix A for the Practice Test item aligned to a standard in this group.</td></tr>
</table>

Content Standard	***MAFS.3.MD*** *Measurement and Data* ***MAFS.3.MD.4*** *Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.* **MAFS.3.MD.4.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
Assessment Limits	For items involving area, only polygons that can be tiled with square units are allowable. Dimensions of figures are limited to whole numbers. All values in items may not exceed whole number multiplication facts of 10 x 10. Items are not required to have a graphic, but sufficient dimension information must be given.
Calculator	No
Context	Required

Sample Item	Item Type
Ben is planning a garden. Which measurement describes the perimeter of his garden? A. the length of fence he will need B. the amount of soil he will need C. the number of seeds he will buy D. the length of the garden multiplied by the width	Multiple Choice
Ben has a rectangular garden with side lengths of 2 feet and 5 feet. What is the perimeter, in feet, of Ben's garden?	Equation Editor
See Appendix A for the Practice Test item aligned to this standard.	

Content Standard	***MAFS.3.G*** *Geometry* ***MAFS.3.G.1*** Reason with shapes and their attributes. **MAFS.3.G.1.1** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
Assessment Limits	Shapes may include two-dimensional shapes and the following quadrilaterals: rhombus, rectangle, square, parallelogram, and trapezoid. Items may reference and/or rely on the following attributes: number of sides, number of angles, whether the shape has a right angle, whether the sides are the same length, and whether the sides are straight lines. Items may not use the terms “parallel” or “perpendicular.” Items that include trapezoids must consider both the inclusive and exclusive definitions. Items may not use the term "kite" but may include the figure.
Calculator	No
Context	No context

Sample Item	Item Types
A square and a trapezoid are shown below.  Which attributes do these shapes always have in common? A. number of sides B. side lengths C. angle measures D. right angles E. number of angles	Multiselect
Select the shapes that are always quadrilaterals and not rectangles. A. rhombus B. parallelogram C. triangle D. trapezoid E. square	Multiselect

Sample Item	Item Type
What is the name of a shape that is a quadrilateral but not a rectangle? A. hexagon B. parallelogram C. square D. triangle	Multiple Choice
See Appendix A for the Practice Test item aligned to this standard.	

Appendix A

The chart below contains information about the standard alignment for the items in the Grade 3 Mathematics FSA Computer-Based Practice Test at https://fsassessments.org/students-and-families/practice-tests.

Content Standard	Item Type	Paper-Based Practice Test Item Number
MAFS.3.OA.1.1	Multiple Choice	12
MAFS.3.OA.1.2	Multiselect	5
MAFS.3.OA.1.3	Equation Editor	20
MAFS.3.OA.1.4	Multiple Choice	1
MAFS.3.OA.2.5	Multiple Choice	18
MAFS.3.OA.2.6	Multiple Choice	13
MAFS.3.OA.3.7	Equation Editor	8
MAFS.3.OA.4.8	Multi-Interaction: Multiple Choice and Multiple Choice	21
MAFS.3.OA.4.9	Multiple Choice	23
MAFS.3.NBT.1.1	Matching Item	3
MAFS.3.NBT.1.2	Multiselect	22
MAFS.3.NBT.1.3	Equation Editor	15
MAFS.3.NF.1.2b	Equation Editor	2
MAFS.3.NF.1.3c	Multiselect	11
MAFS.3.MD.1.1	Multiple Choice	14
MAFS.3.MD.1.2	Equation Editor	10
MAFS.3.MD.2.3	Multiple Choice	6
MAFS.3.MD.2.4	Multiple Choice	19
MAFS.3.MD.3.6	Multiple Choice	16
MAFS.3.MD.3.7d	Multiple Choice	4
MAFS.3.MD.4.8	Equation Editor	7
MAFS.3.G.1.1	Editing Task Choice	9
MAFS.3.G.1.2	Editing Task Choice	17

Appendix B: Revisions

Page(s)	Revision	Date
3	Revisions for paper-based testing (PBT) grades.	September 2018
9-38	Sample items not compatible with paper-based testing (PBT) removed.	September 2018
28	Revision of assessment limits.	September 2018
29	Sample item revised.	September 2018
39	Appendix A updated to show Fall 2018 Practice Test information.	September 2018