DRAFT

Grade 3 Mathematics Item Specifications

Florida
Standards Assessments

The draft Florida Standards Assessment (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.

Acceptable response mechanisms describe the characteristics from which a student must answer a question.

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

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	Products within 100. Whole number factors.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response Multi-Select Response Natural Language Response Table Response
Context	Allowable

Example	
Context	Use numbers that have 4-5 factors other than 1.
Context easier	Use numbers that have 2-3 factors other than 1.
Context more difficult	Use numbers that have more than 5 factors other than 1 and more than one design for the flower arrangement.

Sample Item Stem	Response Mechanism	Notes, Comments
Tom planted 5 rows of flowers with 7 flowers in each row. Write a multiplication equation that shows the number of flowers in Tom's rectangular-shaped garden.	Equation Response	
Tom told Mary he planted 4 x 5 flowers. How might Mary describe the arrangement of flowers in Tom's rectangular-shaped garden?	Natural Language Response	
Tom told Mary he planted 48 flowers in the rectangular-shaped garden. Select the correct sentence Mary could use to describe how the flowers were planted.	Multiple Choice Response	

<table>
<tr>
<td>Tom has to plant 36 flowers in the garden. Complete the table to show 3 different designs for how Tom could plant the flowers.
<table>
<tr><td></td><td>Number of Rows</td><td>Number of Columns</td></tr>
<tr><td>Design 1</td><td></td><td></td></tr>
<tr><td>Design 2</td><td></td><td></td></tr>
<tr><td>Design 3</td><td></td><td></td></tr>
</table>
</td>
<td>Table Response</td>
<td></td>
</tr>
</table>

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	Dividends up to 100. Whole number dividends. Whole number quotients.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response — Drag and Drop Multiple Choice Response Multi-Select Response Natural Language Response
Context	Allowable
Example	
Context	Use numbers for the dividend that are between 20 and 50.
Context easier	Use smaller numbers when expressing the dividends (e.g., dividends less than 20).
Context more difficult	Use larger numbers when expressing the dividends. (e.g., dividends larger than 50 but not greater than 100).

Sample Item Stem	Response Mechanism	Notes, Comments
Heidi has 12 apples and 6 bags. She places an equal number of apples in each bag. Drag apples to show how many apples are in each bag.	Graphic Response – Drag and Drop	
Select all of the situations that can be represented by 56 ÷ 8. o Heidi has 56 apples and places an equal number of apples into 8 baskets. o Heidi has 56 apples and gives 8 of them to a friend. o Heidi has 56 apples and her friend gives her 8 more. o Heidi has 8 apples and needs more apples to deliver to a customer. o Heidi picks 56 apples each day for 8	Multi-Select Response	

days.		

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 numbers must be 100 or less. Use whole numbers only. Give only one unknown per equation. Do not use the words "times as much/many"
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and Drop, Hot Spot Multiple Choice Response Multi-Select Response
Context	Required

Example	
Context	Use products or dividends with factors of 3, 4, 6 or 9.
Context easier	Use products or dividends with more familiar fact families (e.g. Where 2, 5 or 10 is a factor or divisor).
Context more difficult	Use products or dividends with less familiar fact families (where 7 or 8 is a factor or divisor).

Sample Item Stem	Response Mechanism	Notes, Comments
Craig has 6 groups of grapes. Each group has 5 grapes. How many grapes does Craig have?	Equation Response	
Craig has 72 grapes. He separates the grapes into 9 equal groups. How many grapes are in each group?	Equation Response	
Craig has 54 grapes in total. Create three multiplication problems that model three different groups of grapes.	Equation Response	

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 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?*
Assessment Limits	Product is less than 100. Whole number factors and quotients. Equation must be given, and not created.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response
Context	No context

Example	
Context	The product or dividend is a number between 20 and 50.
Context easier	The product or dividend is a number from 0-19. A problem where the unknown is a product or a quotient.
Context more difficult	The product or dividend is a number from 51-100.

Sample Item Stem	Response Mechanism	Notes, Comments
A multiplication problem is shown. 6 x 3 = ? What is the value of the unknown number?	Equation Response	
A division problem is shown. 9 equals ___ divided by 3 What is the value of the unknown number?	Equation Response	
A division problem is shown. 72 x ? = 9 What is the value of the unknown number?	Equation Response	

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 Limits	Whole numbers. Product or dividend must be 100 or less.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Hot Spot Matching Item Response Multiple Choice Response Multi-Select Response
Context	No context

Example	
Context	No context
Context easier	Use of the Commutative Property with two factors.
Context more difficult	Use of multiple properties to determine an equivalent expression.

Sample Item Stem	Response Mechanism	Notes, Comments
An equation is shown. 4 + 9 = 9 + □ What is the missing value? A. 4 B. 5 C. 9 D. 13	Multiple Choice Response	
Drag numbers to the boxes to create a **different** expression that is equal to (3 + 4) + 5. (3 + 4) + 5 = (□ + □) + □	Graphic Response – Hot Spot	

Which expression is equal to 7 x (2 x 3)? A. (7 x 2) + (7 x 3) B. (7 + 2) x (7 + 3) C. (7 + 2) x 3 D. (7 x 2) x (7 x 3)	Multiple Choice Response	
Select all the expressions that could be used to find 6 x 10. o 6 x (2 x 5) o 6 + (2 x 5) o (6 x 2) x 5 o 10 x 6 o (6 x 8) x (6 x 2)	Multi-Select Response	

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 Limits	Whole numbers. Quotients up to 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and Drop Multiple Choice Response Multi-Select Response
Context	No context

Example	
Context	Choosing an equivalent equation from a list of options.
Context easier	When given a partial equation, students fill in the blanks to create an equivalent equation.
Context more difficult	Creating an equivalent equation based on a given equation.

Sample Item Stem	Response Mechanism	Notes, Comments
Drag numbers to the boxes to create two true multiplication equations that could be used to solve 10 ÷ 5 = □. □ x 5 = □ 5 x □ = □ Palette objects: 5, 2, 10	Graphic Response – Drag and Drop	
Create a multiplication equation you could use to solve 21 ÷ 3 = □.	Equation Response	

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 Limits	Whole numbers. Multiply and divide within 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response Multi-Select Response Table Response
Context	No context
Example	
Context	Solve a given multiplication or division problem with a product or dividend from between 20 and 50.
Context easier	Solve a given multiplication or division problem with a product or dividend from 0-20.
Context more difficult	Solve a given multiplication or division problem with a product or dividend from 50-100.

Sample Item Stem	Response Mechanism	Notes, Comments
Solve: • 8 x 2 = ? • 18 ÷ 6 = ?	Equation Response	
Select the factor pairs that equal 24. o 3 and 8 o 4 and 8 o 6 and 3 o 7 and 4 o 6 and 4	Multi-Select Response	
Complete the table to find the quotients. Problem / Quotient 64 ÷ 8 63 ÷ 9 56 ÷ 7	Table Response	

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	Whole numbers. Adding and subtracting whole numbers within 1,000. Multiplying and dividing whole numbers within 100. Students will not be required to perform rounding in isolation (MAFS.3.NBT.1.1).
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response Natural Language Response
Context	Required

Example

Context	Students solve a two-step equation for a given problem. Setting up an equation is not required but may be provided.
Context easier	Students are given a diagram to show the number of books sold by the bookstore in a given week. Example:

Monday	Tuesday	Wednesday	Thursday	Friday	Total
40	60				250

Context more difficult	Students are given facts and a question to help solve a problem. Questions reach the higher end of the content limits (sum to 1,000 / products to 100).

Sample Item Stem	Response Mechanism	Notes, Comments
On Monday, the bookstore sold 75 books. On Tuesday, the bookstore sold 125 books. The bookstore must sell 500 books by Friday. How many more books must the bookstore sell?	Equation Response	
A bookstore has 4 boxes of 20 books in each box. On Monday, the bookstore sold 16 books. How many books remain to be sold?	Equation Response	

On Monday, the bookstore sold 75 books. On Tuesday, the bookstore sold 125 books. The bookstore must sell 500 books by Friday. Write an equation that can be used to find how many more books, *b*, the bookstore must sell.	Equation Response	

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 whole numbers within 1,000. Multiplying and dividing whole numbers within 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response — Hot Spot Multiple Choice Response Multi-Select Response Table Response
Context	No context

Example	
Context	A pattern is shown. The rule for a pattern is subtraction or multiplication.
Context easier	Examine multiples of 2, 5, or 10. Present the pattern in the context of an addition/multiplication table. The rule for a pattern is addition.
Context more difficult	Examine multiples of 7 or 8. Present the pattern as a list of numbers, not in the context of an addition/multiplication table. The rule for a pattern is division.

Sample Item Stem	Response Mechanism	Notes, Comments
A partial multiplication table (6 x 6) is given. Enter the multiples of 5 to complete the table.	Table Response	
A multiplication table is given (6 x 10). Enter the multiples for 6 to complete the table.	Table Response	
A multiplication table is given (10 x 10). Enter the multiples for 8 to complete the table.	Table Response	
A multiplication table is shown. Which statement correctly describes finding multiples of 6?	Multiple Choice Response	

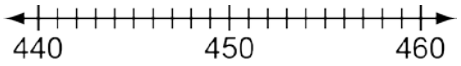
Content Standard	***MAFS.3.NBT*** *Number and Operations in Base Ten* ***MAFS.3.NBT.1*** Use place value understanding and properties of operations to perform multi-digit arithmetic. **MAFS.3.NBT.1.1** Use place value understanding to round whole numbers to the nearest 10 or 100.
Assessment Limits	Whole numbers up to 1,000 Avoid situations where the place the student rounded to is ambiguous. For example, asking a student to round 697 to the nearest ten is not a good item, as the student would get the exact same answer if he or she mistakenly rounded to the nearest hundred.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing Matching Item Response Multi-Select Response Table Response
Context	No context

Example	
Context	Round three-digit whole numbers to the nearest ten.
Context easier	Rounding to the nearest hundred.
Context more difficult	Rounding one number to the nearest ten and also to the nearest hundred.

Sample Item Stem	Response Mechanism	Notes, Comments
What value is 846 rounded to the nearest 100?	Equation Response	
Match each number with the value of the number rounded to the nearest 10. (180, 190 / 181, 186, 194)	Table Response	
A. Round 846 to the nearest hundred. Enter your answer in the first response box. B. Round 846 to the nearest ten. Enter your answer in the second response box.	Equation Response	

<table>
<tr>
<td>Which numbers will equal 800 when rounded to the nearest hundred? Select all possible answers.</td>
<td>Multi-Select Response</td>
<td></td>
</tr>
<tr>
<td>An incomplete table is shown.

<table><tr><th>Original Number</th><th>Rounded to Nearest Ten</th></tr><tr><td></td><td>100</td></tr><tr><td></td><td>150</td></tr><tr><td></td><td>190</td></tr></table>
Complete the table by filling in the missing original numbers with possible values.</td>
<td>Table Response</td>
<td></td>
</tr>
<tr>
<td>Plot points on the number line to represent all values that round to 500 when rounded to the nearest hundred and 450 when rounded to the nearest ten.

 
</td>
<td>Graphic Response – Drawing/Graphing</td>
<td></td>
</tr>
</table>

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.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multi-Select Response
Context	No context

Example	
Context	Add and subtract more than two values with no borrowing or carrying. Add and subtract two values including borrowing or carrying.
Context easier	Add and subtract values two values with no borrowing or carrying.
Context more difficult	Add and subtract numbers using 3-digit numbers where the student will borrow or carry multiple times. Increase the number of values being added and/or subtracted.

Sample Item Stem	Response Mechanism	Notes, Comments
What is the sum of 153 and 121?	Equation Response	
Select all expressions that are equal to 324. o 372 - 48 o 660 - 346 o 119 + 215 o 728 - 404 o 216 + 108	Multi-Select Response	
What is the sum of 153, 121, and 178?	Equation Response	

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.1.3** 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.
Assessment Limits	*N/A*
Calculator	No
Acceptable Response Mechanisms	Equation Response Matching Item Response Multi-Select Response
Context	Allowable

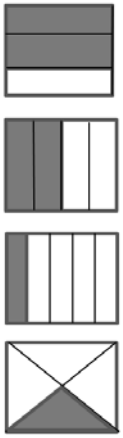
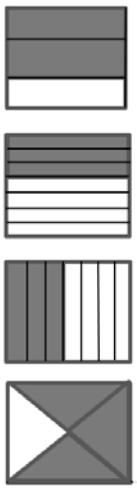
Example	
Context	Multiply a one-digit number by 20 or 50 (parallel to skip counting by 2s, and 5s in earlier grades).
Context easier	Multiply a one-digit number by 10 (parallel to skip counting by 10s in earlier grades). The one-digit number and the multiple of 10 have the same digit in the ones and tens place, respectively.
Context more difficult	Multiply a one-digit number by 30, 40, 60, 70, 80, or 90 (parallel to skip counting, which becomes more difficult with larger single digit whole numbers).

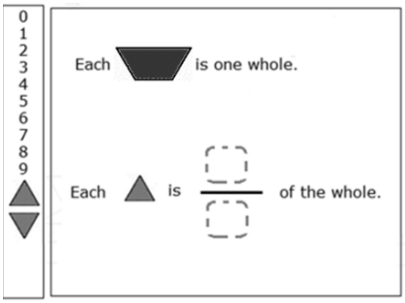
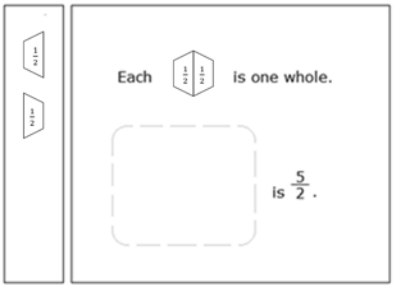
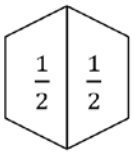
Sample Item Stem	Response Mechanism	Notes, Comments
Multiply 3 x 10.	Equation Response	
Multiply 9 x 90.	Equation Response	
Find the product of 7 x 50.	Equation Response	
Select all expressions that have a product of 320. o 3 x 90 o 4 x 80 o 5 x 60 o 8 x 40 o 9 x 30	Multi-Select Response	
Ms. Yost has 10 boxes of markers. Each box contains 5 markers. How many markers does Ms. Yost have in total?	Equation Response	

Mr. Engle has 10 tables in his classroom. There are 3 students at each table. Each student has 8 glue sticks. ▪ How many glue sticks are at each table? ▪ How many glue sticks do Mr. Engle's students have in total?	Equation Response	

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 $\frac{1}{b}$.
Assessment Limits	Denominators limited to 2, 3, 4, 6, and 8. 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. Limit usage of the words "numerator" and "denominator" in items—focus should not be on assessing vocabulary terms. Fractions *a*/*b* can be improper fractions and students should not be guided to put fractions in lowest terms or to simplify. Items may not use number lines (MAFS.3.NF.1.2).
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and Drop, Drawing/Graphing, Hot Spot Multiple Choice Response Multi-Select Response Table Response

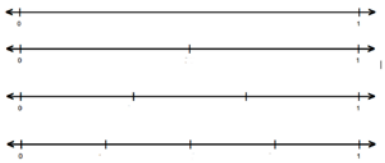
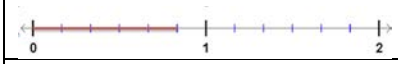
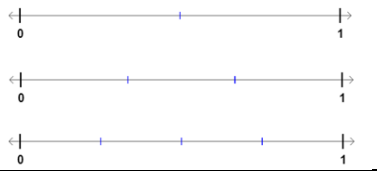
Context	Allowable
Example	
Context	Equally partitioned whole objects with any orientation: • Unit fractions or non-unit fractions less than one with denominators 2, 3, 4, 6, and 8 • Non-unit fractions greater than one limited to halves and fourths
Context easier	Identify unit fractions using: • Easy to distinguish models such as $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$
Context more difficult	Identify fractions using a variety of complex models that may include: • Any fraction (not necessarily unit) less than 1 or other fractions greater than 1 with denominator 3, 6 or 8 • Within a context • Repeated unit fractions

Sample Item Stem	Response Mechanism	Notes, Comments
Each model shown has been shaded to represent a fraction. Which model shows $\frac{1}{4}$ shaded? 	Multiple Choice Response	
Each model shown has been shaded to represent a fraction. Which model shows $\frac{3}{4}$ shaded? 	Multiple Choice Response	

The model shown represents one whole. Use the triangles to see how many equal parts the model can be divided into. Place numbers in the boxes to show the fraction of the whole each triangle represents. 	Graphic Response – Drag and Drop	
Each shape shown represents $\frac{1}{2}$ of a whole. Drag the shapes into the box to show $\frac{5}{2}$. 	Graphic Response – Drag and Drop	
Each shape shown represents $\frac{1}{2}$ of a whole.  How many shapes should be put together to make $\frac{5}{2}$?	Equation Response	

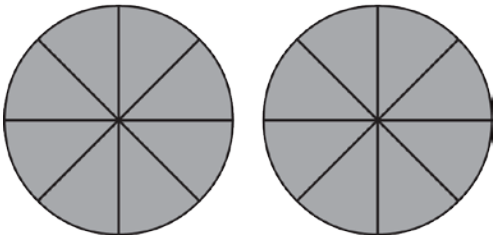
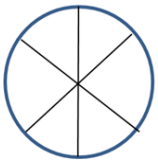
Jan and Laura have a total of 3 same-sized cookies they want to divide equally between the two of them. They divide each cookie in half as shown.  What fraction of the cookies should each girl receive?	Equation Response	

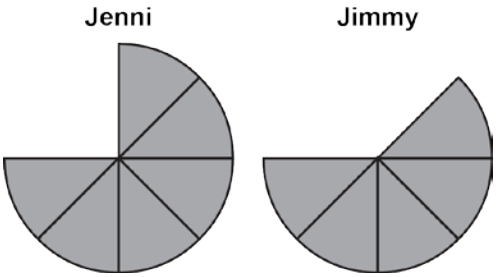
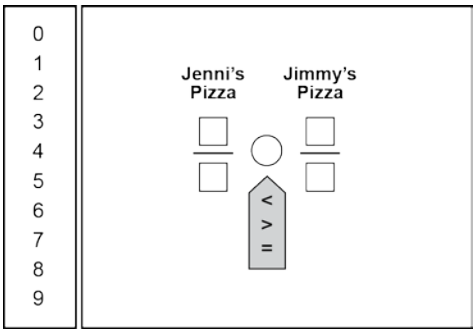
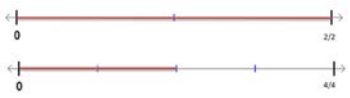
Content Standard	***MAFS.3.NF*** *Number and Operations – Fractions* ***MAFS.3.NF.1*** *Develop understanding of fractions as numbers.* **MAFS.3.NF.1.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **MAFS.3.NF.1.2a** Represent a fraction $\frac{1}{b}$ 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 limited to 2, 3, 4, 6, 8. Models restricted to number lines starting at 0. • Part A: number line interval from 0 to 1. • Part B: number lines can extend from 0 to 1+.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and drop, Drawing/Graphing, Hot Spot Multiple Choice Response Multi-Select Response
Context	No context
Example	
Context	Recognize and represent unit fractions and non-unit fractions on number lines: • Number lines limited to the interval 0 to 2 • Unit fractions and non-unit fractions less than 1 with denominators of 2, 3, 4, 6, 8 • Non-unit fractions greater than 1 limited to halves and fourths • 1 -2 fractions represented or referenced in the item
Context easier	Given number lines limited to the interval 0 to 1 with scale increments of halves, thirds, and fourths. Unit fractions and non-unit fractions less than 1 limited to $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$. Only 1 fraction represented or referenced in the item.
Context more difficult	Number lines can extend beyond the interval 0 to 2. Any fraction less than or greater than 1 with denominator 2, 3, 4, 6 or 8. More than 2 fractions may be represented or referenced in the item.

Sample Item Stem	Response Mechanism	Notes, Comments
Which number line is divided into thirds? 	Multiple Choice Response	
Which fraction is represented by the total length marked on the number line shown? 	Equation Response	
What fraction is represented by the length marked on the number line shown? 	Equation Response	
What fraction is represented by the total length marked on the number line? 	Equation Response	
Look at the number lines shown. Select the number line that can be used to correctly plot the fraction $\frac{3}{4}$. Then, correctly plot the fraction on the selected number line. 	Graphic Response – Drag and Drop, Hot Spot	

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 of 2, 3, 4, 6, 8. Fractions must refer to the same whole unless intent of item is to assess reasoning about wholes. Vocabulary: lowest terms or simplify should not be used. Ordering fractions: limit to a maximum of 2. Visual models may include number lines and area models (circles, rectangles, regular polygons—see shapes from geometry standards).
Calculator	No
Acceptable Response Mechanisms	Graphic Response — Drag and Drop, Drawing/Graphing, Hot Spot Multiple Choice Response Multi-Select Response Table Response Matching Item Response
Context	Allowable
Example	
Context	Comparing fractions, fractional models, or situations involving fractional quantities: • Like denominators of 1, 2, 3, 4, 6 & 8 • Unlike denominators limited to 1, 2 & 4
Context easier	Compare fractions or fraction models with: • Like denominators limited to 1, 2, 3, 4 • Frame in terms of what is used

Context more difficult	Compare fractions or fraction models with: • Like or unlike denominators of 1, 2, 3, 4, 6 & 8 • Frame in terms of what is remaining or left over

Sample Item Stem	Response Mechanism	Notes, Comments
Jenni and Jimmy's equal-sized pizzas are each cut into 8 pieces. Jenni eats 2 slices of her pizza, and Jimmy eats 3 slices of his pizza. Jenni Jimmy  Click on Jenni's pizza to show how much she ate. Click on Jimmy's pizza to show how much he ate. Drag <, >, or = to make a true statement.	Graphic Response – Hot Spot	
In the table shown, enter the whole number that is equal to each fraction. **Fraction** $\frac{2}{2}$ $\frac{6}{2}$ $\frac{4}{2}$ $\frac{8}{2}$ **Whole** ___ ___ ___ ___	Table Response	
Click on the regions in the model to show a fraction less than $\frac{3}{6}$. 	Graphic Response – Hot Spot	

Jenni's and Jimmy's equal-sized pizzas are each cut into 8 slices. Jenni eats 2 slices of her pizza, and Jimmy eats 3 slices of his pizza.  Complete the comparison of Jenni's pizza to Jimmy's pizza. 	Grid Response – Drag and Drop, Hot Spot	
Mary has two models each divided into equal-sized sections. Each model has been shaded to represent a fraction.  Create a true comparison of the two fractions represented in Mary's models.	Equation Response	

Mary has two models each divided into equal-sized sections. The first model has been shaded to represent a fraction. Click to shade sections on the second model to show a fraction equivalent to the one in the first model.  Write a true comparison of the 2 fractions.		

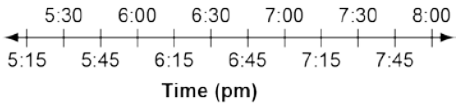
Content Standard	***MAFS.3.MD*** *Measurement and Data* ***MAFS.3.MD.1*** *Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.* **MAFS.3.MD.1.1** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
Assessment Limits	Times should be to the nearest minute. Clocks may only be analog.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and Drop, Drawing/Graphing, Hot Spot Multiple Choice Response Table Response
Context	Allowable

Example	
Context	Use time and time intervals to the nearest 15 minutes to solve problems.
Context easier	Tell time to the nearest 60 minutes. Add or subtract minutes within 60 minutes.
Context more difficult	Tell time to any minute. Add and subtract minutes within 120 minutes.

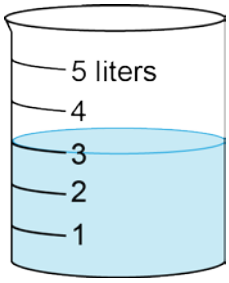
Sample Item Stem	Response Mechanism	Notes, Comments
A clock is shown.  What time is shown on the clock? A. 8:00 a.m. B. 10:00 a.m. C. 12:00 p.m. D. 2:00 p.m.	Multiple Choice Response	

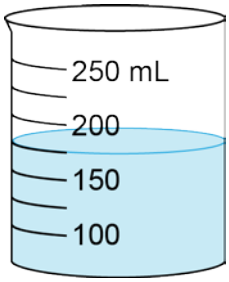
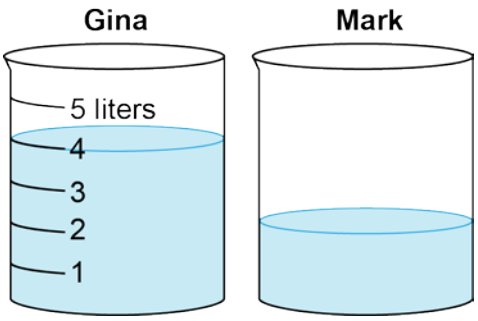
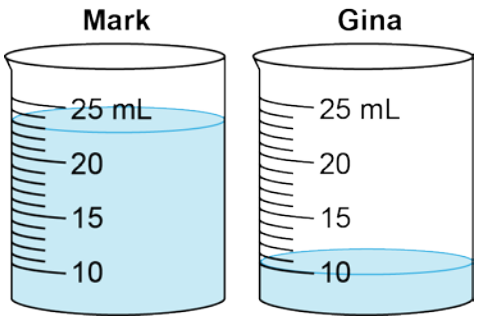
<table>
<tr>
<td>Alex goes to the grocery store at the time shown.
 

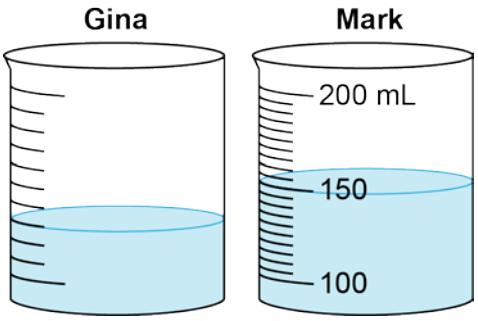
What time does Alex go to the grocery store?

A. 7:52
B. 10:07
C. 10:37
D. 11:23</td>
<td>Multiple Choice Response</td>
<td></td>
</tr>
<tr>
<td>Alex arrives at the grocery store at 3:00 p.m. He leaves the grocery store at 5:00 p.m. How many minutes was he in the grocery store?</td>
<td>Equation Response</td>
<td></td>
</tr>
<tr>
<td>Alex arrives at the grocery store at 5:15 p.m. He leaves the grocery store 75 minutes later. Place an arrow on the number line to show the time he left the grocery store.
 
</td>
<td>Graphic Response – Drawing/Graphing</td>
<td></td>
</tr>
<tr>
<td>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?</td>
<td>Equation Response</td>
<td></td>
</tr>
<tr>
<td>Alex has chores every day. The length of time, in minutes, of each chore is shown. He starts at 9:00 a.m. Complete the table to show what time he will start and finish each chore.
<table><tr><th>Chore</th><th>Time it Takes to Complete the Chore</th><th>Start Time</th><th>End Time</th></tr><tr><td>Watering flowers</td><td>12 minutes</td><td>9:00</td><td></td></tr><tr><td>Sweeping kitchen</td><td>7 minutes</td><td></td><td></td></tr><tr><td>Dusting all rooms</td><td>14 minutes</td><td></td><td></td></tr></table></td>
<td>Table Response</td>
<td></td>
</tr>
</table>

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	Excludes compound units such as cubic centimeters (cm^3) and finding the geometric volume of a container. Excludes multiplicative comparison problems (problems involving notions of "times as much"). Unit conversions are not included.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response
Context	Allowable
Example	
Context	One-step word problems can have addition or subtraction.
Context easier	Single-digit scale.
Context more difficult	Three-digit scale. One-step word problems can extend to multiplication or division.

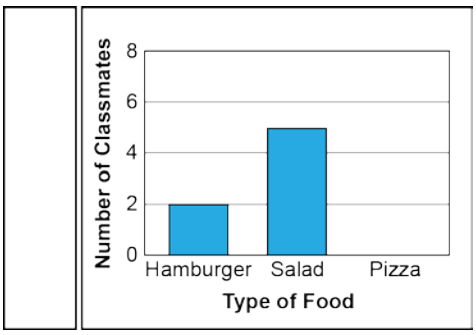
Sample Item Stem	Response Mechanism	Notes, Comments
Mark has the container shown.  How many liters of water are in the container?	Equation Response	

Mark has the container shown.  How many milliliters (mL) of water are in the container?	Equation Response	
Mark and Gina have similar containers filled with different amounts of water as shown.  Gina's container has 4 liters of water. About how much water, in liters, does Mark's container have?	Equation Response	
Gina and Mark each have a container of water as shown.  What is the difference, in milliliters (mL), between the amounts of water in their containers?	Equation Response	

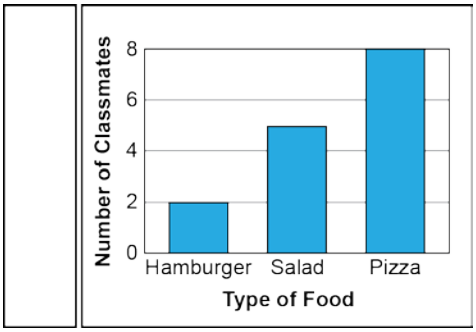
Gina and Mark have the containers shown.  Gina does not know how much water is in her container. Mark's container is the same size. About how much less water, in milliliters (mL), does Gina have than Mark?	Equation Response	

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	Categories are five or fewer and use multiplication and division within 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drag and Drop, Hot Spot Table Response
Context	Required

Example	
Context	John surveys his classmates by asking them to select their favorite foods from a set of 4.
Context easier	Decrease amount of data (2 to 3 categories). Provide partially completed graph.
Context more difficult	Increase amount of data (5 categories). Extend to two-step problems.

Sample Item Stem	Response Mechanism	Notes, Comments
John surveys his classmates about their favorite foods, as shown in the table. Favorite Food: Pizza 8; Salad 5; Hamburger 2 Click on the graph to complete the bar graph. 	Graphic Response – Hot Spot	

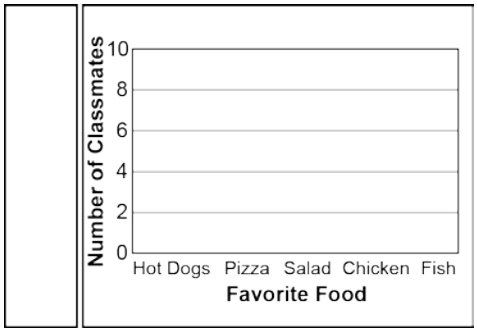
<table>
<tr>
<td>John surveys his classmates about their favorite foods, as shown in the bar graph.

How many more classmates prefer pizza over salad?</td>
<td>Equation Response</td>
<td></td>
</tr>
<tr>
<td>John surveys his classmates about their favorite foods, as shown in the table.

<table>
<tr><th colspan="2">Favorite Food</th></tr>
<tr><td>Hot Dogs</td><td>5</td></tr>
<tr><td>Pizza</td><td>9</td></tr>
<tr><td>Salad</td><td>6</td></tr>
<tr><td>Chicken</td><td>3</td></tr>
<tr><td>Fish</td><td>8</td></tr>
</table>

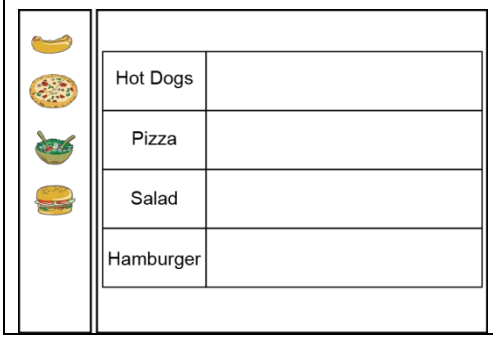
Click on the graph to create a bar graph that represents the data.

 
</td>
<td>Graphic Response – Hot Spot</td>
<td></td>
</tr>
</table>

<table>
<tr>
<td>John surveys his classmates about their favorite foods, as shown in the table.

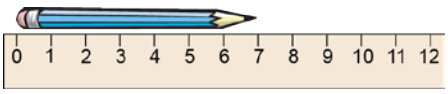
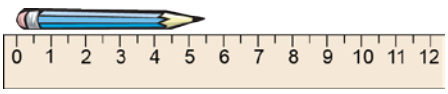
<table>
<tr><th colspan="2">Favorite Food</th></tr>
<tr><td>Hot Dogs</td><td>5</td></tr>
<tr><td>Pizza</td><td>8</td></tr>
<tr><td>Salad</td><td>5</td></tr>
<tr><td>Hamburger</td><td>2</td></tr>
</table>

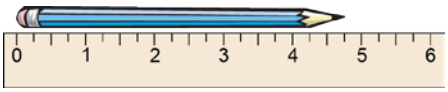
Click and drag the food symbols to create a pictograph.

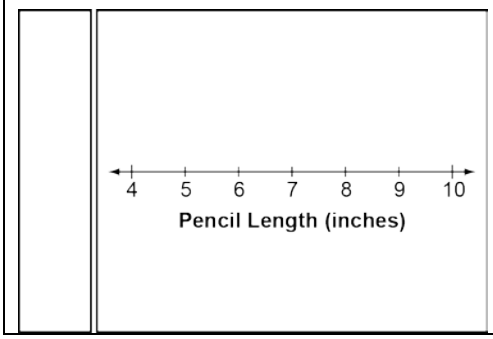


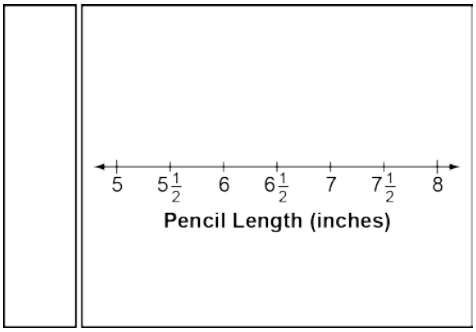
</td>
<td>Graphic Response – Hot Spot</td>
<td></td>
</tr>
</table>

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	Units are limited to whole numbers, halves, or quarters. Standard rulers should not be used — only special rulers that are marked off in halves or quarters. Measurements are limited to inches.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing, Hot Spot Multi-Select Response Matching Item Response
Context	Allowable
Example	
Context	Solve problems involving measuring lengths of pencils to the nearest half unit or using provided data.
Context easier	Limit amount of data. Limit measurements to nearest whole unit.
Context more difficult	Increase amount of data. Measurements include whole, half, and quarter units.

Sample Item Stem	Response Mechanism	Notes, Comments
A pencil is shown.  What is the length of the pencil to the nearest whole inch?	Equation Response	
A pencil is shown.  What is the length of the pencil to the nearest half inch?	Equation Response	

<table>
<tr>
<td>A pencil is shown.
 

What is the length of the pencil to the nearest quarter of an inch?</td>
<td>Equation Response</td>
<td></td>
</tr>
<tr>
<td>The lengths of several pencils are shown.
<table><tr><th colspan="2">Pencil Length (inches)</th></tr><tr><td>Pencil 1</td><td>6</td></tr><tr><td>Pencil 2</td><td>9</td></tr><tr><td>Pencil 3</td><td>6</td></tr><tr><td>Pencil 4</td><td>8</td></tr></table>
Click to create a line plot that shows these data.
 
</td>
<td>Graphic Response – Drawing/Graphing</td>
<td></td>
</tr>
</table>

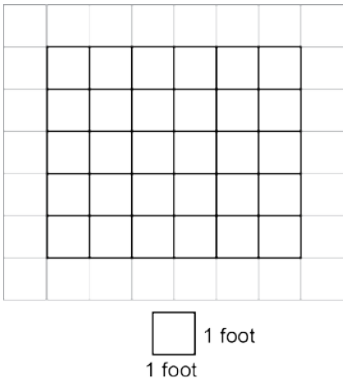
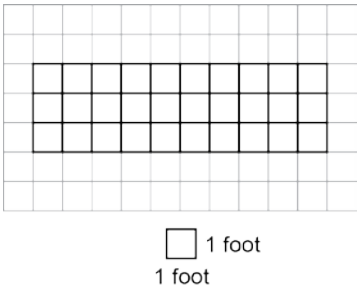
The lengths of several pencils are shown. **Pencil Length (inches)** Pencil 1: $5\frac{1}{2}$ Pencil 2: 8 Pencil 3: $6\frac{1}{2}$ Pencil 4: 5 Pencil 5: $6\frac{1}{2}$ Pencil 6: 8 Click to create a line plot that shows these data. 	Graphic Response – Drawing/Graphing	

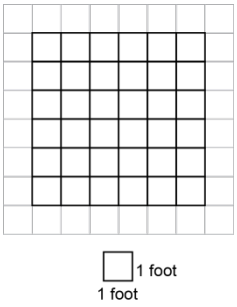
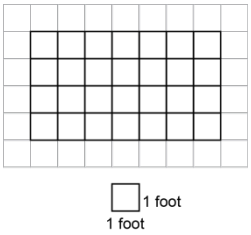
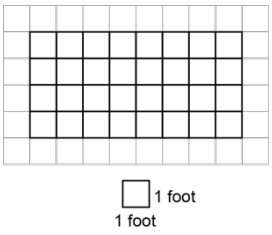
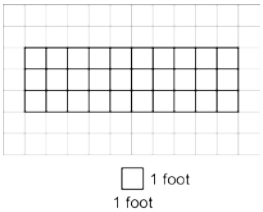
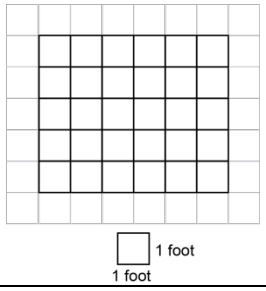
Content Standard	***MAFS.Content.3.MD*** *Measurement and Data* ***MAFS.Content.3.MD.3*** *Geometric measurement: understand concepts of area and relate area to multiplication and addition.* **MAFS.3.MD.3.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. **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 Assessed: **MAFS.3.MD.3.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
Assessment Limits	Plane figures that can be covered by unit squares. Exponential notation is not expected at this grade level (square cm is acceptable, but cm^2 is not).
Calculator	No
Acceptable Response Mechanisms	Equation Response Multiple Choice Response Multi-Select Response

Context	Allowable

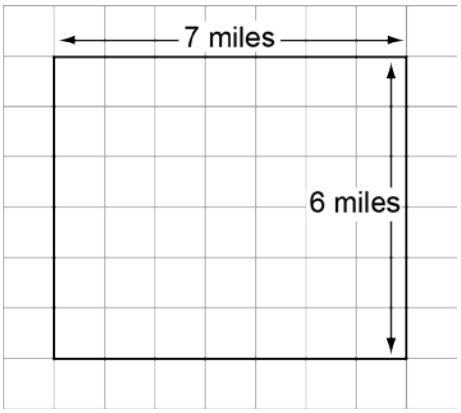
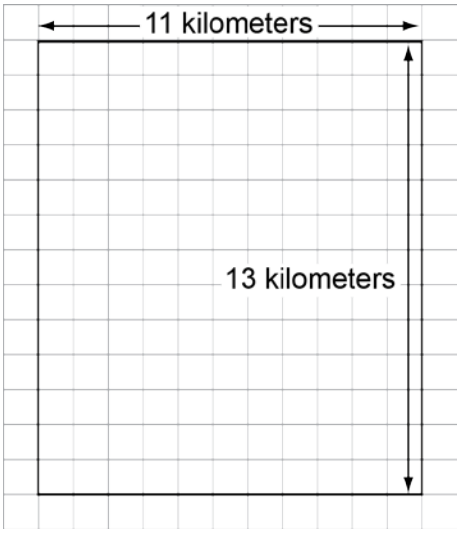
Example	
Context	Alex is designing a floor with tiles to determine the area. (A graphic of a 10 by 2 rectangle is shown.)
Context easier	Limit to single-digit side lengths.
Context more difficult	Increase side lengths of figures. (Note: Factors should be within 100 and should not require students to needlessly count large numbers of tiles.)

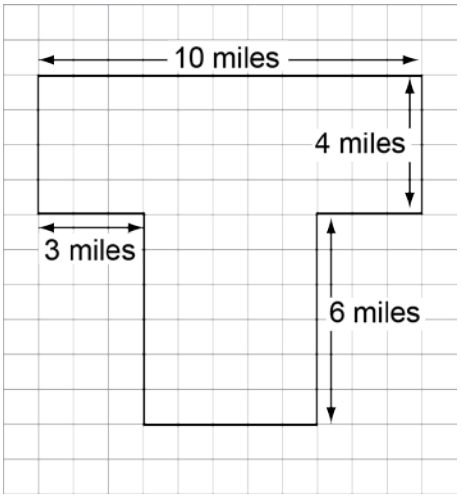
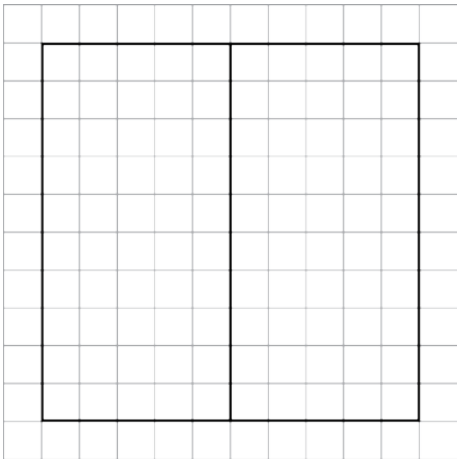
Sample Item Stem	Response Mechanism	Notes, Comments
Alex counts the tiles of his floor. What measurement does Alex find? A. The width of one tile B. The cost of one tile C. The perimeter of the floor D. The area of the floor	Multiple Choice Response	

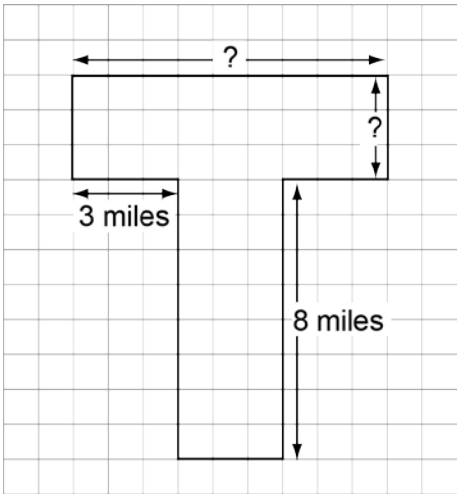
Alex's floor is shown.  What is the area of Alex's floor in square feet?	Multiple Choice Response	
Alex put the tiles shown on his floor.  What is the area of Alex's floor in square feet?	Equation Response	

The area of Alex's floor is 30 square feet. Select all the floors that could be Alex's.      	Multi-Select Response	

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	Rectangles and shapes that can be decomposed into rectangles. Whole-number side lengths. Multiplication is within 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing, Hot Spot Multiple Choice Response Multi-Select Response
Context	Allowable
Example	
Context	Dimensions are a single-digit factor multiplied by a double-digit factor.
Context easier	Figures are rectangles. Side lengths have smaller values (i.e., single-digit factors). Grid squares are shown within the figures.
Context more difficult	More complex rectilinear figures. Side lengths have larger value (i.e., double-digit factors). Grid squares may not be provided. Figures may have unknown side lengths. Two rectilinear figures are joined.

Sample Item Stem	Response Mechanism	Notes, Comments
A park is in the shape of the rectangle shown.  What is the area of the park in square miles?	Equation Response	
A park is shown.  What is the area of the park in square kilometers?	Equation Response	

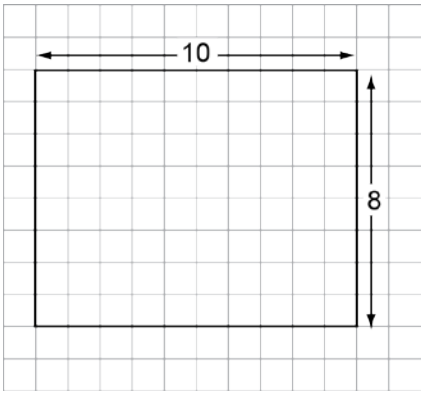
A park is shown.  What is the area of the park in square miles?	Equation Response	
A rectangular park is shown.  Write an expression that can be used to find the area of the park.	Equation Response	

A park is shown.  What is the area of the park in square miles?	Equation Response	

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	Polygons that can be tiled with square units. Whole-number side lengths Multiplication is within 100.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing, Hot Spot Multiple Choice Response Multi-Select Response Simulation Response
Context	Required

Example	
Context	Ben has a garden with a given perimeter and/or area. (A graphic of a 10 by 2 rectangle is shown.)
Context easier	Decrease perimeter by using single-digit factors. Grid squares provided within the graphic. All sides are labeled.
Context more difficult	Increase side lengths of figures. (Note: Factors should be within 100 and should not require students to needlessly count large numbers of tiles.) Construct more than one rectangle. At least one unknown side length. Do not include a graphic.

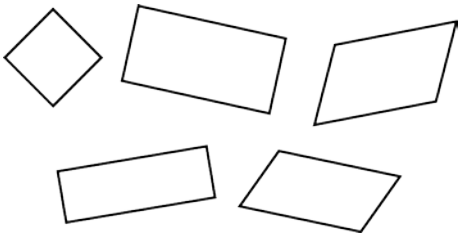
Sample Item Stem	Response Mechanism	Notes, Comments
Ben is planning a garden. Which measurement describes the perimeter of his garden? A. The length of fence he will need B. The amount of soil he will need C. The number of seeds he will buy D. The length of the garden multiplied by the width	Multiple Choice Response	
Ben's garden has a perimeter of 32 feet. Draw a rectangle that could represent the garden.	Graphic Response – Drawing/Graphing	

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 Response	
Ben wants to create a rectangular garden with a perimeter of 48 feet. Draw two different rectangles that could represent Ben's garden.	Graphic Response – Drawing/Graphing	
Ben's garden is shown.  Draw a rectangle with the same area and different perimeter as Ben's garden.	Graphic Response – Drawing/Graphing	
Ben wants to create a rectangular garden with an area less than 40 square feet. He has 30 feet of fencing. Draw a rectangle that could represent Ben's garden.	Graphic Response – Drawing/Graphing	

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 in particular: rhombus, rectangle, square, parallelogram, trapezoid. Attributes include: number of sides, number of angles, whether the shape has a right angle, whether the sides are the same length, whether the sides are straight lines. Do not include references to parallel or perpendicular sides — this is assessed in grade 4.
Calculator	No
Acceptable Response Mechanisms	Graphic Response – Drawing/Graphing Matching Item Response Multi-Select Response Multiple Choice Response Natural Language Response
Context	No context

Example	
Context	A set of shapes is shown.
Context easier	Decrease the number of shapes to 1-2, include only traditional orientation.
Context more difficult	Increase the number of shapes to 5-6, include all shapes in nontraditional orientation.

Sample Item Stem	Response Mechanism	Notes, Comments
A square and a trapezoid are shown below.  Which properties do these shapes have in common?	Multi-Select Response	

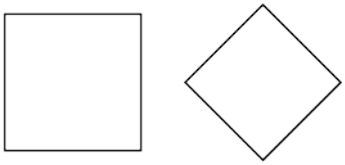
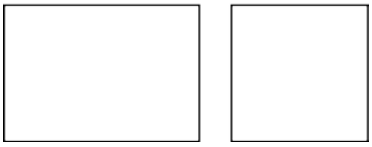
<table>
<tr><td>A set of shapes is shown.
 
Which properties do they have in common?</td><td>Multi-Select Response</td><td></td></tr>
<tr><td>Select the shapes that are quadrilaterals and not rectangles.

o Rhombus
o Parallelogram
o Triangle
o Trapezoid
o Square</td><td>Multi-Select Response</td><td></td></tr>
<tr><td>Select the shapes that have one right angle, sides of different lengths, not rectangles, and quadrilaterals.

o Rhombus
o Parallelogram
o Triangle
o Trapezoid
o Square</td><td>Multi-Select Response</td><td></td></tr>
<tr><td>Draw a quadrilateral that is not a rectangle.</td><td>Graphing Response – Drawing/Graphing</td><td></td></tr>
<tr><td>Draw a quadrilateral with
- one right angle, and
- 2 sides of the same length.</td><td>Graphing Response – Drawing/Graphing</td><td></td></tr>
<tr><td>What is the name of a shape that is
- a quadrilateral, and
- not a rectangle?</td><td>Multiple Choice Response</td><td></td></tr>
<tr><td>For each shape, select the properties that apply.

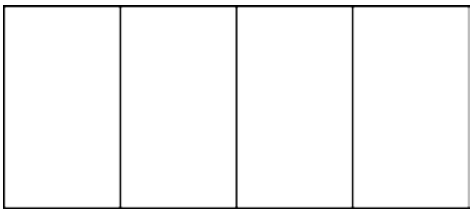
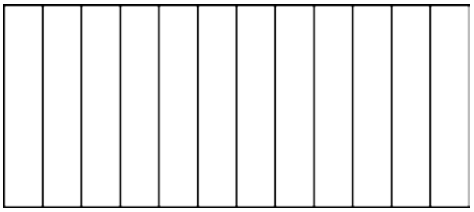
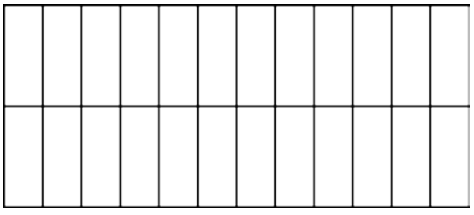
<table><tr><td></td><td>  </td><td>  </td></tr><tr><td>has four sides</td><td></td><td></td></tr><tr><td>has two pairs of parallel sides</td><td></td><td></td></tr></table></td><td>Matching Item Response</td><td>Including 2 shapes and 2 properties makes it an easy item.

Classifying shapes based on properties determines DOK2.</td></tr>
</table>

A group of shapes was sorted into two groups. **Group 1**  **Group 2**  Explain a rule that could have been used to group the shapes this way.	Natural Language Response	

Content Standard	***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	Fractions with denominators 2, 3, 4, 6, and 8 (MAFS.3.NF). Shapes include quadrilateral (parallelogram, rhombus, rectangle, square, isosceles trapezoid), equilateral triangle, isosceles triangle, regular hexagon, circle (these are all the shapes covered in geometry standards K-3). The shape used and the number of partitions should be suitable for this grade. For example, having a student partition a hexagon into 6 parts is acceptable, but 8 is not.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing, Hot Spot Multi-Select Response Table Response
Context	No context
Example	
Context	A shape is shown.
Context easier	Decrease number of partitions. Limit partitions to horizontal/vertical partitions. Limit partitions to $\frac{1}{2}$ and $\frac{1}{4}$.
Context more difficult	Increase number of partitions. Include irregular/nontraditional partitions. Partition includes $\frac{1}{3}$, $\frac{1}{6}$, and $\frac{1}{8}$.

Sample Item Stem	Response Mechanism	Notes, Comments
A square is shown. Part of the square is shaded.  Which fraction of the total area of the square does the shaded part represent?	Equation Response	

A square is shown. Part of the square is shaded.  Which fraction of the total area of the square does the shaded part represent?	Equation Response	
A square is shown. Part of the square is shaded.  Which fraction of the total area of the square does the shaded part represent?	Equation Response	
A rectangle is shown.  Shade $\frac{1}{2}$ of the shape.	Graphic Response – Hot Spot	
A rectangle is shown.  Shade $\frac{1}{3}$ of the shape.	Graphic Response – Hot Spot	
A rectangle is shown.  Shade $\frac{1}{8}$ of the shape.	Graphic Response – Hot Spot	

A half of a shape is shown.  Click squares to complete the whole shape.	Graphic Response – Hot Spot	
A third of a shape is shown.  Click squares to complete the whole shape.	Graphic Response – Hot Spot	
A sixth of a shape is shown.  Click squares to complete the whole shape.	Graphic Response – Hot Spot	