

Grade 4 - SBA Claim 1 Example Stems

This document takes publicly available information about the Smarter Balanced Assessment (SBA) in Mathematics, namely the Claim 1 Item Specifications, and combines and edits them down to hopefully be more useful for teachers and others. The SBA Consortium is not involved in producing this document, so editing choices do not reflect any guidance from the SBA Consortium.

The SBA uses evidence based design, viewing the assessment as eliciting evidence of student proficiency. That evidence is meant to support Claims, which in math are (to paraphrase):

1. A student understands **concepts** and can perform **procedures**.
2. A student can **solve problems**.
3. A student can **reason** (and critique the reasoning of others).
4. A student can analyze and **model real-world contexts** using mathematics.

These claims will be assessed in a roughly 40%-20%-20%-20% split. Given that previous assessments would heavily focus on procedures, while in this framework they constitute 20% as a focus (though of course are needed for items across all claims), this represents a significant shift in assessment.

This document only looks at Claim 1 about concepts and procedures. Items written for Claim can look much like the Example Stems below. At other Claims items can vary more widely, as one would expect for multistep problems and authentic reasoning or modeling contexts.

Claim 1 is divided into various Targets which correspond roughly to the Clusters within the Common Core State Standards in Mathematics. The items from different targets will be taken based on emphasis with [m] being major, [a] additional and [s] supporting.

Finally, in an era of anxiety about end-of-year assessment (which constitutes only part of the Smarter Balanced system), it should be said that these are offered primarily to promote teacher professional understanding. Practices such as using the Example Stems exclusively as learning targets are discouraged. SBA is designed as much as possible to assess authentic learning of mathematics as outlined in the Standards, so that authentic learning should guide instruction.

Operations and Algebraic Thinking

Target A [m]: Use the four operations with whole numbers to solve problems. (DOK 1, 2)

Example Stem: A cat has 4 times as many toys as a puppy. The puppy has 12 toys. How many toys does the cat have?

Response Type: Equation/Numeric

Example Stem: A cat has 2 times as many toys as a puppy. The cat has 10 toys. How many toys does the puppy have?

Enter your answer in the response box.

Example Stem: A puppy has 4 toys. A cat has 36 toys. How many times more toys does the cat have than the puppy?

Enter your answer in the response box.

Example Stem 1: Tanya ran 400 meters on Tuesday. She ran 800 meters on Wednesday. What is the total number of meters Tanya ran these two days?

Example Stem 2: A container holds 750 milliliters of water. Jess drank 90 milliliters of the water. How many milliliters of water remain in the container?

Note (emphasizing points made on the cover page): this target, as an [m], will be drawn from much more than Targets B and C, which are the other targets related to Operations and Algebraic Thinking. To continue looking at the most frequently given items, some may want to skip to targets within other domains, for example Number and Operations in Base Ten starting on page 6.

Target B [s]: Gain familiarity with factors and multiples.
(DOK 1, 2)

Example Stem: Which list has **all** of the factors of 36?

- A. 1, 2, 3, 4, 6, 9, 12, 18, 36
- B. 1, 2, 3, 6, 8, 9, 12, 16, 36
- C. 1, 2, 4, 6, 8, 9, 16, 18, 36
- D. 1, 2, 3, 5, 6, 9, 12, 18, 36

Example Stem: Which list has **all** of the factor pairs of 36?

- A. $1 \times 36, 2 \times 18, 3 \times 12, 4 \times 9, 6 \times 6$
- B. $1 \times 36, 2 \times 16, 3 \times 12, 4 \times 9, 6 \times 8$
- C. $1 \times 36, 2 \times 18, 3 \times 6, 4 \times 8, 6 \times 12$
- D. $1 \times 36, 2 \times 12, 3 \times 9, 4 \times 8, 6 \times 6$

Example Stem: Drag numbers into the boxes to make factor pairs of 12.

$\square \times \square = 12$ $\square \times \square = 12$ $\square \times \square = 12$									
1	2	3	4	5	6	7	8	9	
10	11	12							

Rubric: (1 point) The student identifies all of the correct factor pairs (e.g., $1 \times 12, 2 \times 6, 3 \times 4$).

Response Type: Drag and Drop

Example Stem: Which number is a factor of **both** 16 and 20?

- A. 3
- B. 4
- C. 5
- D. 8

Stimulus: The student is presented with two whole numbers.

Example Stem: Which numbers are factors of **both** 18 and 45?

- A. 1, 2, 8
- B. 1, 3, 9
- C. 1, 4, 8
- D. 1, 5, 9

Example Stem: Enter numbers into the boxes to make four different factor pairs of 54.

	×		= 54
	×		= 54
	×		= 54
	×		= 54

Rubric: (1 point) The student identifies four different factor pairs of the number (e.g., 1 and 54, 2 and 27, 3 and 18, 6 and 9). **Note:** Numbers may be in either order (e.g., 1 and 54 **or** 54 and 1)

Example Stem: Decide whether each number is a multiple of 6, a factor of 6, or neither. Each number may be matched to more than one description. Click in the table to respond.

	Multiple of 6	Factor of 6	Neither a Multiple Nor a Factor of 6
1			
2			
3			
6			
8			
12			

Rubric: (3 points) The student correctly fills in all three columns (e.g., Multiple column: 6, 12; Factor column: 1, 2, 3, 6; Neither column: 8), with none incorrect. (2 points) Partial credit is possible for correctly filling in two of the three columns (e.g., Multiple column and Neither column filled in correctly, but Factor column not filled in correctly), with no incorrect fill-ins on the two columns. (1 point) Partial credit is possible for correctly filling in one of the three columns (e.g., Multiple column filled in correctly but Factor and Neither column not filled in correctly), with no incorrect fill-ins on the one column (e.g., Multiple).

Example Stem: Decide whether each number is prime or composite. Click in the table to respond.

	Prime	Composite
17		
52		
87		

Target C [a]: Generate and analyze patterns. (DOK 2, 3)

Example Stem: A pattern is generated using this rule: Start with the number 7 as the first term and add 5.









Enter numbers into the boxes to complete the table.

Term	Number
First	7
Second	
Third	
Fourth	
Fifth	

Rubric: (1 point) The student enters the correct numbers (e.g., 12, 17, 22, 27).

Response Type: Fill-in Table

Example Stem: A shape pattern is generated by repeating the pattern of “Star, Circle, Square, Triangle” as shown.

							
First term	Second term	Third term	Fourth term	Fifth term	Sixth term	Seventh term	Eighth term

This pattern continues for 100 terms. Select the shape that represents the 98th term.

- A.  B.  C.  D. 

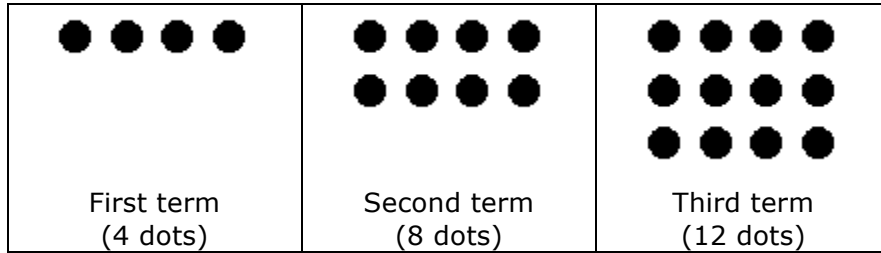
Example Stem: A pattern is generated using this rule: Start with the number 5 as the first term and add 2.

Select True or False for each statement about the pattern.

	True	False
The terms alternate between even and odd numbers.		
Each term is greater than the term before it.		
All possible multiples of 5 are terms in the pattern.		

Rubric: (1 point) The student correctly identifies all three statements as True or False (e.g., F, T, F).

Example Stem: The first three terms of a shape pattern are shown. Each term is generated by following the same rule.



Decide whether each method can be used to find the number of dots in the 100th term. Select Yes or No for each method.

	Yes	No
Multiply the term number by 4.	<input type="checkbox"/>	<input type="checkbox"/>
Add 4 to the number of dots in the 99th term.	<input type="checkbox"/>	<input type="checkbox"/>
Multiply the number of dots in the 4th term by 25.	<input type="checkbox"/>	<input type="checkbox"/>

Rubric: (1 point) The student correctly selects yes or no for each method (e.g., Y, Y, N).

Example Stem: A pattern is generated using this rule: Start with 42 and add 5. Enter one number in each response box that makes this sentence correct: The ones digit for every term in the pattern is either ___ or ___.

Rubric: (1 point) The student correctly names the values between which the identified place's digits alternate (e.g., 2, 7).

Response Type: Equation/Numeric (2 response boxes)

Numbers and Operations in Base Ten

Target D [m]: Generalize place value understanding for multi-digit whole numbers. (DOK 1, 2)

Stimulus: The student is presented with two multi-digit whole numbers that are the same except for two place values being reversed: either the digits in the ones and tens places are reversed, or the digits in the tens and hundreds places are reversed.

Example Stem: Enter the symbol (<, >, or =) that goes in the box that correctly compares these numbers.

46,285 46,258

Stimulus: The student is presented with two multi-digit whole numbers that

- require distinguishing between small and large numbers in different place values (e.g., 398 and 425); or
- have only one place value that differs (e.g., 385 and 395).

Example Stem: Enter the symbol (<, >, or =) that goes in the box that correctly compares these numbers.

46,284 74,295

Stimulus: The student is presented with two multi-digit whole numbers in numeric form. One number has a box to represent an unknown digit.

Example Stem: What digit can you put in the box to make the comparison true?

524,9□7 < 524,932

Response Type: Equation/Numeric

Example Stem 1: Round 54,108 to the nearest thousand. Enter your answer in the response box.

Example Stem 2: Round 656,789 to the nearest ten thousand. Enter your answer in the response box.

Example Stem: When rounding to the nearest thousand, what is the least whole number that rounds to 16,000? Enter your answer in the response box.

Example Stem: When rounding to the nearest thousand, which numbers round to 16,000?

Select Yes if the number rounds to 16,000. Select No if the number does **not** round to 16,000.

	Yes	No
15,179		
16,523		
15,545		

Example Stem: Select True or False for each comparison.

	True	False
$5 \text{ hundreds} + 4 \text{ tens} > 50 + 400$		
$524 < 50 + 200 + 4$		
$50 \text{ tens} + 20 \text{ ones} = 520$		

Example Stem: Enter the symbol (<, >, or =) that goes in the box that makes this comparison true.

$4000 + 100 + 70$ $1 \text{ hundred} + 4 \text{ thousands} + 7 \text{ ones}$

Example Stem: Select the statement that explains how the values of the numbers 420 and 4200 are different.

- A. 4200 is 1000 times as large as 420.
- B. 4200 is 100 times as large as 420.
- C. 4200 is 10 times as large as 420.
- D. 4200 is 1 time as large as 420.

Target E [m]: Use place value understanding and properties of operations to perform multi-digit arithmetic. (DOK 1, 2)

Stimulus: The student is presented with a non-contextual addition problem with two or more whole numbers.

Example Stem 1: Enter the sum.

$$\begin{array}{r} 4325 \\ + 654 \\ \hline \end{array}$$

Example Stem 2: Enter the sum.

$$\begin{array}{r} 8595 \\ + 4928 \\ \hline \end{array}$$

Example Stem 1: Enter the difference.

$$\begin{array}{r} 7529 \\ - 382 \\ \hline \end{array}$$

Example Stem 2: Enter the difference.

$$\begin{array}{r} 4003 \\ - 1486 \\ \hline \end{array}$$

Example Stem: Enter the product.

$$\begin{array}{r} 5327 \\ \times 4 \\ \hline \end{array}$$

Response Type: Equation/Numeric

Example Stem 1: Enter the unknown number that makes the equation true.

$$36 \times 94 = (30 + 6) \times (\square + 4)$$

Example Stem 2: Enter the unknown number that makes the equation true.

$$36 \times 94 = 2700 + \square + 540 + 24$$

Example Stem: Enter the unknown number to make the equation true.

$$98 \div 5 = (\square \div 5) + (8 \div 5)$$

Example Stem: Which expression is equal to 36×94 ?

- A. $(30 \times 90) + (6 \times 4)$
- B. $(30 + 6) \times (90 + 4)$
- C. $(30 + 6) \times 94 + (30 + 6) \times 4$
- D. $(30 \times 90) + (30 \times 6) + (90 \times 6) + (90 \times 4)$

TM2d

Stimulus: The student is presented with a multiplication problem and four vertically recorded partial solutions.

Example Stem: Which strategy for multiplying 36 and 94 should result in the correct product?

A.	$\begin{array}{r} 94 \\ \times 36 \\ \hline 24 \\ 540 \\ 120 \\ + 270 \end{array}$	B.	$\begin{array}{r} 94 \\ \times 36 \\ \hline 24 \\ 180 \\ 120 \\ + 2700 \end{array}$	C.	$\begin{array}{r} 94 \\ \times 36 \\ \hline 2700 \\ 540 \\ 120 \\ + 18 \end{array}$	D.	$\begin{array}{r} 94 \\ \times 36 \\ \hline 2700 \\ 540 \\ 120 \\ + 24 \end{array}$
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Example Stem: Enter the quotient in the first response box.

$2578 \div 4 = \square$

If there is a remainder, enter it in the second response box.

Rubric: (1 point) The student enters the correct quotient and remainder:

- 644, 2
- 644, 1/2
- 644 1/2, 0
- 644 1/2, blank.

Example Stem: Select the equation that has the same unknown number as $90 \div 5 = \square$.

- A. $5 \times 90 = \square$
- B. $90 \times \square = 5$
- C. $5 \times \square = 90$
- D. $\square \times 90 = 5$

Numbers and Operations - Fractions

Target F [m]: Extend understanding of fraction equivalence and ordering. (DOK 1, 2)

Example Stem: Figure A has $\frac{2}{3}$ of its whole shaded gray.

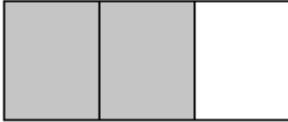


Figure A

Decide whether each fraction is equal to $\frac{2}{3}$. Select Yes or No for each fraction.

	Yes	No
$\frac{4}{6}$		
$\frac{1}{2}$		
$\frac{8}{12}$		

Rubric: (1 point) The student correctly identifies all of the fractions as equivalent or not equivalent (e.g., Y, N, Y).

Example Stem: Select True if the equation is true. Select False if the equation is **not** true.

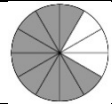



	True	False
$\frac{4}{6} = \frac{8}{12}$		
$\frac{50}{100} = \frac{3}{4}$		
$\frac{6}{8} = \frac{75}{100}$		

Rubric: (1 point) The student correctly identifies all fraction equivalencies as True or False (e.g., T, F, T).

Stimulus: The student is presented with four visual fraction models and four fractions in numeric form.

Example Stem: A fraction of the whole is shaded in each model.

Click in the chart to match each fraction to the model that shows an equivalent fraction.

				
$\frac{2}{3}$				
$\frac{3}{4}$				
$\frac{4}{8}$				
$\frac{6}{10}$				

TM1d

Stimulus: The student is presented with eight fractions in numeric form.

Example Stem: Click in the chart to match **all** equal fractions.

	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{4}{6}$	$\frac{9}{12}$
$\frac{2}{3}$				
$\frac{3}{4}$				
$\frac{4}{8}$				
$\frac{6}{10}$				

Rubric: (1 point) The student makes all of the correct matches of equivalent fractions (e.g., $\frac{2}{3} = \frac{4}{6}, \frac{3}{4} = \frac{9}{12}, \frac{4}{6} = \frac{1}{2}, \frac{6}{10} = \frac{3}{5}, \frac{2}{3} = \frac{4}{6}, \frac{3}{4} = \frac{9}{12}, \frac{4}{6} = \frac{1}{2}, \frac{6}{10} = \frac{3}{5}$).

Example Stem: Figure A has $\frac{4}{12}$ of its whole shaded.

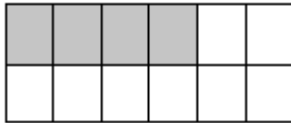


Figure A

Enter **another** fraction equal to $\frac{4}{12}$.

Example Stem: Click the spaces of the model to shade $\frac{3}{6}$ of Figure A.

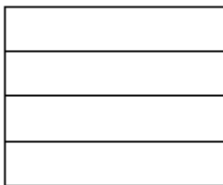


Figure A

Example Stem: Select True if the comparison is true. Select False if the comparison is **not** true.

	True	False
$\frac{1}{4} < \frac{2}{12}$		
$\frac{2}{10} > \frac{3}{5}$		
$\frac{4}{6} > \frac{5}{12}$		

Example Stem: Enter the symbol (<, >, or =) that goes in the box that correctly compares the fractions.

$$\frac{3}{5} \square \frac{7}{8}$$

Target G [m]: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (DOK 1, 2)

Example Stem 1: Enter the unknown number that makes the equation true.

$$\frac{1}{8} + \frac{4}{8} = \square$$

Example Stem 2: Enter the unknown number that makes the equation true.

$$\square = \frac{4}{8} - \frac{1}{8}$$

Response Type: Equation/Numeric

Example Stem 1: Enter the unknown number that makes the equation true.

$$\frac{7}{5} - \square = \frac{4}{5}$$

Example Stem 2: Enter the unknown number that makes the equation true.

$$\frac{4}{5} = \square + \frac{2}{5}$$

Example Stem: Decide whether each expression is equal to $1\frac{5}{8}$. Click in the table to respond.

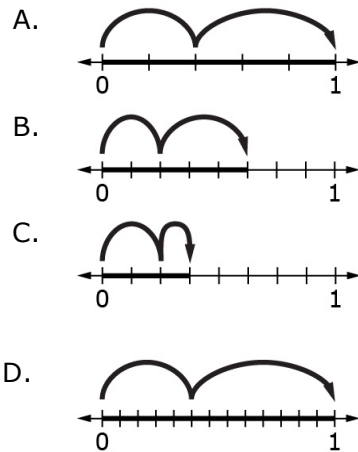
	Equal to $1\frac{5}{8}$	Not Equal to $1\frac{5}{8}$
$1 + \frac{5}{8}$		
$\frac{8}{8} + \frac{3}{8} + \frac{2}{8}$		
$1 + \frac{3}{8} + \frac{1}{8} + \frac{2}{8}$		

Example Stem: Drag numbers to the numerators of the fractions to show **two different** correct equations.

$$\frac{7}{8} = \frac{\square}{8} + \frac{\square}{8} + \frac{\square}{8} \qquad \frac{7}{8} = \frac{\square}{8} + \frac{\square}{8} + \frac{\square}{8}$$

Rubric: (1 point) The student correctly completes the equations provided (e.g., 2, 1, 4 and 4, 3, 0).

Example Stem: Select the model that matches this equation. $\frac{5}{8} = \frac{2}{8} + \frac{3}{8}$



Example Stem: Enter the fraction that is equivalent to the expression: $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$.

Example Stem 1: John has $\frac{5}{6}$ of a liter of juice. Jill has $\frac{3}{6}$ of a liter of juice. How many liters of juice do John and Jill have together? Enter the number.

Example Stem 2: Eric has $\frac{7}{8}$ of a pound of nuts. Jill has $\frac{2}{8}$ of a pound of nuts. How many more pounds of nuts does Eric have than Jill? Enter the number.

Example Stem 2: A baker has $3\frac{3}{4}$ cups of sugar. She has $2\frac{1}{4}$ more cups of sugar than cups of flour. How many cups of flour does she have? Enter your answer in the response box.

Example Stem 1: Michael eats $\frac{4}{6}$ of a bag of crackers. Erin eats $\frac{5}{6}$ of a bag of crackers.

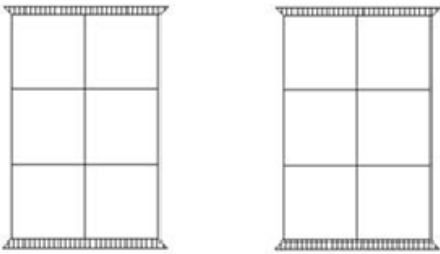


represents one bag of crackers

Part A: Shade the model to show how many bags of crackers Michael and Erin eat together.

Part B: Click on the total number of bags of crackers Michael and Erin eat together.

Part A:



Part B: $\frac{9}{12}$ $1\frac{3}{6}$ $\frac{1}{6}$ $1\frac{3}{12}$

Rubric:

Part A: (1 point) The student builds a model that correctly represents a fraction addition or subtraction problem (e.g., $1\frac{3}{6}$).

Part B: (1 point) The student selects the correct number (e.g., $1\frac{3}{6}$).

Example Stem: Enter the unknown number that makes the equation true.

$$\square = 4 \times \frac{1}{12}$$

Example Stem: Enter the unknown number that makes the equation true.

$$\frac{4}{12} = \square \times \frac{1}{12}$$

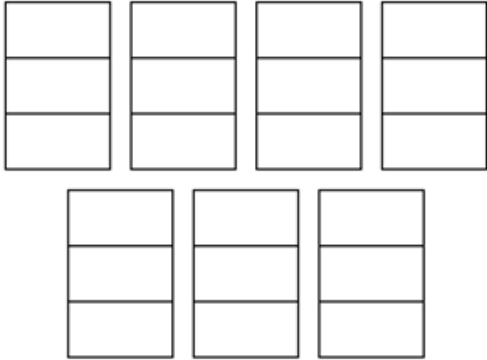
Example Stem: A bottle holds $\frac{3}{5}$ liter of water. Sam needs 8 bottles of water to fill his fish tank. How many liters of water does Sam need to fill the fish tank? Enter the number of liters.

Example Stem: There are 7 people at a picnic. Each person drinks $\frac{2}{3}$ of a liter of lemonade.

Part A: Each pitcher holds 1 liter. Click on the pitchers to shade the amount of lemonade needed for the picnic. Use the fewest number of pitchers possible.

Part B: Click the total amount of lemonade that is needed.

Part A:



Part B:

$\frac{14}{3}$ L
 $\frac{9}{3}$ L
 $\frac{8}{3}$ L
 $\frac{10}{3}$ L

Rubric:

Part A: (1 point) The student correctly shades the model to represent the product (e.g., $4\frac{2}{3}$).

Part B: (1 point) The student selects the correct product (e.g., $\frac{14}{3}$).

Example Stem 2: Decide whether each expression is equal to $5 \times \frac{2}{4}$. Click in the table to respond.

	Equal to $5 \times \frac{2}{4}$	Not Equal to $5 \times \frac{2}{4}$
$2 \times \frac{1}{20}$		
$2 \times \frac{5}{4}$		
$\frac{5 \times 2}{10}$		

Target H [m]: Understand decimal notation for fractions, and compare decimal fractions. (DOK 1, 2)

Example Stem 1: Enter the unknown number that makes this equation true.

$$\frac{\square}{10} = \frac{40}{100}$$

Example Stem 2: Enter the unknown number that makes this equation true.

$$\frac{4}{10} = \frac{\square}{100}$$

Response Type: Equation/Numeric

Example Stem: Determine if each equation is true or false. Select True or False for each equation.

	True	False
$\frac{4}{10} = \frac{40}{100}$		
$\frac{5}{10} = \frac{50}{10}$		
$\frac{11}{10} = \frac{110}{100}$		

Example Stem: Determine if each equation is true or false. Select True or False for each equation.

	True	False
$\frac{5}{10} + \frac{18}{100} = \frac{68}{100}$		
$\frac{11}{10} + \frac{13}{100} = \frac{24}{100}$		
$\frac{10}{10} + \frac{45}{100} = \frac{145}{100}$		

Example Stem 1: Enter the unknown number that makes this equation true.

$$\frac{6}{10} + \frac{3}{100} = \frac{\square}{100}$$

Example Stem 2: Enter the unknown fraction that makes this equation true.

$$\frac{3}{10} + \frac{15}{100} = \frac{\square}{\square}$$

Rubric: (1 point) The student finds the sum of fractions with denominators 10 or 100 and correctly enters the value of the unknown number (e.g., 63; $\frac{45}{100}$). The student may also give a correct decimal equivalent to an unknown fraction (e.g. 0.45 for example stem 2).

Example Stem 1: Enter the unknown number that makes this equation true.

$$\frac{\square}{10} + \frac{15}{100} = \frac{65}{100}$$

Example Stem 2: Enter the unknown fraction that makes this equation true.

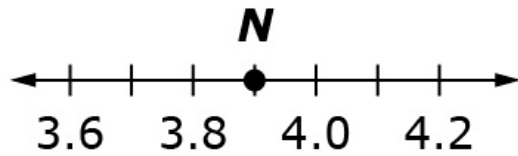
$$\frac{3}{10} + \frac{\square}{\square} = \frac{65}{100}$$

Example Stem: Enter a decimal that is equivalent to $\frac{3}{10}$.

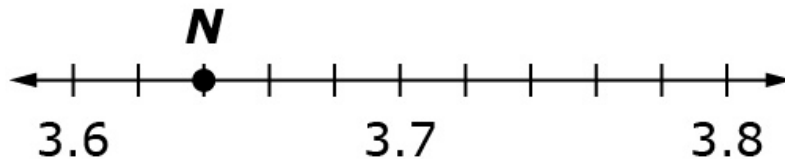
Example Stem: Determine if each equation is true or false. Select True or False for each equation.

	True	False
$\frac{85}{100} = 85.100$		
$\frac{20}{100} = 0.2$		
$\frac{14}{100} = 0.014$		

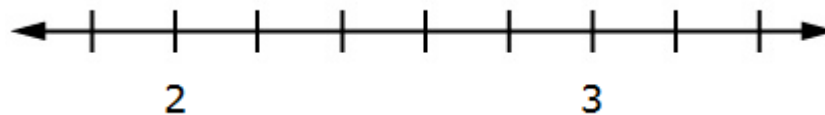
Example Stem 1: Enter the decimal value of the number located at point *N*.



Example Stem 2: Enter the decimal value of the number located at point *N*.

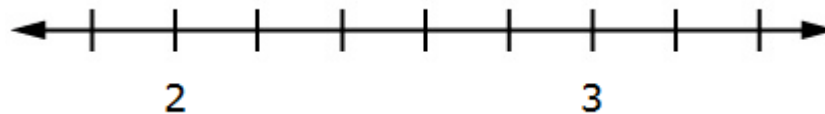


Example Stem 1: Use the Add Point tool to put a point on the number line to show the location of 2.2.



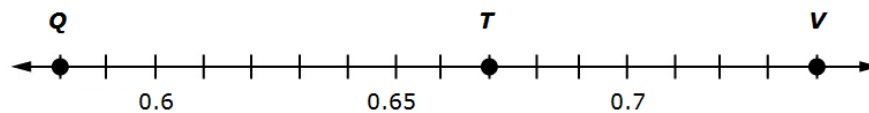
Rubric: (1 point) The student locates a decimal number on a number line and places the point on the correct tick mark (e.g., student places the point at 2.2).

Example Stem 2: Use the Add Point tool to put a point on the number line to show the location of 2.32.



Rubric: (1 point) The student locates a decimal number on a number line and places the point within a range equal to 10% of the interval above or below the correct spot, without placing the point on or beyond the nearest tick mark (e.g., student places the point in the range of 2.30 – 2.34).

Example Stem: Use this number line to identify the numbers that each letter represents.



Enter the number for *Q* in the first box, *T* in the second box, and *V* in the third box.

Measurement and Data

Target I [s]: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (DOK 1, 2)

Example Stem 1: Enter the unknown number that makes the equation true.
3.5 centimeters = □ millimeters

Example Stem 2: Enter the unknown number that makes the equation true.
6 feet = □ inches

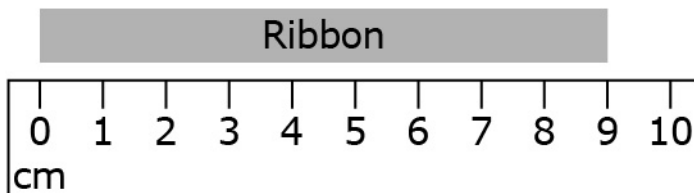
Example Stem: Decide whether each measurement is equal to 5 yards. Select Yes or No for each measurement.

	Yes	No
180 inches		
27 inches		
15 feet		

Example Stem: Enter the unknown numbers to complete the table of equal measurements.

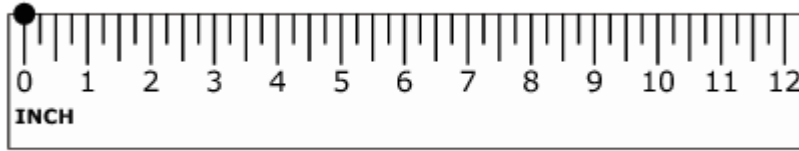
Feet	Inches
3	
$5\frac{1}{2}$	

Example Stem: Enter the length, in **millimeters**, of the ribbon.

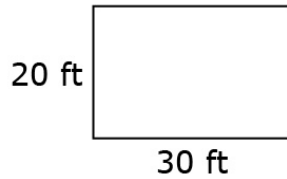


Note: Depending on the diagram, a range of responses may need to be accepted. It is reasonable to allow 89-91 mm for the example shown above.

Example Stem: An ant starts at the 0-inch mark, walks $\frac{1}{2}$ foot to the right along the ruler, and stops. Use the Add Point tool to mark where the ant stopped.

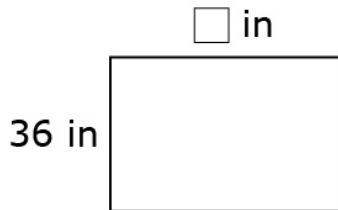


Example Stem: Use the diagram of the rectangular garden to solve the problem.



Enter the area, in square feet, of the garden.

Example Stem: Use the diagram of the rectangle to solve the problem.



The perimeter of the rectangle is 192 inches. What is the length, in inches, of the unknown side?

Example Stem 2: The dimensions for three rectangular gardens are shown. Decide whether each garden has a perimeter equal to 100 meters. Select Yes or No for each garden.

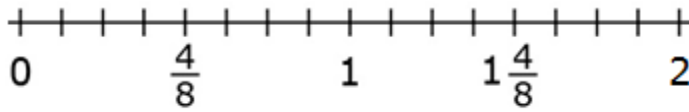
	Yes	No
Garden 1: <ul style="list-style-type: none"> Length = 5 m Width = 45 m 		
Garden 2: <ul style="list-style-type: none"> Length = 50 m Width = 50 m 		
Garden 3: <ul style="list-style-type: none"> Length = 4 m Width = 25 m 		

Target J [s]: Represent and interpret data. (DOK 1, 2)

Example Stem: Michelle measures the mass of the books in her desk. The list shows the mass of each book in pounds.

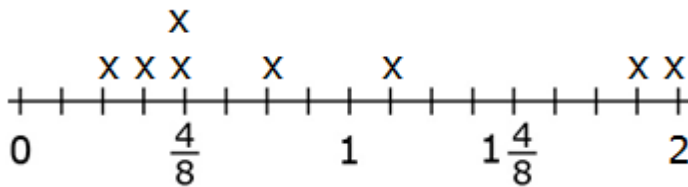
$$\frac{4}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{9}{8}, \frac{3}{4}, 1\frac{7}{8}, 2$$

Click above a tick mark to complete the line plot that displays the data.



Mass of Books (lb)

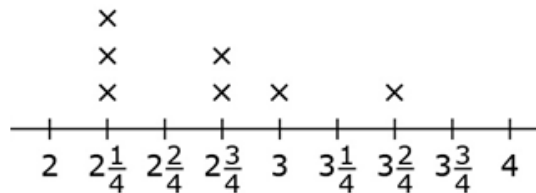
Rubric: (1 point) The student places all of the correct data points to complete the line plot with no incorrect or missing points (e.g., as shown below).



Mass of Books (lb)

Response Type: Hot Spot

Example Stem: A student measured how much rain fell each week. This line plot shows the amount of rain, in inches, that fell each week.



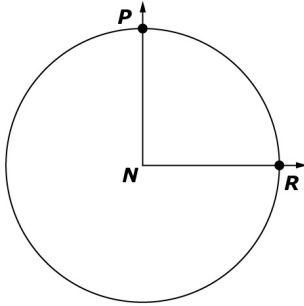
Amount of Rain That Fell Each Week (in)

How much more rain, in inches, was there during the week with the greatest amount of rain than during the week with the least amount of rain? Enter your answer in the response box.

Target K [a]: Geometric measurement: understand concepts of angle and measure angles. (DOK 1, 2)

Stimulus: The student is presented with an angle superimposed on a circle with its vertex at the center of the circle and the fraction of a circular arc that it represents.

Example Stem: The vertex of $\angle PNR$ is at the center of the circle. The circular arc between Point P and Point R is $\frac{1}{4}$ of the circle.

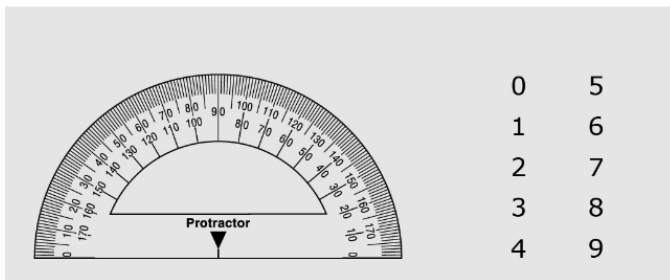
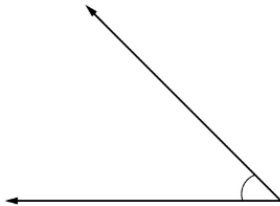


Enter the measure, in degrees, of $\angle PNR$.

Response Type: Equation/Numeric

Example Stem:

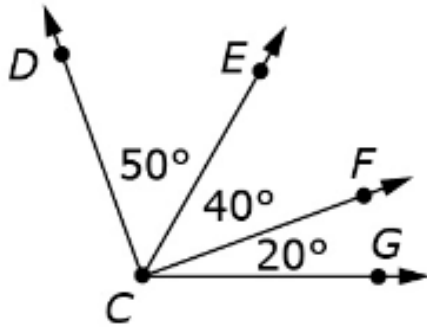
- Use the protractor to measure the angle.
- Then drag the numbers into the box to enter the measure of the angle, in degrees.



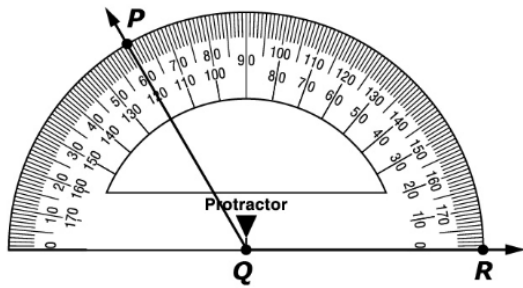
Rubric: (1 point) The student enters the correct number of degrees in the angle (e.g., 45).

Example Stem: Use the diagram to solve the problem.

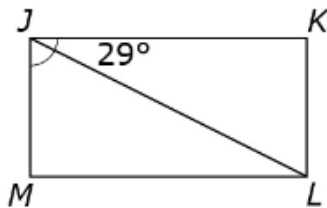
- The measure of $\angle DCE = 50^\circ$.
- The measure of $\angle ECF = 40^\circ$.
- The measure of $\angle FCG = 20^\circ$.



Example Stem: The protractor shows the measure of $\angle PQR$. Use the Add Arrow tool to divide $\angle PQR$ into two equal angles.



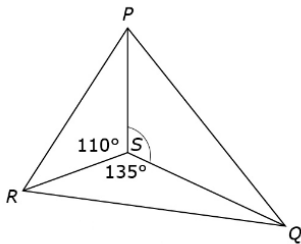
Example Stem 2: In the figure shown, $JKLM$ is a rectangle and $\angle KJL = 29^\circ$.



Enter the measure, in degrees, of $\angle MJL$.

Example Stem 4: A student made the design shown with shapes.

- The measure of $\angle PSR = 110^\circ$.
- The measure of $\angle RSQ = 135^\circ$.



Enter the measure, in degrees, of $\angle PSQ$.

Geometry

Target L [a]: Draw and identify lines and angles, and classify shapes by properties of their lines and angles. (DOK 1, 2)

Stimulus: The student is presented with a two-dimensional geometric figure.

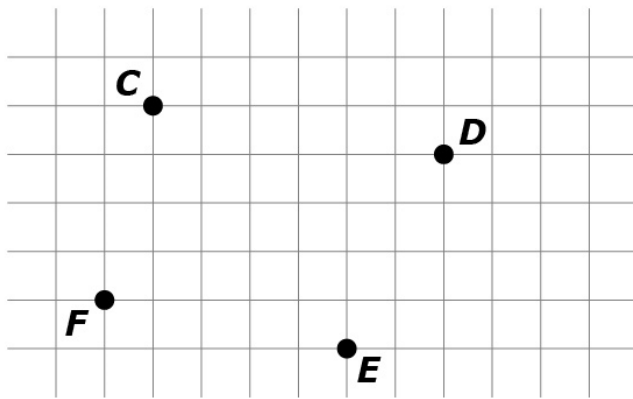
Example Stem: Click on line segment ML .



Rubric: (1 point) The student selects the correct element (e.g., line segment ML).

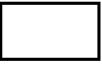


Response Type: Hot Spot

Example Stem: Use the Connect Line tool to draw line segment CD .



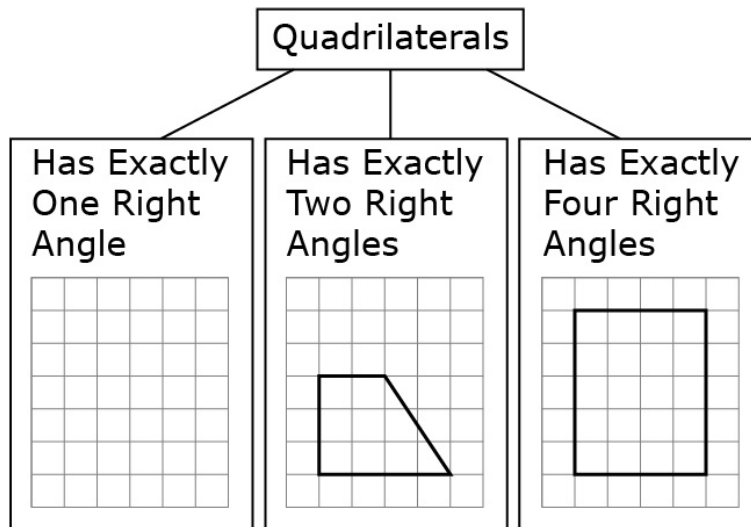
Rubric: (1 point) The student draws the correct line segment (e.g., line segment CD). **Response Type:** Graphing

Example Stem: Click in the box that matches each figure with its description. Each figure may be matched to more than one description.

	Has at least one right angle	Has at least one pair of perpendicular sides	Has at least one pair of parallel sides
 Rectangle			
 Rhombus			
 Parallelogram			

Rubric: (1 point) The student correctly classifies the given figures

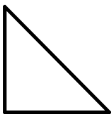

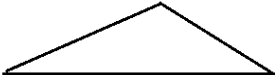
Example Stem: This chart shows one way to classify quadrilaterals. Use the Connect Line tool to draw a quadrilateral that belongs in the box labeled “Has Exactly One Right Angle.”






Rubric: (1 point) The student constructs a shape that meets the requirements of a classification schema (e.g., a quadrilateral with exactly one right angle).

Response Type: Graphing

Example Stem: Decide whether the shape appears to be a right triangle. Select Yes or No for each triangle.

	Yes	No
		
		
		

Example Stem: Determine the number of lines of symmetry for each shape. Click in the box that matches the shape to the correct number of lines of symmetry.

	None	Exactly 1	Exactly 2	Exactly 3	Exactly 4	More than 4
						
						
						

Rubric: (1 point) The student correctly identifies the number of lines of symmetry in each shape (e.g., Exactly 4, None, Exactly 3).