

<p><b>Claim 1:</b> Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.</p>	
<p>Content Domain: <b>Number and Operations—Fractions</b></p>	
<p><b>Target H [m]:</b> Understand decimal notation for fractions, and compare decimal fractions. (DOK 1, 2)</p> <p>Tasks for this target will ask students to express a fraction with denominator 10 as an equivalent fraction with denominator 100 and express fractions with either denominator as decimals. Some tasks will ask students to add fractions with unlike denominators (limited to 10 and 100). Other tasks will ask students to compare decimals to hundredths, using symbols (<math>&lt;</math>, <math>=</math>, or <math>&gt;</math>) or by location on a number line.</p> <p>Tasks written for Claim 2 or 4 will contextualize the concepts in this target using measurement conversion and displaying data as described in 4.MD Targets I and J. Problems for Claim 3 may explicitly connect addition of decimals to reasoning about fractions with denominators 10 and 100, using flawed reasoning or justification.</p>	
<p>Standards: 4.NF.C, 4.NF.C.5, 4.NF.C.6, 4.NF.C.7</p>	<p><b>4.NF.C Understand decimal notation for fractions, and compare decimal fractions.</b></p> <p><b>4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as <math>\frac{62}{100}</math>; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>4.NF.C.7</b> Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual model.</p>
<p>Related Below-Grade and Above-Grade Standards for Purposes of Planning for Vertical Scaling:</p> <p>3.NF.A, 3.NF.A.3, 3.NF.A.3a, 3.NF.A.3b, 3.NF.A.3c, 3.NF.A.3d</p> <p>5.NBT.A, 5.NBT.A.3 5.NF.A, 5.NF.A.1</p>	<p><b>Related Grade 3 Standards</b></p> <p><b>3.NF.A Develop understanding of fractions as numbers.</b></p> <p><b>3.NF.A.3</b> Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p><b>a.</b> Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p> <p><b>b.</b> Recognize and generate simple equivalent fractions, e.g., <math>\frac{1}{2} = \frac{2}{4}</math>, <math>\frac{4}{6} = \frac{2}{3}</math>. Explain why the fractions are equivalent, e.g., by using a visual fraction model.</p> <p><b>c.</b> Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form <math>3 = \frac{3}{1}</math>; recognize that <math>\frac{6}{1} = 6</math>; locate <math>\frac{4}{4}</math> and 1 at the same point of a number line diagram.</i></p>

	<p><b>d.</b> 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 <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</p> <p><b>Related Grade 5 Standards</b></p> <p><b>5.NBT.A Understand the place value system.</b></p> <p><b>5.NBT.A.3</b> Read, write, and compare decimals to thousandths.</p> <p><b>a.</b> Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., <math>347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)</math>.</p> <p><b>b.</b> Compare two decimals to thousandths based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</p> <p><b>5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.</b></p> <p><b>5.NF.A.1</b> Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, <math>2/3 + 5/4 = 8/12 + 15/12 = 23/12</math>. (In general, <math>a/b + c/d = (ad + bc)/bd</math>.)</i></p>
DOK Levels:	1, 2
<b>Achievement Level Descriptors:</b>	
<p><b>RANGE Achievement Level Descriptor (Range ALD)</b></p> <p>Target H: Understand decimal notation for fractions, and compare decimal fractions.</p>	<b>Level 1</b> No Descriptor
	<b>Level 2</b> Students should be able to express a fraction with denominator 10 as an equivalent fraction with denominator 100 and express those fractions as decimals.
	<b>Level 3</b> Students should be able to add two fractions with respective denominators 10 and 100 by first converting to two fractions with like denominators; compare two decimals to the hundredths using $>$ , $<$ , $=$ , or on a number line; and compare decimals by reasoning about their size.
	<b>Level 4</b> Students should be able to compare two decimals to the hundredths using $<$ , $>$ , and $=$ and justify the conclusions by using visual models.

Evidence Required:	<ol style="list-style-type: none"> <li>1. The student expresses a fraction with denominator 10 as an equivalent fraction with denominator 100.</li> <li>2. The student adds two fractions with respective denominators 10 and 100.</li> <li>3. The student uses decimal notation to represent fractions with denominators 10 or 100.</li> <li>4. The student locates decimal numbers to the hundredths place on a number line.</li> <li>5. The student compares two decimals to the hundredths place by reasoning about their size, using the symbols <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>.</li> </ol>
Allowable Response Types:	Matching Tables; Hot Spot; Equation/Numeric; Graphing
Allowable Stimulus Materials:	$<$ , $>$ , and $=$ symbols, fractions, decimals to the hundredths, decimal models, number lines, fraction addition problems
Construct-Relevant Vocabulary:	equivalent, equal, decimal, kilometers, meters, centimeters, kilograms, grams, liters, milliliters, length, mass, volume, number line, fraction, denominator, equation, expression
Allowable Tools:	None
Target-Specific Attributes:	<ul style="list-style-type: none"> <li>• Denominators are limited to 10 and 100. Decimals are limited to tenths and hundredths.</li> <li>• Unless otherwise specified, improper fractions and mixed numbers do not receive special treatment.</li> </ul>
Non-Targeted Constructs:	None
Accessibility Guidance:	<p>Item writers should consider the following Language and Visual Element/Design guidelines<sup>1</sup> when developing items.</p> <p>Language Key Considerations:</p> <ul style="list-style-type: none"> <li>• Use simple, clear, and easy-to-understand language needed to assess the construct or aid in the understanding of the context</li> <li>• Avoid sentences with multiple clauses</li> <li>• Use vocabulary that is at or below grade level</li> <li>• Avoid ambiguous or obscure words, idioms, jargon, unusual names and references</li> </ul> <p>Visual Elements/Design Key Considerations:</p> <ul style="list-style-type: none"> <li>• Include visual elements only if the graphic is needed to assess the construct or it aids in the understanding of the context</li> <li>• Use the simplest graphic possible with the greatest degree of contrast, and include clear, concise labels where necessary</li> <li>• Avoid crowding of details and graphics</li> </ul>

<sup>1</sup> For more information, refer to the General Accessibility Guidelines at:

<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/05/TaskItemSpecifications/Guidelines/AccessibilityandAccommodations/GeneralAccessibilityGuidelines.pdf>

	<p>Items are selected for a student’s test according to the blueprint, which selects items based on Claims and targets, not task models.</p> <p>As such, careful consideration is given to making sure fully accessible items are available to cover the content of every Claim and target, even if some item formats are not fully accessible using current technology.<sup>2</sup></p>
Development Notes:	Much of 4.NF.C.7 will be measured in Claims 2, 3, and 4.

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<sup>2</sup> For more information about student accessibility resources and policies, refer to [http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced\\_Guidelines.pdf](http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced_Guidelines.pdf)

<p><b>Task Model 1a</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i></p> <p><b>Evidence Required:</b> 1. The student expresses a fraction with denominator 10 as an equivalent fraction with denominator 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to find equivalent fractions with denominators 10 or 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Item difficulty can be adjusted via these example methods:             <ul style="list-style-type: none"> <li>○ Location of the unknown</li> <li>○ Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM1a</b> <b>Stimulus:</b> The student is presented with an equation with an unknown numerator that sets a fraction with denominator 10 equal to a fraction with denominator 100.</p> <p><b>Example Stem 1:</b> Enter the unknown number that makes this equation true.</p> $\frac{\square}{10} = \frac{40}{100}$ <p><b>Example Stem 2:</b> Enter the unknown number that makes this equation true.</p> $\frac{4}{10} = \frac{\square}{100}$ <p><b>Rubric:</b> (1 point) The student determines an equivalent fraction and enters the correct number (e.g., 4; 40).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 1b</b></p> <p><b>Response Type:</b> Matching Tables</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i></p> <p><b>Evidence Required:</b> 1. The student expresses a fraction with denominator 10 as an equivalent fraction with denominator 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to find equivalent fractions with denominators 10 or 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>Each equation shows a fraction with denominator 10 equal to a fraction with denominator 100.</li> <li>Item difficulty can be adjusted via this example method:             <ul style="list-style-type: none"> <li>Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM1b</b> <b>Stimulus:</b> The student is presented with an equation that sets a fraction with denominator 10 equal to a fraction with denominator 100.</p> <p><b>Example Stem:</b> Determine if each equation is true or false. Select True or False for each equation.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">True</th> <th style="text-align: center;">False</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><math>\frac{4}{10} = \frac{40}{100}</math></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><math>\frac{5}{10} = \frac{50}{10}</math></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><math>\frac{11}{10} = \frac{110}{100}</math></td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Rubric:</b> (1 point) The student correctly identifies all three equations as true or false, showing understanding of equivalent fractions with denominators 10 or 100 (e.g., T, F, T).</p> <p><b>Response Type:</b> Matching Tables</p>		True	False	$\frac{4}{10} = \frac{40}{100}$			$\frac{5}{10} = \frac{50}{10}$			$\frac{11}{10} = \frac{110}{100}$		
	True	False											
$\frac{4}{10} = \frac{40}{100}$													
$\frac{5}{10} = \frac{50}{10}$													
$\frac{11}{10} = \frac{110}{100}$													

<p><b>Task Model 2a</b></p> <p><b>Response Type:</b> Matching Tables</p> <p><b>DOK Level 2</b></p> <p><b>4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i></p> <p><b>Evidence Required:</b> 2. The student adds two fractions with respective denominators 10 and 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to identify correctly solved fraction addition problems.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>In each item, fraction addition equations/expressions <b>must</b> include exactly       <ul style="list-style-type: none"> <li>one addend with the denominator 10; and</li> <li>one addend with the denominator 100.</li> </ul> </li> <li>Item difficulty can be adjusted via this example method:       <ul style="list-style-type: none"> <li>Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM2a</b> <b>Stimulus:</b> The student is presented with three fraction addition equations in the answer choices.</p> <p><b>Example Stem:</b> Determine if each equation is true or false. Select True or False for each equation.</p> <table border="1" data-bbox="561 852 1406 1335"> <thead> <tr> <th></th> <th>True</th> <th>False</th> </tr> </thead> <tbody> <tr> <td><math>\frac{5}{10} + \frac{18}{100} = \frac{68}{100}</math></td> <td></td> <td></td> </tr> <tr> <td><math>\frac{11}{10} + \frac{13}{100} = \frac{24}{100}</math></td> <td></td> <td></td> </tr> <tr> <td><math>\frac{10}{10} + \frac{45}{100} = \frac{145}{100}</math></td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Rubric:</b> (1 point) The student shows the ability to add fractions with denominators 10 and 100 by correctly identifying all three equations as true or false (e.g., T, F, T).</p> <p><b>Response Type:</b> Matching Tables</p>		True	False	$\frac{5}{10} + \frac{18}{100} = \frac{68}{100}$			$\frac{11}{10} + \frac{13}{100} = \frac{24}{100}$			$\frac{10}{10} + \frac{45}{100} = \frac{145}{100}$		
	True	False											
$\frac{5}{10} + \frac{18}{100} = \frac{68}{100}$													
$\frac{11}{10} + \frac{13}{100} = \frac{24}{100}$													
$\frac{10}{10} + \frac{45}{100} = \frac{145}{100}$													

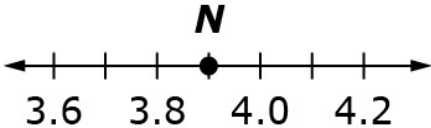
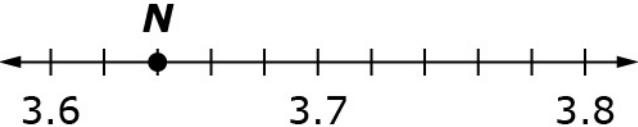
<p><b>Task Model 2b</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 2</b></p> <p><b>4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i></p> <p><b>Evidence Required:</b> 2. The student adds two fractions with respective denominators 10 and 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student solves a fraction addition problem involving fractions with denominators 10 and 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>In each item, fraction addition equations/expressions <b>must</b> include exactly       <ul style="list-style-type: none"> <li>one addend with the denominator 10; and</li> <li>one addend with the denominator 100.</li> </ul> </li> <li>The unknown number in the equation is either the sum or the numerator of the sum.</li> <li>Item difficulty can be adjusted via this example method:       <ul style="list-style-type: none"> <li>Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM2b</b> <b>Stimulus:</b> The student is presented with a fraction addition equation with an unknown number.</p> <p><b>Example Stem 1:</b> Enter the unknown numerator that makes this equation true.</p> $\frac{6}{10} + \frac{3}{100} = \frac{\square}{100}$ <p><b>Example Stem 2:</b> Enter the unknown number that makes this equation true.</p> $\frac{3}{10} + \frac{15}{100} = \square$ <p><b>Rubric:</b> (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; <math>\frac{45}{100}</math>). The student may also give a correct decimal equivalent to an unknown fraction (e.g., not possible for Example Stem 1 since the unknown is a numerator only; 0.45).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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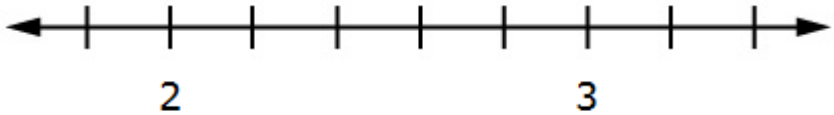
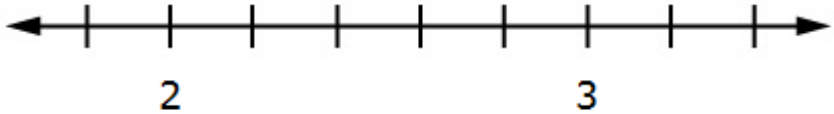


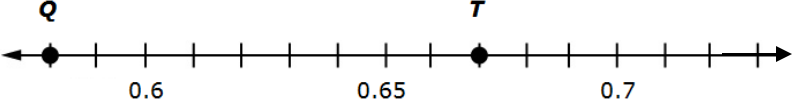
<p><b>Task Model 2c</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 2</b></p> <p><b>4.NF.A.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.</i></p> <p><b>Evidence Required:</b> 2. The student adds two fractions with respective denominators 10 and 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student solves a fraction addition problem involving fractions with denominators 10 and 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• In each item, fraction addition equations/expressions <b>must</b> include exactly       <ul style="list-style-type: none"> <li>◦ one addend with the denominator 10; and</li> <li>◦ one addend with the denominator 100.</li> </ul> </li> <li>• The unknown number in the equation is either an addend or the numerator of an addend.</li> <li>• Item difficulty can be adjusted via this example method:       <ul style="list-style-type: none"> <li>◦ Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM2c</b> <b>Stimulus:</b> The student is presented with a fraction addition equation with an unknown number.</p> <p><b>Example Stem 1:</b> Enter the unknown numerator that makes this equation true.</p> $\square + \frac{15}{100} = \frac{65}{100}$ <p><b>Example Stem 2:</b> Enter the unknown number that makes this equation true.</p> $\frac{3}{10} + \square = \frac{65}{100}$ <p><b>Rubric:</b> (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., 5; <math>\frac{35}{100}</math>). The student may also give a correct decimal equivalent to an unknown fraction (e.g., not possible for Example Stem 1 since the unknown is a numerator only; 0.35).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 3a</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>Evidence Required:</b> 3. The student uses decimal notation to represent fractions with denominators 10 or 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student uses decimal notation to represent fractions with denominators 10 or 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Item difficulty can be adjusted via this example method:             <ul style="list-style-type: none"> <li>◦ Use of fractions greater than 1</li> </ul> </li> </ul> <p><b>TM3a</b> <b>Stimulus:</b> The student is presented with a fraction with denominator 10 or 100.</p> <p><b>Example Stem:</b> Enter a decimal that is equivalent to <math>\frac{3}{10}</math>.</p> <p><b>Rubric:</b> (1 point) The student determines an equivalent decimal representation of the given fraction and enters the correct decimal (e.g., 0.3).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 3b</b></p> <p><b>Response Type:</b> Matching Tables</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>Evidence Required:</b> 3. The student uses decimal notation to represent fractions with denominators 10 or 100.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student selects equivalent representations of decimals and fractions with the denominators 10 or 100.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Answer choices should be in the form of equations.</li> <li>• Each answer choice should reflect a different fraction and decimal.</li> <li>• Item difficulty can be adjusted via this example method:             <ul style="list-style-type: none"> <li>◦ Use of fractions/decimals greater than 1</li> </ul> </li> </ul> <p><b>TM3b</b> <b>Stimulus:</b> The student is presented with three equations that set fractions with denominators of 10 or 100 equal to decimals, in the answer choices.</p> <p><b>Example Stem:</b> Determine if each equation is true or false. Select True or False for each equation.</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>True</th> <th>False</th> </tr> </thead> <tbody> <tr> <td><math>\frac{85}{100} = 85.100</math></td> <td></td> <td></td> </tr> <tr> <td><math>\frac{20}{100} = 0.2</math></td> <td></td> <td></td> </tr> <tr> <td><math>\frac{14}{100} = 0.014</math></td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Rubric:</b> (1 point) The student correctly identifies all three equations as true or false, showing the ability to translate between decimal and fraction representations (e.g., F, T, F).</p> <p><b>Response Type:</b> Matching Tables</p>		True	False	$\frac{85}{100} = 85.100$			$\frac{20}{100} = 0.2$			$\frac{14}{100} = 0.014$		
	True	False											
$\frac{85}{100} = 85.100$													
$\frac{20}{100} = 0.2$													
$\frac{14}{100} = 0.014$													

<p><b>Task Model 4a</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as <math>\frac{62}{100}</math>; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>Evidence Required:</b> 4. The student locates decimal numbers to the hundredths place on a number line.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to identify the decimal value of a point on a number line.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Each item presents a decimal number line.</li> <li>• Items must not require students to select/identify decimals that go beyond the hundredths place.</li> </ul> <p><b>TM4a</b> <b>Stimulus:</b> The student is presented with a number line with a point marked on a tick mark or between two tick marks and labeled with a variable.</p> <p><b>Example Stem 1:</b> Enter the decimal value of the unknown number located at point <i>N</i>.</p>  <p><b>Example Stem 2:</b> Enter the decimal value of the unknown number located at point <i>N</i>.</p>  <p><b>Rubric:</b> (1 point) The student locates a decimal number on a number line and enters the correct value of the variable (e.g., 3.9; 3.64).</p> <p><b>Response Type:</b> Equation/Numeric</p>
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<p><b>Task Model 4b</b></p> <p><b>Response Type:</b> <b>Graphing</b></p> <p><b>DOK Level 2</b></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 62/100 as 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>Evidence Required:</b> 4. The student locates decimal numbers to the hundredths place on a number line.</p> <p><b>Tools:</b> None</p> <p><b>Accessibility Note:</b> Graphing items are not currently able to be Brailled. Minimize the number of items developed to this TM.</p>	<p><b>Prompt Features:</b> The student is prompted to locate a point on a decimal number line.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Each item presents a number line.</li> <li>• Items must not require students to select/identify decimals that go beyond the hundredths place.</li> </ul> <p><b>TM4b</b></p> <p><b>Stimulus:</b> The student is presented with a number line and a number whose value is located at a tick mark or between two tick marks on the number line.</p> <p><b>Example Stem 1:</b> Use the Add Point tool to put a point on the number line to show the location of 2.2.</p>  <p><b>Rubric:</b> (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).</p> <p><b>Response Type:</b> Graphing</p> <p><b>Example Stem 2:</b> Use the Add Point tool to put a point on the number line to show the location of 2.32.</p>  <p><b>Rubric:</b> (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).</p> <p><b>Response Type:</b> Graphing</p>
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<p><b>Task Model 4c</b></p> <p><b>Response Type:</b> Equation/Numeric</p> <p><b>DOK Level 1</b></p> <p><b>4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p><b>Evidence Required:</b> 4. The student locates decimal numbers to the hundredths place on a number line.</p> <p><b>Tools:</b> None</p>	<p><b>Prompt Features:</b> The student is prompted to select the correct location of decimal numbers to the hundredths place on a number line.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>• Each item presents a decimal number line with two labeled points above different tick marks.</li> <li>• Items must not require students to select/identify decimals that go beyond the hundredths place.</li> </ul> <p><b>TM4c</b> <b>Stimulus:</b> The student is presented with a number line which includes two labeled points.</p> <p><b>Example Stem:</b> Use this number line to identify the numbers that each letter represents.</p> <div style="text-align: center;">  </div> <p>Enter the numbers represented by <i>Q</i> and <i>T</i> in the response boxes.</p> <p><b>Rubric:</b> (1 point) The student shows an understanding of decimal number lines by correctly identifying the value of both letters on the number line (e.g., 0.58 and 0.67).</p> <p><b>Response Type:</b> Equation/Numeric (2 labeled response boxes)</p>
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<p><b>Task Model 5</b></p> <p><b>Response Type:</b> Matching Table</p> <p><b>DOK Level 2</b></p> <p><b>4.NF.C.7</b> Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual model.</p> <p><b>Evidence Required:</b> 5. The student compares two decimals to the hundredths place by reasoning about their size, using the symbols <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>.</p> <p><b>Tools:</b> None</p> <p><b>Version 3 Update:</b> Changed TM5 from an equation/numeric response type to a matching table response type. Updated the stimulus and stem to match the new format.</p>	<p><b>Prompt Features:</b> The student identifies the correct symbol (<math>&lt;</math>, <math>&gt;</math>, or <math>=</math>) to compare two decimals.</p> <p><b>Stimulus Guidelines:</b></p> <ul style="list-style-type: none"> <li>Item difficulty can be adjusted via these example methods: <ul style="list-style-type: none"> <li>Both decimals have the same number of places represented before and after the decimal point.</li> <li>Decimals have a different number of places represented before the decimal point, but the same number after the decimal point.</li> <li>Decimals have a different number of places represented after the decimal point.</li> </ul> </li> </ul> <p><b>TM5</b> <b>Stimulus:</b> The student is presented with two pairs of decimal numbers, up to the hundredths place and directed to compare them using (<math>&lt;</math>, <math>&gt;</math>, or <math>=</math>).</p> <p><b>Example Stem:</b> Select the symbol (<math>&lt;</math>, <math>&gt;</math>, or <math>=</math>) that correctly compares each pair of numbers.</p> <table border="1" data-bbox="656 984 1205 1180"> <thead> <tr> <th></th> <th><math>&lt;</math></th> <th><math>&gt;</math></th> <th><math>=</math></th> </tr> </thead> <tbody> <tr> <td>0.09 <math>\square</math> 0.7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.2 <math>\square</math> 0.37</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Rubric:</b> (1 point) The student identifies the correct symbol to compare pairs of decimals (e.g., <math>&lt;</math>, <math>&gt;</math>).</p> <p><b>Response Type:</b> Matching Table</p>		$<$	$>$	$=$	0.09 $\square$ 0.7				1.2 $\square$ 0.37			
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0.09 $\square$ 0.7													
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