

<p>Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.</p>	
<p>Content Domain: Number and Operations in Base Ten</p>	
<p>Target D: [m] Perform operations with multi-digit whole numbers and with decimals to hundredths. (DOK 1, 2)</p> <p>Some tasks associated with this target will be non-contextual computation problems that assess fluency in multiplication of multi-digit whole numbers.</p> <p>Other tasks will ask students to find quotients of whole numbers with up to four-digit dividends and two-digit divisors and to use the four operations on decimals to hundredths. These tasks may be presented in the context of measurement conversion (5.MD Target G). Other tasks should highlight students' understanding of the relationships between operations and use of place-value strategies, which may be done as part of tasks developed for Claim 3.</p>	
<p>Standards:</p> <p>5.NBT.B, 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7</p>	<p>5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.</p> <p>5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p>5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>
<p>Related Below-Grade and Above-Grade Standards for Purposes of Planning for Vertical Scaling:</p> <p>4.NBT.B, 4.NBT.B.4, 4.NBT.B.5, 4.NBT.B.6</p>	<p>Related Grade 4 Standards</p> <p>4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p>4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>

6.NS.B, 6.NS.B.2, 6.NS.B.3	<p>4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>Related Grade 6 Standards</p> <p>6.NS.B Compute fluently with multi-digit numbers and find common factors and multiples.</p> <p>6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.</p> <p>6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>
DOK Level(s):	1, 2
Achievement LEVEL Descriptors:	
<p>RANGE Achievement Level Descriptor (Range ALD)</p> <p>Target D: Perform operations with multi-digit whole numbers and with decimals to the hundredths.</p>	<p>Level 1 Students should be able to multiply one- and two-digit whole numbers and find whole-number quotients of whole numbers with up to three-digit dividends and one-digit divisors, using arrays or area models. They should be able to perform the four operations on decimals to the tenths and a whole number, e.g., 1.3×7.</p> <p>Level 2 Students should be able to multiply three- and four-digit whole numbers; find whole-number quotients of whole numbers with up to three-digit dividends and two-digit divisors; and perform the four operations on decimals to the tenths or on decimals to the hundredths and a whole number, e.g., 3.42×12.</p> <p>Level 3 Students should be able to fluently multiply multi-digit whole numbers using the standard algorithm, find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, and perform the four operations on decimals to the hundredths. They should be able to relate the strategy to a written method and explain the reasoning used.</p> <p>Level 4 No Descriptor</p>
Evidence Required:	<ol style="list-style-type: none"> 1. The student multiplies multi-digit whole numbers. 2. The student determines whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Allowable Response Types:	Multiple Choice, single correct response; Equation/Numeric
Allowable Stimulus Materials:	base-10 array model, equations
Construct-Relevant Vocabulary:	array, area model, equation, quotient, product, factor, divisor, dividend, remainder
Allowable Tools:	None
Target-Specific Attributes:	For division problems with whole numbers, up to and including four-digit dividends and two-digit divisors. Add, subtract, multiply, and divide decimals to the hundredths.
Non-Targeted Constructs:	None
Accessibility Guidance:	<p>Item writers should consider the following Language and Visual Element/Design guidelines¹ when developing items.</p> <p>Language Key Considerations:</p> <ul style="list-style-type: none"> • Use simple, clear, and easy-to-understand language needed to assess the construct or aid in the understanding of the context • Avoid sentences with multiple clauses • Use vocabulary that is at or below grade level • Avoid ambiguous or obscure words, idioms, jargon, unusual names and references <p>Visual Elements/Design Key Considerations:</p> <ul style="list-style-type: none"> • Include visual elements only if the graphic is needed to assess the construct or it aids in the understanding of the context • Use the simplest graphic possible with the greatest degree of contrast, and include clear, concise labels where necessary • Avoid crowding of details and graphics <p>Items are selected for a student's test according to the blueprint, which selects items based on Claims and targets, not task models. 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.²</p>
Development Notes:	Regarding 5.NBT.B.6, items that assess determining the quotient of whole numbers, without actually referencing a particular strategy, should be limited to no more than 10% of the total number of items developed for this claim, target, and standard. Illustrating and explaining the calculation using equations,

¹ 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>

² For more information about student accessibility resources and policies, refer to

http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/08/SmarterBalanced_Guidelines.pdf

	<p>rectangular arrays, and/or area models will be assessed in Claim 3.</p> <p>Regarding 5.NBT.B.7, items that assess determining the sum, difference, product, and quotient of decimals, without actually referencing a particular strategy, should be limited to no more than 10% of the total number of items developed for this claim, target, and standard.</p>
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<p>Task Model 1</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 1</p> <p>5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p>Evidence Required: 1. The student multiplies multi-digit whole numbers.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to enter the product of a multiplication problem.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Items use whole numbers only. • Total number of digits in the two factors must be six or fewer. • Item difficulty may be adjusted via this example method: <ul style="list-style-type: none"> ◦ Using factors with more or fewer digits <p>TM1a Stimulus: The student is presented with a horizontal multiplication problem.</p> <p>Example Stem: Enter the product. 4×39</p> <p>TM1b Stimulus: The student is presented with a vertical multiplication problem.</p> <p>Example Stem: Enter the product.</p> $\begin{array}{r} 4238 \\ \times \quad 32 \\ \hline \end{array}$ <p>Rubric: (1 point) The student correctly solves the multiplication problem (e.g., 156; 135,616).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 2a–b</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 1</p> <p>5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>Evidence Required: 2. The student determines whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to enter the quotient of a division problem.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Items use whole numbers only. • Items include up to four-digit dividends and up to two-digit divisors. • Item difficulty may be adjusted via this example method: <ul style="list-style-type: none"> ◦ Using numbers with more or fewer digits <p>TM2a Stimulus: The student is presented with a horizontal division problem using the \div symbol.</p> <p>Example Stem: Enter the quotient. $335 \div 5$</p> <p>TM2b Stimulus: The student is presented with a division problem using the $\overline{)###}$ symbol.</p> <p>Example Stem: Enter the quotient. $25 \overline{)3375}$</p> <p>Rubric: (1 point) The student correctly solves the division problem (e.g., 67; 135).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 2c</p> <p>Response Type: Multiple Choice, single correct response</p> <p>DOK Level 1</p> <p>5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>Evidence Required: 2. The student determines whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to select an equation that has the same unknown as a given division equation.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Items include multi-digit whole numbers, up to and including four-digit dividends and two-digit divisors. • Item difficulty may be adjusted via this example method: <ul style="list-style-type: none"> ◦ Writing the expression with the unknown on the opposite side as presented in the given equation (e.g., $228 = \square \times 12$ and $228 = \square \div 12$) <p>TM2c Stimulus: The student is presented with a division equation with an unknown quotient.</p> <p>Example Stem: Which equation has the same unknown value as $228 \div 12 = \square$?</p> <p>A. $228 \times \square = 12$</p> <p>B. $12 \times \square = 228$</p> <p>C. $\square \div 12 = 228$</p> <p>D. $\square \div 228 = 12$</p> <p>Rubric: (1 point) The student selects the correct option (e.g., B).</p> <p>Response Type: Multiple Choice, single correct response</p>
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<p>Task Model 2d</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 2</p> <p>5.NBT.B Perform operations with multi-digit whole numbers and with decimals to hundredths.</p> <p>Evidence Required: 2. The student determines whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to enter an unknown value in a division equation.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Unknown divisor or dividend is represented with a \square. • Items include multi-digit whole numbers, up to and including four-digit dividends and two-digit divisors. <p>TM2d Stimulus: The student is presented with a division equation with an unknown divisor or dividend.</p> <p>Example Stem: Enter the unknown value in the equation.</p> $345 \div \square = 69$ <p>Rubric: (1 point) The student enters the correct number (e.g., 5).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 3a–c</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 1</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to enter the solution to a decimal calculation.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Decimals up to the hundredths place. • Quotients cannot exceed decimals to the hundredths. • Item difficulty may be adjusted via these example methods: <ul style="list-style-type: none"> ○ Varying the number of digits in a decimal number ○ Using numbers with the same or a differing number of decimal places <p>TM3a Stimulus: The student is presented with a decimal addition problem with up to four addends.</p> <p>Example Stem: Enter the sum.</p> $16 + 5.67 + 8.3$ <p>Rubric: (1 point) The student correctly calculates the solution to a problem involving decimals (e.g., 29.97).</p> <p>Response Type: Equation/Numeric</p> <p>TM3b Stimulus: The student is presented with a decimal subtraction problem.</p> <p>Example Stem: Enter the difference.</p> $20.50 - 3.65$ <p>Rubric: (1 point) The student correctly calculates the solution to a problem involving decimals (e.g., 16.85).</p> <p>Response Type: Equation/Numeric</p> <p>TM3c Stimulus: The student is presented with a decimal multiplication problem.</p> <p>Example Stem: Enter the product.</p> 7.86×3 <p>Rubric: (1 point) The student correctly calculates the solution to a problem involving decimals (e.g., 23.58).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 3d</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 1</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>TM3d</p> <p>Stimulus: The student is presented with a decimal division problem.</p> <p>Example Stem 1: Enter the quotient.</p> <p>$8.40 \div 5$</p> <p>Example Stem 2: Enter the quotient.</p> <p>$7 \div 0.2$</p> <p>Rubric: (1 point) The student correctly calculates the solution to a problem involving decimals (e.g., 1.68; 35).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 3e</p> <p>Response Type: Multiple Choice, single correct response</p> <p>DOK Level 1</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to select an equation that has the same unknown as a given addition/subtraction equation.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Decimals may be to the hundredths place. • Item difficulty may be adjusted via these example methods: <ul style="list-style-type: none"> ○ Changing location of the unknown value in the given equation ○ Placing the operation on the left or right side of the equation <p>TM3e</p> <p>Stimulus: The student is presented with a decimal addition or subtraction equation involving an unknown value.</p> <p>Example Stem: Which equation has the same unknown value as $33.74 - 18.9 = \square$?</p> <p>A. $18.9 + \square = 33.74$</p> <p>B. $33.74 + \square = 18.9$</p> <p>C. $\square - 33.74 = 18.9$</p> <p>D. $\square - 18.9 = 33.74$</p> <p>Rubric: (1 point) The student selects the correct option (e.g., A).</p> <p>Response Type: Multiple Choice, single correct response</p>
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<p>Task Model 3f</p> <p>Response Type: Equation/Numeric</p> <p>DOK Level 2</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to enter the unknown value in a decimal addition or subtraction equation.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> • Decimals may be to the hundredths place. • In addition problems, the unknown value should be one of the addends. • In subtraction problems, the unknown value should be the minuend or subtrahend. • Item difficulty can be varied via these example methods: <ul style="list-style-type: none"> ○ Varying the length of the numbers ○ Having numbers with the same or a differing number of decimal places ○ Having the result on the left or right side of the equal sign <p>TM3f</p> <p>Stimulus: The student is presented with a decimal addition or subtraction equation with an unknown value.</p> <p>Example Stem 1: Enter the unknown value in the equation.</p> $18.9 + \square = 33.74$ <p>Example Stem 2: Enter the unknown value in the equation.</p> $\square - 18.9 = 33.74$ <p>Rubric: (1 point) The student enters the correct number (e.g., 14.84; 52.64).</p> <p>Response Type: Equation/Numeric</p>
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<p>Task Model 3g–h</p> <p>Response Type: Multiple Choice, single correct response</p> <p>DOK Level 1</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to select an expression or equation involving multiplication of fractions that shows a correct strategy for multiplication of decimals.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> Decimals may be to the hundredths place. Numbers may be less than or greater than 1. <p>TM3g Stimulus: The student is presented with a decimal multiplication expression and answer choices that show equivalent fraction multiplication expressions.</p> <p>Example Stem: Which expression is equal to 0.47×0.08?</p> <p>A. $\frac{47}{10} \times \frac{8}{10}$</p> <p>B. $\frac{47}{10} \times \frac{8}{100}$</p> <p>C. $\frac{47}{100} \times \frac{8}{10}$</p> <p>D. $\frac{47}{100} \times \frac{8}{100}$</p> <p>TM3h Stimulus: The student is presented with a decimal multiplication expression and answer choices that show equivalent fraction multiplication equations.</p> <p>Example Stem: Which equation shows a correct strategy and product for the expression shown? 0.4×0.8</p> <p>A. $\frac{4}{10} \times \frac{8}{10} = \frac{32}{10}$</p> <p>B. $\frac{4}{10} \times \frac{8}{10} = \frac{32}{100}$</p> <p>C. $\frac{4}{100} \times \frac{8}{100} = \frac{32}{100}$</p> <p>D. $\frac{4}{100} \times \frac{8}{100} = \frac{32}{10,000}$</p> <p>Rubric: (1 point) The student selects the correct option (e.g., D; B).</p> <p>Response Type: Multiple Choice, single correct response</p>
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<p>Task Model 3i</p> <p>Response Type: Multiple Choice, single correct response</p> <p>DOK Level 1</p> <p>5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Evidence Required: 3. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p>Tools: None</p>	<p>Prompt Features: The student is prompted to select an expression that shows a correct strategy for division of decimals based on place value.</p> <p>Stimulus Guidelines:</p> <ul style="list-style-type: none"> Decimals may be to the hundredths place. <p>TM3i Stimulus: The student is presented with a decimal division expression.</p> <p>Example Stem: Which expression is equal to $16.25 \div 2.5$?</p> <p>A. $1.625 \div 25$ B. $16.25 \div 25$ C. $162.5 \div 25$ D. $1625 \div 25$</p> <p>Rubric: (1 point) The student selects the correct option (e.g., C).</p> <p>Response Type: Multiple Choice, single correct response</p>
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