Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	
Content Domain: **Number & Operations in Base Ten**	
Target E [m]: Use place value understanding and properties of operations to perform multi-digit arithmetic. (DOK 1) Tasks associated with this target will be non-contextual computation problems that assess fluency in addition and subtraction within 1000. Some of these tasks should provide information about the strategies and/or algorithms students are using, in order to ensure that they are general (based on place value and properties of operations). Other tasks will assess either rounding (with an emphasis on conceptual understanding, if possible) or the more important multi-digit computations specified in 3.NBT.A.3. Because the answers to such multiplications are easily found by mnemonic tricks, these items should be of a conceptual nature to assess reasoning with place value and properties of operations.	
Standards: 3.NBT.A, 3.NBT.A.1, 3.NBT.A.2, 3.NBT.A.3	**3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.** **3.NBT.A.1** Use place value understanding to round whole numbers to the nearest 10 or 100. **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **3.NBT.A.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.
Related Below-Grade and Above-Grade Standards for Purposes of Planning for Vertical Scaling: 2.NBT.A, 2.NBT.A.2, 2.NBT.B 2.NBT.B.5, 2.NBT.B.6, 2.NBT.B.7, 2.NBT.B.9 4.NBT.A,4.NBT.A.1, 4.NBT.A.3, 4.NBT.B, 4.NBT.B.4	**Related Grade 2 Standards** **2.NBT.A Understand place value.** **2.NBT.A.2** Count within 1000; skip-count by 5s, 10s, and 100s. **2.NBT.B Use place value understanding and properties of operations to add and subtract.** **2.NBT.B.5** Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.NBT.B.6** Add up to four two-digit numbers using strategies based on place value and properties of operations. **2.NBT.B.7** Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones;

	and sometimes it is necessary to compose or decompose tens or hundreds. **2.NBT.B.9** Explain why addition and subtraction strategies work, using place value and the properties of operations. **Related Grade 4 Standards** **4.NBT.A Generalize place value understanding for multi-digit whole numbers.** **4.NBT.A1** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division. **4.NBT.A.3** Use place value understanding to round multi-digit whole numbers to any place. **4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.** **4.NBT.B.4** Fluently add and subtract multi-digit whole numbers using the standard algorithm.
DOK Levels:	1
Achievement Level Descriptors	
RANGE Achievement Level Descriptor (Range ALD) Target E: Use place value understanding and properties of arithmetic to perform multi-digit arithmetic.	**Level 1** Students should be able to add and subtract within 100, using strategies and algorithms based on place value understanding. They should be able to round two-digit whole numbers to the nearest 10.
	Level 2 Students should be able to add and subtract within 1,000, using strategies and algorithms based on the relationship between addition and subtraction. They should be able to round whole numbers to the nearest 100 and multiply one-digit whole numbers by multiples of 10 in the range of 10–90.
	Level 3 Students should be able to fluently add and subtract within 1,000, using strategies or algorithms based on place value understanding, properties of arithmetic, and/or the relationship between addition and subtraction.
	Level 4 Students should be able to use multiple strategies to fluently add and subtract within 1,000.
Evidence Required:	1. The student solves non-contextual problems using place value understanding to round whole numbers to the nearest 10 or 100. 2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. 3. The student solves non-contextual computation problems by multiplying one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and

	properties of operations.
Allowable Response Types:	Equation/Numeric
Allowable Stimulus Materials:	None
Construct-Relevant Vocabulary:	round to the nearest, add, subtract, sum, difference, multiply, place value, addend
Allowable Tools:	None
Target Specific Attributes:	Standard 3.NBT.A.3 allows the product of the multiplication equation to be outside the range of 0-100. Equations are limited to multiplying a one-digit number by a multiple of 10 within the range of 10-90.
Non-Targeted Constructs:	None
Accessibility Guidance:	Item writers should consider the following Language and Visual Element/Design guidelines[1] when developing items. Language Key Considerations: • 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 Visual Elements/Design Key Considerations: • 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 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]
Development Notes:	None

[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

Task Model 1 **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.1** Use place value understanding to round whole numbers to the nearest 10 or 100. **Evidence Required:** 1. The student solves non-contextual problems using place value understanding to round whole numbers to the nearest 10 or 100. **Tools:** None	**Prompt Features:** The student is prompted to solve place value problems that include rounding whole numbers to the nearest 10 or 100. **Stimulus Guidelines:** • Follow stated guidelines on allowable number ranges. • Item difficulty can be adjusted via these example methods: o Two-digit number that rounds to the nearest ten o Three-digit number that rounds to the nearest hundred o Three-digit number that rounds to the nearest ten **TM1a** **Stimulus:** The student is presented with a two- or three-digit number, and then asked to round to the nearest ten or hundred. **Example Stem 1:** What is 44 rounded to the nearest ten? **Example Stem 2:** What is 456 rounded to the nearest ten? **Example Stem 3:** What is 726 rounded to the nearest hundred? **Rubric:** (1 point) The student correctly enters the number rounded to the given place (e.g., 40; 460; 700). **Response Type:** Equation/Numeric

Task Model 1 **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.1** Use place value understanding to round whole numbers to the nearest 10 or 100. **Evidence Required:** 1. The student solves non-contextual problems using place value understanding to round whole numbers to the nearest 10 or 100. **Tools:** None	**Prompt Features:** The student is prompted to solve place value problems that include entering the least or greatest whole number that rounds to a given two- or three-digit whole number. **Stimulus Guidelines:** • Follow stated guidelines on allowable number ranges. • Item difficulty can be adjusted via these example methods: o Identifies the least or greatest number that rounds to the nearest ten in a two-digit number. o Identifies the least or greatest number that rounds to the nearest ten in a three-digit number. o Identifies the least or greatest number that rounds to the nearest hundred in a three-digit number. **TM1b** **Stimulus:** The student is given a two- or three-digit whole number rounded to the nearest ten or hundred. **Example Stem 1:** When rounding to the nearest ten, what is the **least** whole number that rounds to 50? **Example Stem 2:** When rounding to the nearest ten, what is the **greatest** whole number that rounds to 50? **Example Stem 3:** When rounding to the nearest hundred, what is the **least** whole number that rounds to 500? **Example Stem 4:** When rounding to the nearest hundred, what is the **greatest** whole number that rounds to 500? **Example Stem 5:** When rounding to the nearest ten, what is the **least** whole number that rounds to 520? **Example Stem 6:** When rounding to the nearest ten, what is the **greatest** whole number that rounds to 520? **Rubric:** (1 point) The student correctly enters the least/greatest whole number that rounds to the given number (e.g., 45; 54; 450; 549; 515; 524). **Response Type:** Equation/Numeric **Source:** http://www.illustrativemathematics.org/3.NBT.A.1

Task Model 2a-b **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Evidence Required:** 2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Tools:** None	**Prompt Features:** The student is prompted to find the unknown number that makes an equation true by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Stimulus Guidelines:** • The student is presented with a non-contextual addition or subtraction equation. • Follow any stated guidelines on allowable number ranges. • Unknown numbers are represented by a box (☐). • Item difficulty can be adjusted via these example methods: o Number of addends in addition equation o Requires regrouping or not o Sum or difference is on the left or right side of the equation o Number of digits in addends (2 digits vs. 3 digits) and number of digits in subtrahends & minuends (2 digits vs. 3 digits) **TM2a** **Stimulus:** The student is presented with a non-contextual, straightforward addition equation with two to four addends. **Example Stem 1:** What unknown number makes this equation true? 763 + 29 = □ **Example Stem 2:** What unknown number makes this equation true? □ = 763 + 29 **TM2b** **Stimulus:** The student is presented with a non-contextual, straightforward subtraction equation with two to four subtrahends. **Example Stem 1:** What unknown number makes this equation true? 763 – 96 = □ **Example Stem 2:** What unknown number makes this equation true? □ = 763 – 96 **Rubric:** The student enters the correct difference (e.g., 792; 792; 667; 667). **Response Type:** Equation/Numeric

Task Model 2c-d **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Evidence Required:** 2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Tools:** None	**Prompt Features:** The student is prompted to find the unknown number that makes an equation true by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Stimulus Guidelines:** • The student is presented with a non-contextual addition or subtraction equation. • Follow any stated guidelines on allowable number ranges. • Item difficulty can be adjusted via these example methods: o One addend/subtrahend is close to 10 or 100. o Numbers in the ones place combine to make 10, or numbers in the tens place combine to make 100. o Subtract from the hundreds, tens or ones. o Unknown number may be presented on either side of the equation. **TM2c** **Stimulus:** The student is presented with a non-contextual addition equation. One addend is within 5 of 100 and one addend is 100. **Example Stem 1:** What unknown number makes this equation true? 763 + 97 = 763 + 100 – □ **Example Stem 2:** What unknown number makes this equation true? 763 + 104 = 763 + 100 + □ **TM2d** **Stimulus:** The student is presented with a non-contextual addition equation. One addend is within 4 of multiple of ten and one addend is a multiple of 100. **Example Stem 1:** What unknown number makes this equation true? 763 + 7 = 700 + □ **Example Stem 2:** What unknown number makes this equation true? 763 + 43 = 800 + □ **Rubric:** The student enters the correct number to make the equation true (e.g., 3; 4; 70; 6). **Response Type:** Equation/Numeric

Task Model 2e-f **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.2** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Evidence Required:** 2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. **Tools:** None **Version 3 Update**: Edited wording and example stems for TM2f.	**TM2e** **Stimulus:** The student is presented with a non-contextual subtraction equation. One subtrahend is within 5 of 100 and one subtrahend is 100. **Example Stem 1:** What unknown number makes this equation true? 763 – 97 = 763 – 100 + □ **Example Stem 2:** What unknown number makes this equation true? 763 – 104 = 763 – 100 - □ **TM2f** **Stimulus:** The student is presented with a non-contextual subtraction equation. One subtrahend is a multiple of 10. **Example Stem 1:** What unknown number makes this equation true? 763 – 43 = 763 – 40 – □ **Example Stem 2:** What unknown number makes this equation true? 760 – 70 = 760 – 60 – □ **Rubric:** The student enters the correct number to make the equation true (e.g., 3; 4; 3; 10). **Response Type:** Equation/Numeric

Task Model 2g

Response Type: Matching Tables

DOK Level 1

3.NBT.A.2
Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Evidence Required:
2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Tools: None

Version 3 Update: Added new TM2g.

Prompt Features: The student categorizes sums and differences within 1000 as either closer to a given number or greater than/less than a given number.

Stimulus Guidelines:

- Sums and differences are selected to encourage appropriate uses of rounding as a strategy.

TM2g
Stimulus: The student is presented with a table and sums or differences (but not both), and classifies them as closer to a given number or greater than/less than a given number.

Example Stem 1: Select whether each sum is greater than 80 or less than 80.

	Greater than 80	Less than 80
41 + 42		
33 + 35		
41 + 36		
46 + 37		

Example Stem 2: Select whether each difference is greater than 40 or less than 40.

	Greater than 40	Less than 40
83 – 40		
85 – 43		
83 – 45		
80 – 43		

Example Stem 3: Select whether each difference is greater than 40 or less than 40.

	Greater than 40	Less than 40
80 – 49		
80 – 43		
80 – 38		

Rubric: (1 point) The student enters the correct value for the unknown (e.g., GLLG; GGLL; LLG).

Response Type: Matching Tables

Task Model 2g

Response Type: Matching Tables

DOK Level 1

3.NBT.A.2
Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Evidence Required:
2. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Tools: None

Version 3 Update: Added new TM2g.

Example Stem 4: Identify whether each sum is closer to 70 or closer to 80.

	Closer to 70	Closer to 80
32 + 47		
26 + 51		
35 + 37		

Example Stem 5: Click the table to show whether each sum is closer to 400 or closer to 500.

	Closer to 400	Closer to 500
302 + 105		
398 + 49		
212 + 247		
196 + 251		

Rubric: (1 point) The student enters the correct value for the unknown (e.g., 80, 80, 70; 400, 400, 500, 400).

Response Type: Matching Tables

Task Model 3a **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.A.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. **Evidence Required:** 3. The student solves non-contextual computation problems by multiplying one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations. **Tools:** None	**Prompt Features:** The student is prompted to find the unknown number that makes a multiplication equation true involving multiplication of single-digit whole numbers by multiples of 10. **Stimulus Guidelines:** • Multiplication problems are presented as equations with a box (☐) for the unknown factor or product. • Solutions for multiplication problems must be **within** 1000. • Item difficulty can be adjusted via these example methods: o Single-digit factor is multiplied by a two-digit multiple of ten. The product is unknown. o Single-digit factor is multiplied by an unknown. The product is a multiple of ten. o Two-digit multiple of ten is multiplied by an unknown single-digit number. The product is known. o Product is listed first in the equation. **TM3a** **Stimulus:** The student is presented with a multiplication equation including an unknown factor or product. **Example Stem 1:** What unknown number makes the equation true? 5 x 80 = □ **Example Stem 2:** What unknown number makes the equation true? 3 x □ = 180 **Example Stem 3:** What unknown number makes the equation true? 180 = □ x 3 **Example Stem 4:** What unknown number makes the equation true? 60 x □ = 540 **Example Stem 5:** What unknown number makes the equation true? 540 = □ x 60 **Rubric:** (1 point) The student enters the correct product (e.g., 400; 60; 60; 9; 9). **Response Type:** Equation/Numeric

Task Model 3b **Response Type: Equation / Numeric** **DOK Level 1** **3.NBT.B.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. **Evidence Required:** 3. The student solves non-contextual computation problems by multiplying one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations. **Tools:** None	**Prompt Features:** The student is prompted to find the unknown number that makes a multiplication equation true involving multiplication of single-digit whole numbers by multiples of 10. **Stimulus Guidelines:** • Multiplication problems are presented as equations with a box (☐) for the unknown factor or product. • Solutions for multiplication problems must be **within** 1000. • Item difficulty can be adjusted via these example methods: o Three single-digit factors when multiplied together have a product that is a multiple of ten. o Decompose a multiple of ten to make a three factor multiplication problem. **TM3b** **Stimulus:** A whole number multiplication equation presented horizontally including three factors. **Example Stem:** What unknown number makes the equation true? (6 x 5) x □ = 240 **Rubric:** (1 point) The student enters the correct value for the unknown (e.g., 8). **Response Type:** Equation/Numeric