

Took Medal 1	Dremet Conturner The student is premeted to add two or more
Task Model 1	Prompt Features: The student is prompted to add two or more multi-digit whole numbers, or to subtract two multi-digit whole
Response Type: Equation/Numeric	numbers.
	Stimulus Guidelines:
DOK Level 1	 Follow any stated guidelines on allowable number ranges.
4.NBT.B.4	 At least one number in each item should be at least four
Fluently add and subtract	digits.
multi-digit whole numbers using the standard algorithm.	 Present numbers horizontally (4325+654=?), vertically, or with words (what is the difference between 4003 and 1486?).
	 Item difficulty can be adjusted via these example
Evidence Required:	methods:
1. The student adds or subtracts whole numbers	 The number of times composing or decomposing is required while solving the problem
in non-contextual	• The absence/presence of zeros
mathematics problems.	 More than 2 addends Colorting numbers that are easier or harder to
Tools: None	 Selecting numbers that are easier or harder to add/subtract (e.g., doubles + 1 are typically easier), numbers closer to 10 or 100
Version 3 Update:	TM1a
Added example stem 2 to TM1a.	Stimulus: The student is presented with a non-contextual addition problem with two or more whole numbers.
	Example Stem 1: Enter the sum.
	4325
	<u>+ 654</u>
	Example Stem 2: Add together 33, 149, and 67. Enter the sum in the response box.
	Rubric: (1 point) The student enters the correct number (e.g., 4,979; 249).
	Response Type: Equation/Numeric



Task Model 1	TM1b
	Stimulus: The student is presented with a non-contextual
	•
Response Type:	subtraction problem.
Equation/Numeric	
,	Example Stem 1: Enter the difference.
DOK Level 1	
DOK LEVEL I	
	7529
4.NBT.B.4	<u>- 382</u>
Fluently add and subtract	
-	
multi-digit whole	Example Stem 2: Enter the difference.
numbers using the	•
standard algorithm.	4002
standard algorithm.	4003
	- 1486
Evidence Required:	
1. The student adds or	
	Rubric: (1 point) The student enters the correct number (e.g.,
subtracts whole numbers	
in non-contextual	7,147; 2,517).
mathematics problems.	
mathematics problems.	Response Type: Equation/Numeric
Tools: None	



Task Model 2a	Prompt Features: The student is prompted to multiply two
Beene and Tumer	whole numbers.
Response Type:	Stimulus Guidelines:
Equation/Numeric	 Follow any stated guidelines on allowable number
DOK Level 1	 Follow any stated guidelines on allowable number ranges.
DOK LEVEL I	 Item difficulty can be adjusted via these example
4.NBT.B.5	• Item difficulty can be adjusted via these example methods:
Multiply a whole number	\circ One factor is a multiple of 10, 100, or 1000
of up to four digits by a	 One or more partial products result from
one-digit whole number,	multiplying 5 by an even digit (e.g., multiplying 5
and multiply two two-	by 4 gives 20, but 5 by 40 gives 200 – the extra 0
digit numbers, using	seems to violate the pattern of "when you
strategies based on place	multiply ones by tens, just add a zero on the
value and the properties	end")
of operations. Illustrate	 Factors contain digits that are easier to multiply
and explain the	(e.g., multiplying by 2 or 5 is typically easier than
calculation by using	multiplying by 6, 7, or 8).
equations, rectangular	 Solving the problem requires composing/
arrays, and/or area	decomposing
models.	 Presenting numbers horizontally vs. vertically;
	larger number first vs. smaller number first
Evidence Required:	
2. The student multiplies	
whole numbers (up to	TM2a
four digits by one digit or	Stimulus: The student is presented with a non-contextual
two digits by two digits)	multiplication problem.
using strategies based on	Example Stop 1. Enter the product
place value and the properties of operations.	Example Stem 1: Enter the product.
properties of operations.	5327
Tools: None	<u>× 4</u>
	<u>~ 1</u>
Version 3 Update:	
Added example stem 2 to	Example Stem 2: Multiply 48 and 20. Enter the product in the
TM2a.	response box.
	Rubric: (1 point) The student multiplies two whole numbers and
	enters the correct product (e.g., 21,308; 960).
	Response Type: Equation/Numeric



Task Model 2b		mpt Features: The student is prompted to comp tiplication strategy.	olete a
Response Type: Equation/Numeric		nulus Guidelines: Same as for TM2a.	
DOK Level 2			
4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number,	ехрі	2b nulus: The student is presented with a multiplica ression in which properties of operations have be tegies for multiplication, with one unknown numb	en used as
and multiply two two- digit numbers, using		mple Stem 1: Enter the unknown number that ration true.	makes the
strategies based on place value and the properties of operations. Illustrate	26 >	$< 74 = (20 + 6) \times (\Box + 4)$	
and explain the calculation by using equations, rectangular arrays, and/or area		pric: (1 point) The student enters the unknown n tes the equation true (e.g., 70).	umber that
models.	Res	ponse Type: Equation/Numeric	
Evidence Required: 2. The student multiplies whole numbers (up to		mple Stem 2: In the area model shown, $A = 27$ 7. What are the values of B and C?	'00 and
four digits by one digit or		90	+7
two digits by two digits) using strategies based on place value and the properties of operations.	30	A	В
	50	~	D
Tools: None			
Version 3 Update:	+5	С	D
Revised Example Stem 2 in TM2b to include an area model.		pric: (1 point) The student enters correct number .g., $B = 210$, $C = 450$).	rs for B and
		<pre>ponse Type: Equation/Numeric (2 response box and C =, respectively).</pre>	æs, labeled



Task Model 2c-d	Dromat Fostures. The student is prompted to select a
Task Model 20-0	Prompt Features: The student is prompted to select a multiplication strategy.
Response Type:	
Multiple Choice, single	Stimulus Guidelines: Same as for TM2a.
correct response	
DOK Level 2	TM2c
	Stimulus: The student is presented with a multiplication
4.NBT.B.5	expression in the stem and expressions reflecting use of the
Multiply a whole number of up to four digits by a	distributive property or decomposition of factors in the answer choices.
one-digit whole number,	
and multiply two two-	Example Stem: Which expression is equal to 36×94 ?
digit numbers, using strategies based on place	A. (30 × 90) + (6 × 4)
value and the properties	B. $(30 + 6) \times (90 + 4)$
of operations. Illustrate	C. $(30 + 6) \times 94 + (30 + 6) \times 4$
and explain the	D. $(30 \times 90) + (30 \times 6) + (90 \times 6) + (90 \times 4)$
calculation by using equations, rectangular	Rubric: (1 point) The student selects a correct expression (e.g.,
arrays, and/or area	В).
models.	
Evidence Required:	Response Type: Multiple Choice, single correct response
2. The student multiplies	
whole numbers (up to	TM2d
four digits by one digit or	Stimulus: The student is presented with a multiplication
two digits by two digits) using strategies based on	problem and four vertically recorded partial solutions.
place value and the	Example Stem: Which strategy for multiplying 94 and 36
properties of operations.	should result in the correct product?
Tools: None	A. 94 B. 94 C. 94 D. 94
	<u>× 36</u> <u>× 36</u> <u>× 36</u> <u>× 36</u>
	24 24 2700 2700
	54054540540120120120120
	+ 270 $+ 2700$ $+ 240$ $+ 24$
	Rubric: (1 point) The student selects a correct strategy (e.g.,
	D).
	Response Type: Multiple Choice, single correct response
	Response Type. Multiple choice, single correct response



Task Model 3a **Prompt Features:** The student is prompted to divide two whole numbers or determine the remainder when given two factors of **Response Type:** a quotient plus an unknown number. Equation/Numeric Stimulus Guidelines: DOK Level 1 • Follow any stated guidelines on allowable number ranges. 4.NBT.B.6 Item difficulty can be adjusted via these example • Find whole-number methods: quotients and remainders • Using an easier divisor (e.g., dividing by 2 or 5 is with up to four-digit typically easier than dividing by 6, 7, or 8) dividends and one-digit • Dividends that do or do not contain 0s (e.g., divisors, using strategies dividing 527 by 4 will be easier than dividing 507 based on place value, the bv 4) properties of operations, Divisors that are greater than, less than, or equal 0 and/or the relationship to the first digit of the dividend (e.g., dividing 839 between multiplication by 7 will be easier than dividing 639 by 7) and division. Illustrate • Partial remainders of 0 (e.g., dividing 83 by 3 will and explain the be easier than dividing 83 by 4) calculation by using • Partial dividends that are greater than the divisor equations, rectangular (e.g., dividing 632 by 5 will be easier than arrays, and/or area dividing 632 by 6) models. • Problems that are "math facts" (e.g., dividing 64 by 8 will be easier than dividing 68 by 8) **Evidence Required:** 3. The student finds whole number auotients TM3a and remainders (up to **Stimulus:** The student is presented with an equation that four-digit dividends and illustrates the relationship between multiplication and division one-digit divisors) using with, or without, a remainder. (Note: In the case of a remainder strategies based on place as the unknown, be sure the number is less than the single digit value, the properties of factor.) operations, and/or the relationship between **Example Stem 1:** Enter the unknown number that makes the multiplication and equation true. division. $2571 \div 3 = \square$ Tools: None **Example Stem 2:** Enter the unknown number that makes the Version 3 Update: equation true. Revised TM3a to focus on $120 \times 5 + \Box = 603$ the relationship between multiplication and division with, or without, a remainder. **Rubric:** (1 point) The student enters the correct unknown number (857; 3). **Response Type:** Equation/Numeric



Task Model 3b	Prompt Features: The student is prompted to complete the decomposition of a dividend as a strategy to divide.
Response Type: Equation/Numeric	Stimulus Guidelines: Same as for TM3a.
DOK Level 2	TMOL
4.NBT.B.6 Find whole-number quotients and remainders	TM3b Stimulus: The student is presented with a non-contextual division problem with a box to represent an unknown number.
with up to four-digit dividends and one-digit	Example Stem: Enter the unknown number to make the equation true.
divisors, using strategies based on place value, the properties of operations, and/or the relationship	$98 \div 5 = (\square \div 5) + (8 \div 5)$
between multiplication and division. Illustrate and explain the	Rubric: (1 point) The student enters the correct number (e.g., 90).
calculation by using equations, rectangular arrays, and/or area models.	Response Type: Equation/Numeric
Evidence Required: 3. The student finds whole number quotients and remainders (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.	
Tools: None	



Task Model 3c Response Type:	Prompt Features: The student is prompted to select a multiplication equation that is the inverse of a given division equation.
Multiple Choice, single correct response	Stimulus Guidelines: Same as for TM3a.
correct response	Stinutus Guidelines. Same as for Triba.
DOK Level 1	
4.NBT.B.6 Find whole-number quotients and remainders	TM3c Stimulus: The student is presented with a division equation with a box representing an unknown number.
with up to four-digit dividends and one-digit divisors, using strategies	Example Stem: Select the equation that has the same unknown number as 90 \div 5 = \Box .
based on place value, the properties of operations,	A. $5 \times 90 = 0$ B. $90 \times 0 = 5$
and/or the relationship between multiplication and division. Illustrate	C. $5 \times \Box = 90$ D. $\Box \times 90 = 5$
and explain the calculation by using equations, rectangular arrays, and/or area	Rubric: (1 point) The student selects the related multiplication equation (e.g., C).
models.	Response Type: Multiple Choice, single correct response
Evidence Required: 3. The student finds whole number quotients and remainders (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.	
Tools: None	



Task Model 3d	Prompt Features: The student is prompted to determine the whole number quotient and remainder when given a contextual
Response Type: Equation/Numeric	problem to solve.
	Stimulus Guidelines: Same as for TM3a.
DOK Level 1	
4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies	 TM3d Stimulus: The student is presented with a contextual division problem where the student must identify the whole number quotient and remainder. Example Stem: A teacher has 1247 craft sticks. She divides
based on place value, the properties of operations, and/or the relationship	them equally among 9 students. How many craft sticks does each student get? Enter your
between multiplication and division. Illustrate	answer in the first response box.
and explain the calculation by using equations, rectangular	How many craft sticks are left over? Enter your answer in the second response box.
arrays, and/or area models.	Rubric: (1 point) The student enters the correct numbers in each response box (e.g., 138, 5).
Evidence Required: 3. The student finds whole number quotients and remainders (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.	Response Type: Equation/Numeric, two response boxes
Tools: None	
Version 3 Update: Added new TM3d.	