

EUREKA MATH™

A Story of Units™

Lead *Eureka Math*®

Grade 4 Supplemental Materials

Table of Contents

Module and Topic Level Materials

Grade 4 Module 3 Overview Narrative, pp. 3-6
Overview of Module Topics and Lesson Objectives, pp. 7-9
Topic H Overview, pp. 10-11

Lesson Materials

Lesson 36 Teacher Edition Pages, p. 12-18
Lesson 36 Problem Set, pp. 19-20
Lesson 36 Exit Ticket, p. 21
End-of-Module Assessment Task and Rubric, pp. 22-29

Hone the Lesson Activity Pages, pp. 30-33

Grade 4 • Module 3

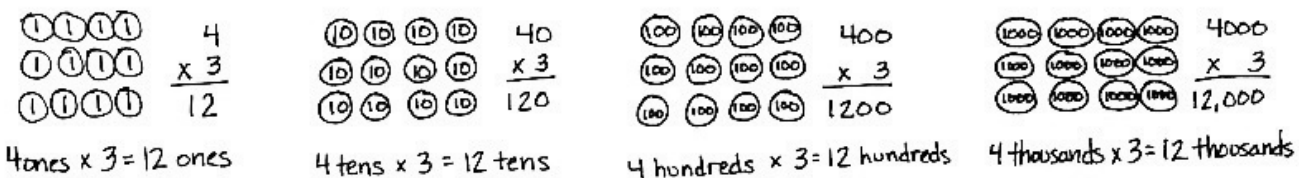
Multi-Digit Multiplication and Division

OVERVIEW

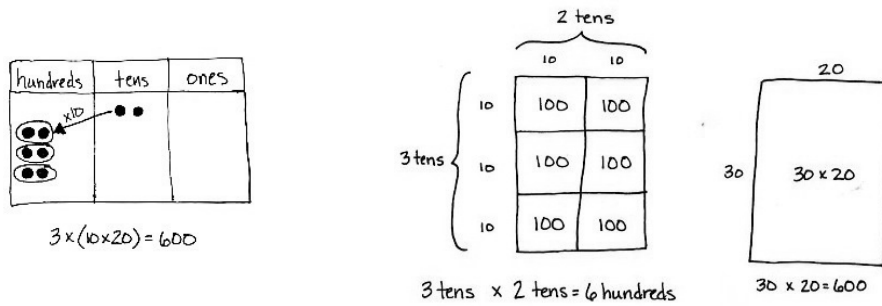
In this 43-day module, students use place value understanding and visual representations to solve multiplication and division problems with multi-digit numbers. As a key area of focus for Grade 4, this module moves slowly but comprehensively to develop students' ability to reason about the methods and models chosen to solve problems with multi-digit factors and dividends.

Students begin in Topic A by investigating the formulas for area and perimeter. They then solve multiplicative comparison problems including the language of *times as much as* with a focus on problems using area and perimeter as a context (e.g., "A field is 9 feet wide. It is 4 times as long as it is wide. What is the perimeter of the field?"). Students create diagrams to represent these problems as well as write equations with symbols for the unknown quantities (**4.OA.1**). This is foundational for understanding multiplication as scaling in Grade 5 and sets the stage for proportional reasoning in Grade 6. This Grade 4 module, beginning with area and perimeter, allows for new and interesting word problems as students learn to calculate with larger numbers and interpret more complex problems (**4.OA.2, 4.OA.3, 4.MD.3**).

In Topic B, students use place value disks to multiply single-digit numbers by multiples of 10, 100, and 1,000 and two-digit multiples of 10 by two-digit multiples of 10 (**4.NBT.5**). Reasoning between arrays and written numerical work allows students to see the role of place value units in multiplication (as pictured below). Students also practice the language of units to prepare them for multiplication of a single-digit factor by a factor with up to four digits and multiplication of two two-digit factors.

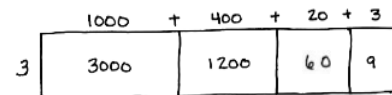
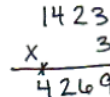
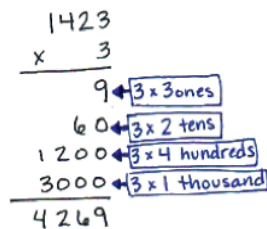
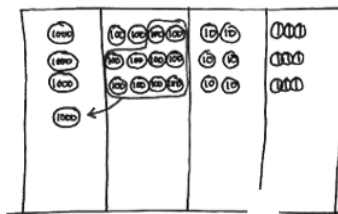


In preparation for two-digit by two-digit multiplication, students practice the new complexity of multiplying two two-digit multiples of 10. For example, students have multiplied 20 by 10 on the place value chart and know that it shifts the value one place to the left, $10 \times 20 = 200$. To multiply 20 by 30, the associative property allows for simply tripling the product, $3 \times (10 \times 20)$, or multiplying the units, $3 \text{ tens} \times 2 \text{ tens} = 6 \text{ hundreds}$ (alternatively, $(3 \times 10) \times (2 \times 10) = (3 \times 2) \times (10 \times 10)$). Introducing this early in the module allows students to practice during fluency so that, by the time it is embedded within the two-digit by two-digit multiplication in Topic H, understanding and skill are in place.



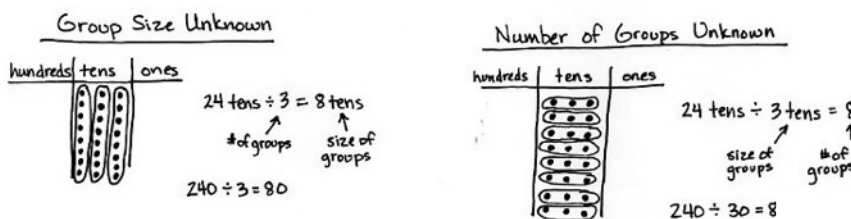
Building on their work in Topic B, students begin in Topic C decomposing numbers into base ten units in order to find products of single-digit by multi-digit numbers. Students use the distributive property and multiply using place value disks to model. Practice with place value disks is used for two-, three-, and four-digit by one-digit multiplication problems with recordings as partial products. Students bridge partial products to the recording of multiplication via the standard algorithm.¹ Finally, the partial products method, the standard algorithm, and the area model are compared and connected by the distributive property (4.NBT.5).

1,423 x 3



Topic D gives students the opportunity to apply their new multiplication skills to solve multi-step word problems (4.OA.3, 4.NBT.5) and multiplicative comparison problems (4.OA.2). Students write equations from statements within the problems (4.OA.1) and use a combination of addition, subtraction, and multiplication to solve.

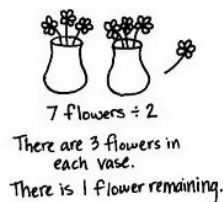
In Topic E, students synthesize their Grade 3 knowledge of division types (*group size unknown* and *number of groups unknown*) with their new, deeper understanding of place value.



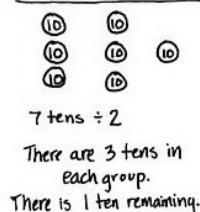
¹Students become fluent with the standard algorithm for multiplication in Grade 5 (5.NBT.5). Grade 4 students are introduced to the standard algorithm in preparation for fluency and as a general method for solving multiplication problems based on place value strategies, alongside place value disks, partial products, and the area model. Students are not assessed on the standard algorithm in Grade 4.

Students focus on interpreting the remainder within division problems, both in word problems and long division (4.OA.3). A remainder of 1, as exemplified below, represents a leftover flower in the first situation and a remainder of 1 ten in the second situation.²

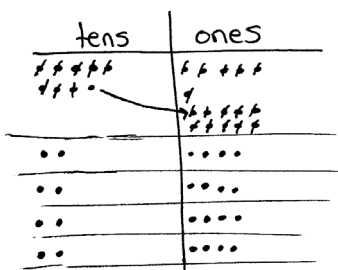
A remainder of 1 flower



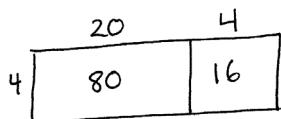
A remainder of 1 ten



While we have no reason to subdivide a remaining flower, there are good reasons to subdivide a remaining ten. Students apply this simple idea to divide two-digit numbers unit by unit: dividing the tens units first, finding the remainder (the number of tens unable to be divided), and decomposing remaining tens into ones to then be divided. Students represent division with single-digit divisors using arrays and the area model before practicing with place value disks. The standard division algorithm³ is practiced using place value knowledge, decomposing unit by unit. Finally, students use the area model to solve division problems, first with and then without remainders (4.NBT.6).



$$\begin{array}{r} 24 \\ 4 \overline{) 96} \\ \underline{- 8} \\ 16 \\ \underline{- 16} \\ 0 \end{array}$$



$$\begin{array}{c} 96 \\ \swarrow \quad \searrow \\ 80 \quad 16 \\ (80 \div 4) + (16 \div 4) \\ = 20 + 4 \\ = 24 \end{array}$$

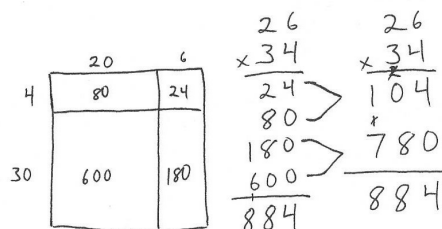
In Topic F, armed with an understanding of remainders, students explore factors, multiples, and prime and composite numbers within 100 (4.OA.4), gaining valuable insights into patterns of divisibility as they test for primes and find factors and multiples. This prepares them for Topic G's work with multi-digit dividends.

Topic G extends the practice of division with three- and four-digit dividends using place value understanding. A connection to Topic B is made initially with dividing multiples of 10, 100, and 1,000 by single-digit numbers. Place value disks support students visually as they decompose each unit before dividing. Students then practice using the standard algorithm to record long division. They solve word problems and make connections to the area model as was done with two-digit dividends (4.NBT.6, 4.OA.3).

²Note that care must be taken in the interpretation of remainders. Consider the fact that $7 \div 3$ is not equal to $5 \div 2$ because the remainder of 1 is in reference to a different whole amount ($2\frac{1}{3}$ is not equal to $2\frac{1}{2}$).

³Students become fluent with the standard division algorithm in Grade 6 (6.NS.2). For adequate practice in reaching fluency, students are introduced to, but not assessed on, the division algorithm in Grade 4 as a general method for solving division problems.

The module closes as students multiply two-digit by two-digit numbers. Students use their place value understanding and understanding of the area model to empower them to multiply by larger numbers (as pictured to the right). Topic H culminates at the most abstract level by explicitly connecting the partial products appearing in the area model to the distributive property and recording the calculation vertically (4.NBT.5). Students see that partial products written vertically are the same as those obtained via the distributive property: $4 \text{ twenty-sixes} + 30 \text{ twenty-sixes} = 104 + 780 = 884$.



As students progress through this module, they are able to apply the multiplication and division algorithms because of their in-depth experience with the place value system and multiple conceptual models. This helps to prepare them for fluency with the multiplication algorithm in Grade 5 and the division algorithm in Grade 6. Students are encouraged in Grade 4 to continue using models to solve when appropriate.

Notes on Pacing for Differentiation

Within this module, if pacing is a challenge, consider the following omissions. In Lesson 1, omit Problem 1 if you embedded it into Module 2, and omit Problem 4, which can be used for a center activity. In Lesson 8, omit the drawing of models in Problems 2 and 4 of the Concept Development and in Problem 2 of the Problem Set. Instead, have students think about and visualize what they would draw. Omit Lesson 10 because the objective for Lesson 10 is the same as that for Lesson 9. Omit Lesson 19, and instead, embed discussions of interpreting remainders into other division lessons. Omit Lesson 21 because students solve division problems using the area model in Lesson 20. Using the area model to solve division problems with remainders is not specified in the Progressions documents. Omit Lesson 31, and instead, embed analysis of division situations throughout later lessons. Omit Lesson 33, and embed into Lesson 30 the discussion of the connection between division using the area model and division using the algorithm.

Look ahead to the Pacing Suggestions for Module 4. Consider partnering with the art teacher to teach Module 4's Topic A simultaneously with Module 3.

Overview of Module Topics and Lesson Objectives

Standards	Topics and Objectives		Days
4.OA.1 4.OA.2 4.MD.3 4.OA.3	A	Multiplicative Comparison Word Problems Lesson 1: Investigate and use the formulas for area and perimeter of rectangles. Lesson 2: Solve multiplicative comparison word problems by applying the area and perimeter formulas. Lesson 3: Demonstrate understanding of area and perimeter formulas by solving multi-step real world problems.	3
4.NBT.5 4.OA.1 4.OA.2 4.NBT.1	B	Multiplication by 10, 100, and 1,000 Lesson 4: Interpret and represent patterns when multiplying by 10, 100, and 1,000 in arrays and numerically. Lesson 5: Multiply multiples of 10, 100, and 1,000 by single digits, recognizing patterns. Lesson 6: Multiply two-digit multiples of 10 by two-digit multiples of 10 with the area model.	3
4.NBT.5 4.OA.2 4.NBT.1	C	Multiplication of up to Four Digits by Single-Digit Numbers Lesson 7: Use place value disks to represent two-digit by one-digit multiplication. Lesson 8: Extend the use of place value disks to represent three- and four-digit by one-digit multiplication. Lessons 9–10: Multiply three- and four-digit numbers by one-digit numbers applying the standard algorithm. Lesson 11: Connect the area model and the partial products method to the standard algorithm.	5
4.OA.1 4.OA.2 4.OA.3 4.NBT.5	D	Multiplication Word Problems Lesson 12: Solve two-step word problems, including multiplicative comparison. Lesson 13: Use multiplication, addition, or subtraction to solve multi-step word problems.	2
		Mid-Module Assessment: Topics A–D (review 1 day, assessment ½ day, return ½ day)	2



Standards	Topics and Objectives	Days
4.NBT.6 4.OA.3	<p>E</p> <p>Division of Tens and Ones with Successive Remainders</p> <p>Lesson 14: Solve division word problems with remainders.</p> <p>Lesson 15: Understand and solve division problems with a remainder using the array and area models.</p> <p>Lesson 16: Understand and solve two-digit dividend division problems with a remainder in the ones place by using place value disks.</p> <p>Lesson 17: Represent and solve division problems requiring decomposing a remainder in the tens.</p> <p>Lesson 18: Find whole number quotients and remainders.</p> <p>Lesson 19: Explain remainders by using place value understanding and models.</p> <p>Lesson 20: Solve division problems without remainders using the area model.</p> <p>Lesson 21: Solve division problems with remainders using the area model.</p>	8
4.OA.4	<p>F</p> <p>Reasoning with Divisibility</p> <p>Lesson 22: Find factor pairs for numbers to 100, and use understanding of factors to define prime and composite.</p> <p>Lesson 23: Use division and the associative property to test for factors and observe patterns.</p> <p>Lesson 24: Determine if a whole number is a multiple of another number.</p> <p>Lesson 25: Explore properties of prime and composite numbers to 100 by using multiples.</p>	4
4.OA.3 4.NBT.6 4.NBT.1	<p>G</p> <p>Division of Thousands, Hundreds, Tens, and Ones</p> <p>Lesson 26: Divide multiples of 10, 100, and 1,000 by single-digit numbers.</p> <p>Lesson 27: Represent and solve division problems with up to a three-digit dividend numerically and with place value disks requiring decomposing a remainder in the hundreds place.</p> <p>Lesson 28: Represent and solve three-digit dividend division with divisors of 2, 3, 4, and 5 numerically.</p>	8



Standards	Topics and Objectives	Days
	<p>Lesson 29: Represent numerically four-digit dividend division with divisors of 2, 3, 4, and 5, decomposing a remainder up to three times.</p> <p>Lesson 30: Solve division problems with a zero in the dividend or with a zero in the quotient.</p> <p>Lesson 31: Interpret division word problems as either <i>number of groups unknown</i> or <i>group size unknown</i>.</p> <p>Lesson 32: Interpret and find whole number quotients and remainders to solve one-step division word problems with larger divisors of 6, 7, 8, and 9.</p> <p>Lesson 33: Explain the connection of the area model of division to the long division algorithm for three- and four-digit dividends</p>	
4.NBT.5 4.OA.3 4.MD.3	<p>H Multiplication of Two-Digit by Two-Digit Numbers</p> <p>Lesson 34: Multiply two-digit multiples of 10 by two-digit numbers using a place value chart.</p> <p>Lesson 35: Multiply two-digit multiples of 10 by two-digit numbers using the area model.</p> <p>Lesson 36: Multiply two-digit by two-digit numbers using four partial products.</p> <p>Lessons 37–38: Transition from four partial products to the standard algorithm for two-digit by two-digit multiplication.</p>	5
	End-of-Module Assessment: Topics A–H (review 1 day, assessment ½ day, return ½ day, remediation or further applications 1 day)	3
Total Number of Instructional Days		43

Terminology

New or Recently Introduced Terms

- Associative property (e.g., $96 = 3 \times (4 \times 8) = (3 \times 4) \times 8$)
- Composite number (positive integer having three or more whole number factors)
- Distributive property (e.g., $64 \times 27 = (60 \times 20) + (60 \times 7) + (4 \times 20) + (4 \times 7)$)
- Divisible
- Divisor (the number by which another number is divided)
- Formula (a mathematical rule expressed as an equation with numbers and/or variables)
- Long division (process of dividing a large dividend using several recorded steps)



Topic H

Multiplication of Two-Digit by Two-Digit Numbers

4.NBT.5, 4.OA.3, 4.MD.3

Focus Standard:	4.NBT.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.
Instructional Days:	5	
Coherence -Links from:	G3–M1	Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10
	G3–M3	Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10
-Links to:	G5–M2	Multi-Digit Whole Number and Decimal Fraction Operations

Module 3 closes with Topic H as students multiply two-digit by two-digit numbers.

Lesson 34 begins this topic by having students use the area model to represent and solve the multiplication of two-digit multiples of 10 by two-digit numbers using a place value chart. Practice with this model helps to prepare students for two-digit by two-digit multiplication and builds the understanding of multiplying units of 10. In Lesson 35, students extend their learning to represent and solve the same type of problems using area models and partial products.

In Lesson 36, students make connections to the distributive property and use both the area model and four partial products to solve problems. Lesson 37 deepens students' understanding of multi-digit multiplication by transitioning from four partial products with representation of the area model to two partial products with representation of the area model and finally to two partial products without representation of the area model.

4 partial products

$$(4 \times 6) + (4 \times 20) + (30 \times 6) + (30 \times 20)$$

$$= 24 + 80 + 180 + 600$$

$$= 104 + 780$$

$$= 884$$

2 partial products

$$(4 \times 26) + (30 \times 26)$$

$$= 104 + 780$$

$$= 884$$

Topic H culminates at the most abstract level with Lesson 38 as students are introduced to the multiplication algorithm for two-digit by two-digit numbers. Knowledge from Lessons 34–37 provides a firm foundation for understanding the process of the algorithm as students make connections from the area model to partial products to the standard algorithm (**4.NBT.5**). Students see that partial products written vertically are the same as those obtained via the distributive property: 4 twenty-sixes + 30 twenty-sixes = $104 + 780 = 884$.

A Teaching Sequence Toward Mastery of Multiplication of Two-Digit by Two-Digit Numbers

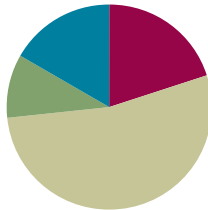
- Objective 1: Multiply two-digit multiples of 10 by two-digit numbers using a place value chart.**
(Lesson 34)
- Objective 2: Multiply two-digit multiples of 10 by two-digit numbers using the area model.**
(Lesson 35)
- Objective 3: Multiply two-digit by two-digit numbers using four partial products.**
(Lesson 36)
- Objective 4: Transition from four partial products to the standard algorithm for two-digit by two-digit multiplication.**
(Lessons 37–38)

Lesson 36

Objective: Multiply two-digit by two-digit numbers using four partial products.

Suggested Lesson Structure

■ Fluency Practice	(12 minutes)
■ Application Problem	(6 minutes)
■ Concept Development	(32 minutes)
■ Student Debrief	(10 minutes)
Total Time	(60 minutes)



Fluency Practice (12 minutes)

- Draw a Unit Fraction **3.G.2** (4 minutes)
- Divide Three Different Ways **4.NBT.6** (4 minutes)
- Multiply by Multiples of 10 Written Vertically **4.NBT.5** (4 minutes)

Draw a Unit Fraction (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews Grade 3 geometry and fraction concepts in anticipation of Modules 4 and 5. Accept reasonable drawings. Using rulers is not necessary to review the concept and takes too long.

T: On your personal white boards, write the name for any four-sided figure.

S: (Write *quadrilateral*.)

T: Draw a quadrilateral that has 4 right angles and 4 equal sides.

S: (Draw a square.)

T: Partition the square into 4 equal parts.

S: (Partition.)

T: Shade in 1 of the parts.

S: (Shade.)

T: Write the fraction of the square that you shaded.

S: (Write $\frac{1}{4}$.)

Continue with the following possible sequence: Partition a rectangle into 5 equal parts, shading $\frac{1}{5}$; partition a rhombus into 2 equal parts, shading $\frac{1}{2}$; partition a square into 12 equal parts, shading $\frac{1}{12}$; and partition a rectangle into 8 equal parts, shading $\frac{1}{8}$.

Divide Three Different Ways (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews Lessons 32 and 33.

T: (Write $406 \div 7$.) Find the quotient using place value disks.

T: Find the quotient using the area model.

T: Find the quotient using the standard algorithm.

Repeat using $3,168 \div 9$.

Multiply by Multiples of 10 Written Vertically (4 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews Lesson 35's content.

T: (Write 30×23 vertically.) When I write 30×23 , you say "3 tens times 3 ones plus 3 tens times 2 tens." (Point to the corresponding expressions as students speak.)

S: 3 tens times 3 ones + 3 tens times 2 tens.

T: Write and solve the entire equation vertically.

T: What is 30 times 23?

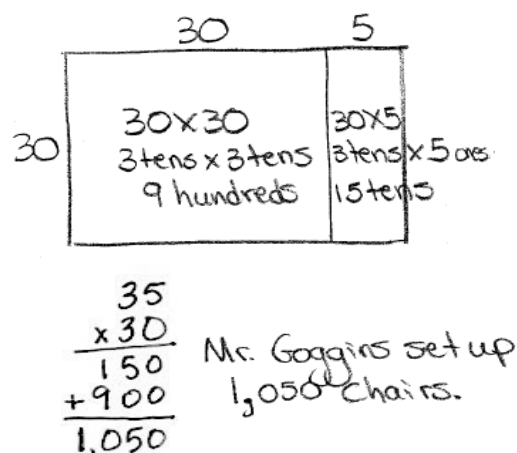
S: 690.

Continue with the following possible sequence: 30×29 , 40×34 , and 50×45 .

Application Problem (6 minutes)

Mr. Goggins set up 30 rows of chairs in the gymnasium. If each row had 35 chairs, how many chairs did Mr. Goggins set up? Draw an area model to represent and to help solve this problem. Discuss with a partner how the area model can help you solve 30×35 .

Note: This Application Problem builds on prior learning from Lesson 35 where students used an area model and partial products to multiply a two-digit multiple of 10 by a two-digit number using an area model. This Application Problem also helps bridge to today's lesson in that students apply prior knowledge of the area model and partial products to represent and solve two-digit by two-digit multiplication.



Concept Development (32 minutes)

Materials: (S) Personal white board

Problem 1: Use the distributive property to represent and solve two-digit by two-digit multiplication.

T: (Use the context of the Application Problem to continue with today's lesson.) Mr. Goggins set up an additional 4 rows of chairs with 35 chairs in each row. Let's change our area model to represent the additional rows. (Revise the area model.)

T: What is the length of this entire side? (Point to the vertical length.)

S: 34.

T: And the length of this side? (Point to the horizontal length.)

S: 35.

T: Use the area formula. What expression is shown by the area model now?

S: 34×35 .

T: We can use the area model to help us represent two-digit times two-digit multiplication. Write the expressions that represent the areas of the two smaller rectangles that we just created.

S: 4×5 and 4×30 .

T: Let's say the expressions in unit form to help us understand their value. Using the units for each factor, say 4×5 and 4×30 in unit form.

S: 4 ones \times 5 ones and 4 ones \times 3 tens.

T: Write those unit expressions in each rectangle. How can we use these expressions and the expressions of the other two rectangles to find the area of the whole rectangle?

S: We can find the sum of all of the smaller areas.

T: Let's represent this using the distributive property. We are going to move from top to bottom, right to left to represent the areas of the smaller rectangles. You tell me the numerical expressions as I point to each of the smaller rectangles. I will write what you say. 34×35 equals...?

S: $34 \times 35 = (4 \times 5) + (4 \times 30) + (30 \times 5) + (30 \times 30)$.

T: Now, express this same number sentence in unit form (without rewriting).

S: $34 \times 35 = (4 \text{ ones} \times 5 \text{ ones}) + (4 \text{ ones} \times 3 \text{ tens}) + (3 \text{ tens} \times 5 \text{ ones}) + (3 \text{ tens} \times 3 \text{ tens})$.

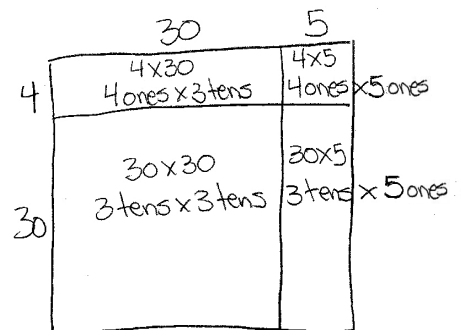
T: Now, we are ready to solve! First, let's find each of the four partial products. Then, we can add the four partial products to find 34×35 .

S: 20 ones + 12 tens + 15 tens + 9 hundreds = $20 + 120 + 150 + 900 = 1,190$.



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Lead a discussion with students in order to deepen their understanding of representing expressions in numerical form and unit form. Be sure that students understand that there are different ways to express numbers in both written and oral form.

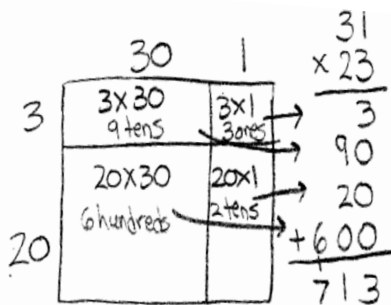


$$\begin{aligned} 34 \times 35 &= (4 \times 5) + (4 \times 30) + (30 \times 5) + (30 \times 30) \\ &= 20 + 120 + 150 + 900 \\ &= 1,190 \end{aligned}$$

MP.4

Problem 2: Find the product of 23 and 31 using an area model and partial products to solve.

- T: Let's solve 23×31 using area to model the product.
- T: (Draw a rectangle.) Break down the length and width according to place value units.
- S: 2 tens 3 ones and 3 tens 1 one. \rightarrow 20 and 3, 30 and 1.
- T: (Draw one vertical and one horizontal line subdividing the rectangle.) Turn and tell your partner the length and width of each of the 4 smaller rectangles we just created.
- S: 3 and 1, 3 and 30, 20 and 1, and 20 and 30.
- T: Using the area model that you just drew, write an equation that represents the product of 23 and 31 as the sum of those four areas.
- S: $23 \times 31 = (3 \times 1) + (3 \times 30) + (20 \times 1) + (20 \times 30)$.
- T: Now, we are ready to solve!
- T: Let's look at a way to record the partial products. (Write 23×31 vertically.) Recall that when we multiplied a one-digit number by a two-, three-, or four-digit number, we recorded the partial products. We also recorded partial products when we multiplied a two-digit number by a multiple of 10. Let's put it all together and do precisely the same thing here.
- T: (Point to the area model and the expression showing the distributive property.) What is the product of 3 ones and 1 one?
- S: 3 ones.
- T: Record the product below. Draw an arrow connecting the rectangle with the corresponding partial product. How about 3 ones times 3 tens?
- S: 9 tens.
- T: Record the product below the first partial product. Draw an arrow connecting the rectangle with the corresponding partial product. What is 2 tens times 1 one?
- S: 2 tens or 20.
- T: As before, record the partial product below the other two and do the same with 2 tens times 3 tens.
- T: Draw arrows to connect the new partial products with the corresponding rectangles. Now, let's add the partial products together. What is the sum?
- S: The sum is 713. That means that $23 \times 31 = 713$.



$$23 \times 31 = (3 \times 1) + (3 \times 30) + (20 \times 1) + (20 \times 30)$$



NOTES ON MULTIPLE MEANS OF REPRESENTATION:

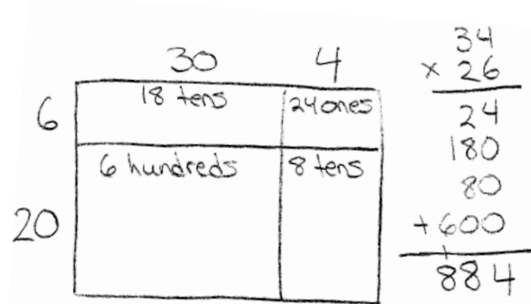
Students working below grade level may benefit from continuing to write out the expressions used to find each of the partial products. Students may write the expressions in numerical form or in unit form.

To help solidify place value, it might also be helpful to have students shade, in different colors, the rectangles that represent the ones, tens, and hundreds.

Students working above grade level may be ready to use the four partial product algorithm and can be encouraged to do so.

Problem 3: Find the product of 26 and 34 using partial products. Verify partial products using the area model.

- T: Draw an area model to represent 26×34 .
- T: How do I find the area of the smallest rectangle?
- S: Multiply 6 ones times 4 ones.
- T: Point to 6 ones times 4 ones in the algorithm. What is 6 ones times 4 ones?
- S: 24 ones.
- T: Record 24 beneath the expression and in the corresponding area.
- T: Point to the next area to solve for. Tell me the expression.
- S: 6 ones times 3 tens.
- T: Locate those numbers in the algorithm. Solve for 6 ones times 3 tens.
- S: 18 tens.
- T: Record 18 tens under the expression.
- S: We can also record 18 tens in this rectangle.



Continue connecting the width and length of each rectangle in the model to the location of those units in the algorithm. Record the partial products first under the expression and then inside the area.

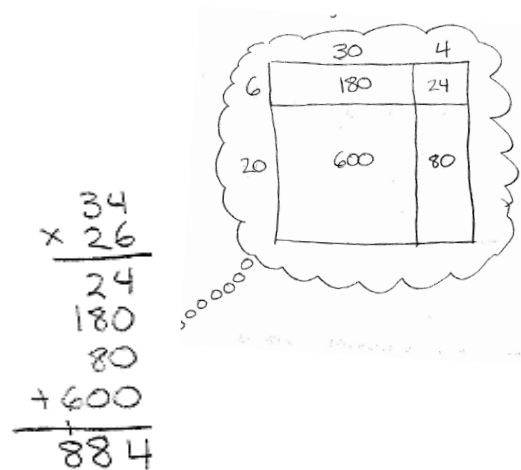
- T: What is the last step?
- S: Add together all of the partial products. $24 + 180 + 80 + 600 = 884$. $\rightarrow 26 \times 34 = 884$.

Problem 4: Find the product of 26 and 34 without using an area model. Record the partial products to solve.

- T: Take a mental picture of your area model before you erase it, the partial products, and the final product.
- T: When we multiplied these numbers before, with what did we start?
- S: 6 ones \times 4 ones.
- T: Do you see 6 ones \times 4 ones?
- S: Yes.

Students point to 6 ones \times 4 ones. You might model on the board as students also record.

- T: What is 6 ones \times 4 ones?
- S: 24 ones.
- T: Record 24 ones as a partial product.
- T: What did we multiply next?
- S: 6 ones \times 3 tens. That's 18 tens or 180.
- T: Where do we record 180?
- S: Below the 24.



- T: Now what?
- S: We multiply the tens. 2 tens \times 4 ones and then 2 tens \times 3 tens.
- T: What are 2 tens \times 4 ones and 2 tens \times 3 tens?
- S: 8 tens and 6 hundreds.
- T: Let's record these as partial products. Notice that we have four partial products. Let's again identify from where they came. (Point to each part of the algorithm as students chorally read the expressions used to solve the two-digit by two-digit multiplication.)
- S: 6 ones \times 4 ones = 24 ones. 6 ones \times 3 tens = 18 tens. 2 tens \times 4 ones = 8 tens. 2 tens \times 3 tens = 6 hundreds.
- T: What is their sum?
- S: $24 + 180 + 80 + 600 = 884$. $\rightarrow 26 \times 34 = 884$.
- T: Visualize to relate this back to the area model that we drew earlier.

Repeat for 38×43 . You might first draw the area model (without multiplying out the partial products) and then erase it so that students again visualize the connection.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.

Student Debrief (10 minutes)

Lesson Objective: Multiply two-digit by two-digit numbers using four partial products.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How does Problem 1(a) support your understanding of the distributive property and partial products?

Name Jack Date _____

1. a. In each of the two models pictured below, write the expressions that determine the area of each of the four smaller rectangles.

b. Using the distributive property, rewrite the area of the large rectangle as the sum of the areas of the four smaller rectangles. Express first in number form and then read in unit form.

$14 \times 12 = (4 \times \underline{2}) + (4 \times \underline{10}) + (10 \times \underline{2}) + (10 \times \underline{10})$

2. Use an area model to represent the following expressions. Record the partial products and solve.

a. 14×22

$$\begin{array}{r} 22 \\ \times 14 \\ \hline 88 \\ 80 \\ \hline 308 \end{array}$$

- How do Problems 1 and 2 help to prepare you to solve Problems 3, 4, 5, and 6?
- How did our previous work with area models and partial products help us to be ready to solve two-digit by two-digit multiplication problems using partial products?
- How is it helpful to think about the areas of each rectangle in terms of *units*?
- How could you explain to someone that *ones* \times *tens* equals *tens* but *tens* \times *tens* equals *hundreds*?
- What significant math vocabulary did we use today to communicate precisely?
- How did the Application Problem connect to today's lesson?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Draw an area model to represent the following expressions. Record the partial products vertically and solve.

3. 25×32

4. 35×42

Visualize the area model and solve the following numerically using four partial products. (You may sketch an area model if it helps.)

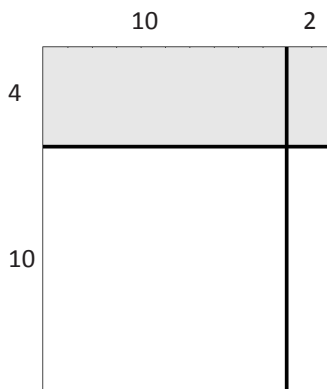
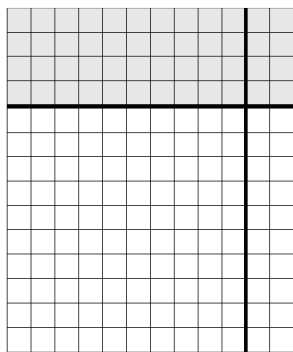
5. 42×11

6. 46×11

Name _____

Date _____

1. a. In each of the two models pictured below, write the expressions that determine the area of each of the four smaller rectangles.

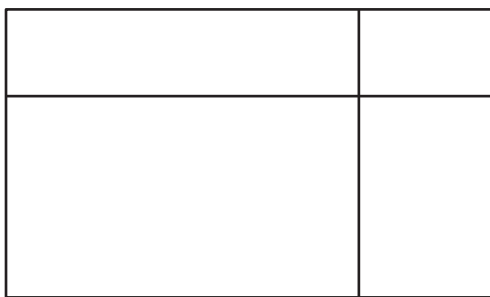


- b. Using the distributive property, rewrite the area of the large rectangle as the sum of the areas of the four smaller rectangles. Express first in number form, and then read in unit form.

$$14 \times 12 = (4 \times \underline{\quad}) + (4 \times \underline{\quad}) + (10 \times \underline{\quad}) + (10 \times \underline{\quad})$$

2. Use an area model to represent the following expression. Record the partial products and solve.

$$14 \times 22$$



$$\begin{array}{r} 22 \\ \times 14 \\ \hline \\ \hline \\ \hline \\ \hline \\ + \hline \end{array}$$

Draw an area model to represent the following expressions. Record the partial products vertically and solve.

3. 25×32

4. 35×42

Visualize the area model and solve the following numerically using four partial products. (You may sketch an area model if it helps.)

5. 42×11

6. 46×11

Name _____

Date _____

Record the partial products to solve.

Draw an area model first to support your work, or draw the area model last to check your work.

1. 26×43

2. 17×55

Name Jack Date _____

1. What is the greatest multiple of 7 that is less than 60?

7, 14, 21, 28, 35, 42, 49, 56, 63

56 is the greatest multiple of 7 that is less than 60.

2. Identify each number as prime or composite. Then list all of its factors.

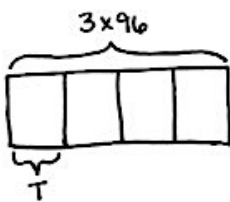
- a. 3 prime 1, 3
- b. 6 composite 1, 2, 3, 6
- c. 15 composite 1, 3, 5, 15
- d. 24 composite 1, 2, 3, 4, 6, 8, 12, 24
- e. 29 prime 1, 29

3. Use any place value strategy to divide.

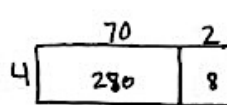
- a. $3,600 \div 9$

$$36 \text{ hundreds} \div 9 = 4 \text{ hundreds} \\ = 400$$

- b. 96 pencils come in a box. If 4 teachers share 3 boxes equally, how many pencils does each teacher receive?



$$\begin{array}{r} 96 \\ \times 3 \\ \hline 288 \end{array}$$

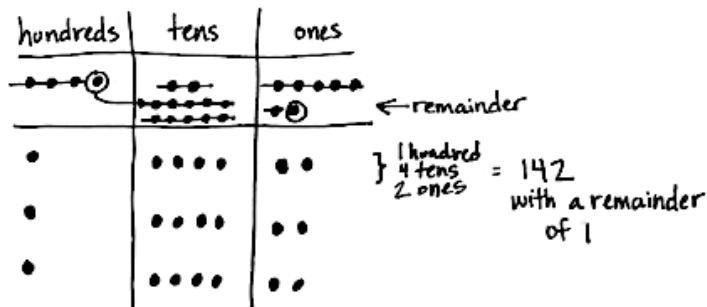


$$\begin{array}{r} 70 \\ 4 \overline{) 288} \\ \underline{-280} \\ 8 \\ \underline{-8} \\ 0 \end{array}$$

$70 + 2 = 72$
Each teacher receives 72 pencils.

4. $427 \div 3$

a. Solve by drawing place value disks:



b. Solve numerically:

$$\begin{array}{r} 142 \text{ R}1 \\ 3 \overline{)427} \\ \underline{-3} \\ 12 \\ \underline{-12} \\ 07 \\ \underline{-6} \\ 1 \end{array}$$

$$\begin{array}{r} \checkmark 142 \\ \times 3 \\ \hline 426 \\ 426 + 1 = 427 \end{array}$$

5. Use any place value strategy to multiply or divide.

a. $5316 \div 3$

$$\begin{array}{r} 1772 \\ 3 \overline{)5316} \\ \underline{-3} \\ 23 \\ \underline{-21} \\ 21 \\ \underline{-21} \\ 06 \\ \underline{-6} \\ 0 \end{array}$$

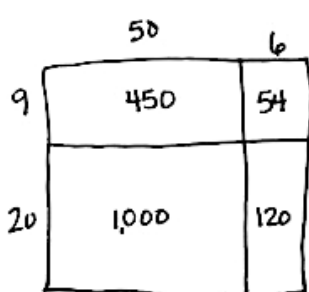
$$\begin{array}{r} \checkmark 1772 \\ \times 3 \\ \hline 5316 \end{array}$$

b. $3,809 \div 5$

$$\begin{array}{r} 761 \text{ R}4 \\ 5 \overline{)3809} \\ \underline{-35} \\ 30 \\ \underline{-30} \\ 09 \\ \underline{-5} \\ 4 \end{array}$$

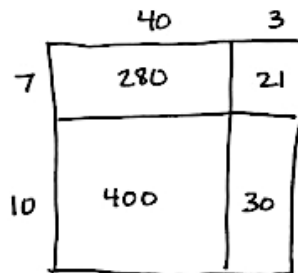
$$\begin{array}{r} \checkmark 761 \\ \times 5 \\ \hline 3805 \\ 3805 + 4 = 3809 \end{array}$$

c. 29×56



$$\begin{array}{r} 56 \\ \times 29 \\ \hline 54 \\ 450 \\ 120 \\ + 1000 \\ \hline 1,624 \end{array}$$

d. 17×43

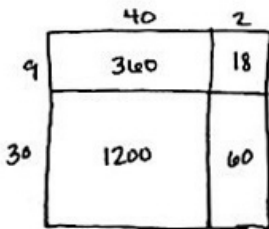


$$\begin{array}{r} 43 \\ \times 17 \\ \hline 21 \\ 280 \\ 30 \\ + 400 \\ \hline 731 \end{array}$$

Directions: Solve using a model or equation. Show your work and write your answer as a statement.

6. A new grocery store is opening next week.

- a. The store's rectangular floor is 42 meters long and 39 meters wide. How many square meters of flooring do they need? Use estimation to assess the reasonableness of your answer.



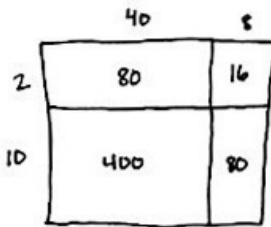
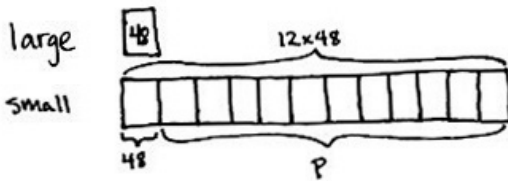
$$\begin{array}{r} 42 \\ \times 39 \\ \hline 18 \\ 360 \\ 60 \\ + 1200 \\ \hline 1,638 \end{array}$$

They need 1,638 square meters of flooring. My answer is reasonable because it is close to my estimate of 1,600 square meters.

$$42 \times 39 \approx 40 \times 40$$

$$40 \times 40 = 1,600$$

- b. The store ordered small posters and large posters to promote their opening. 12 times as many small posters were ordered as large posters. If there were 48 large posters, how many more small posters were ordered than large posters?

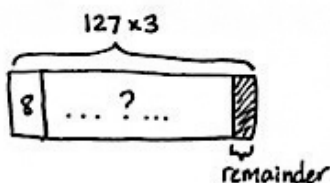


$$\begin{array}{r} 48 \\ \times 12 \\ \hline 16 \\ 80 \\ 80 \\ + 400 \\ \hline 576 \end{array}$$

$$\begin{array}{r} 576 \\ - 48 \\ \hline 528 \\ P = 528 \end{array}$$

528 more small posters were ordered than large posters.

- c. Uniforms are sold in packages of 8. The store's 127 employees will each be given 3 uniforms. How many packages will the store need to order?



$$\begin{array}{r} 127 \\ \times 3 \\ \hline 381 \end{array}$$

$$\begin{array}{r} 47 \text{ R}5 \\ 8 \overline{)381} \\ \underline{-32} \\ 61 \\ \underline{-56} \\ 5 \end{array}$$

$$\begin{array}{r} \sqrt{47} \\ \times 8 \\ \hline 376 \end{array}$$

$376 + 5 = 381$

The store needs to order 48 packages. If they order 47 packages, only 376 uniforms will come and they will need 5 more uniforms.

- d. There are 3 numbers for the combination to the store's safe. The first number is 17. The other 2 numbers can be multiplied together to give a product of 28. What are all of the possibilities for the other two numbers? Write your answers as multiplication equations, and then write all of the possible combinations to the safe.

$$\begin{aligned} 28 &= 1 \times 28 \\ 28 &= 28 \times 1 \\ 28 &= 2 \times 14 \\ 28 &= 14 \times 2 \\ 28 &= 4 \times 7 \\ 28 &= 7 \times 4 \end{aligned}$$

The combination possibilities are:

$$\begin{aligned} &17, 1, 28 \\ &17, 28, 1 \\ &17, 2, 14 \\ &17, 14, 2 \\ &17, 4, 7 \\ &17, 7, 4 \end{aligned}$$

End-of-Module Assessment Task
Standards Addressed

Topics A–H

Use the four operations with whole numbers to solve problems.

- 4.OA.1** Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- 4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
- 4.OA.3** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Gain familiarity with factors and multiples.

- 4.OA.4** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Use place value understanding and properties of operations to perform multi-digit arithmetic.

- 4.NBT.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.
- 4.NBT.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.

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

- 4.MD.3** Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students CAN do now and what they need to work on next.

A Progression Toward Mastery				
Assessment Task Item	STEP 1 Little evidence of reasoning without a correct answer. (1 Point)	STEP 2 Evidence of some reasoning without a correct answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
1 4.OA.4	The student answers incorrectly with a number that is not a multiple of 7.	The student answers incorrectly with a number that is a multiple of 7 but greater than 60.	The student answers with a multiple of 7 that is less than 60 but not 56.	The student correctly answers: The greatest multiple of 7 that is less than 60 is 56.
2 4.OA.4	The student is unable to complete the majority of Parts (a)–(e).	The student correctly answers prime or composite for three parts and misses more than a total of three factors.	The student correctly answers prime or composite for four of the five parts and misses three or fewer factors.	The student correctly answers: a. Prime; 1, 3 b. Composite; 1, 2, 3, 6 c. Composite; 1, 3, 5, 15 d. Composite; 1, 2, 3, 4, 6, 8, 12, 24 e. Prime; 1, 29



A Progression Toward Mastery				
<p>3</p> <p>4.OA.3 4.NBT.5 4.NBT.6</p>	The student incorrectly answers both parts and shows no reasoning.	The student correctly answers one part and shows little reasoning.	The student answers one part correctly but shows solid reasoning in both problems, or the student shows some reasoning with correct answers for both parts.	The student correctly answers using any place value strategy: <ol style="list-style-type: none"> 400 Each teacher received 72 pencils.
<p>4</p> <p>4.NBT.6</p>	The student incorrectly represents division using place value disks and incorrectly solves numerically.	The student incorrectly solves the numeric equation but shows some understanding of the place value chart and use of the algorithm.	The student decomposes incorrectly in one place value or does not include the remainder.	The student correctly decomposes and divides using the place value disks and provides a numerical answer of 142 with a remainder of 1.
<p>5</p> <p>4.NBT.6</p>	The student answers fewer than two parts correctly, showing little to no evidence of place value strategies.	The student correctly solves two parts, showing little evidence of place value strategies.	The student correctly solves three parts with understanding of place value strategies, or the student correctly solves all four parts but does not show solid evidence of place value understanding.	The student solves all parts correctly using any place value strategy: <ol style="list-style-type: none"> 1,772 761 with a remainder of 4 1,624 731
<p>6</p> <p>4.MD.3 4.OA.1 4.OA.2 4.OA.3 4.NBT.5 4.NBT.6</p>	The student incorrectly answers two or more of the four parts, showing little to no reasoning.	The student correctly answers two of four parts, showing some reasoning.	The student answers all four parts correctly but shows little reasoning in Part (a), or the student answers three of four parts correctly showing solid reasoning and understanding mathematically.	The student correctly answers all four parts, showing solid evidence of place value understanding: <ol style="list-style-type: none"> 1,638 square meters of flooring (estimate $40 \times 40 = 1,600$ square m). It is a reasonable because the answer and estimate have a difference of only 38 square meters. 528 more small posters than large posters.



A Progression Toward Mastery

				<p>c. 48 packages.</p> <p>d. Equations of</p> $1 \times 28 = 28$ $28 \times 1 = 28$ $2 \times 14 = 28$ $14 \times 2 = 28$ $4 \times 7 = 28$ $7 \times 4 = 28$ <p>Combinations of</p> <p>17, 1, 28</p> <p>17, 28, 1</p> <p>17, 2, 14</p> <p>17, 14, 2</p> <p>17, 4, 7</p> <p>17, 7, 4</p>
--	--	--	--	--

Grade 4 Teacher A		Lesson: Grade 4 Module 3 Lesson 36 Objective: Multiply two-digit by two-digit numbers using four partial products.
Context: This class has a high percentage of English learners and is in year 1 of implementing <i>Eureka Math</i> . The Lesson 35 Exit Tickets showed that the majority of students could not identify the partial products after completing the area model.		
Lesson Component	Customizations	Rationale
Fluency	<ul style="list-style-type: none"> ▪ Draw a Unit Fraction—OMIT ▪ Divide Three Different Ways—teacher guided ($406 \div 7$ only). ▪ Multiply by Multiples of 10 Written Vertically (only 30×23 with area model and 30×29) 	<ul style="list-style-type: none"> ▪ Omit the Draw a Unit Fraction fluency to give an additional 4 minutes to the Concept Development. ▪ Condense the Divide Three Different Ways fluency to one example because this skill takes time to master and students need repeated practice. ▪ Because the Multiply by Multiples fluency is connected to today’s lesson and students struggled with this concept in the previous lesson, include additional pictorial support and only use two problems.
Application Problem	Model problem solving and RDW by using teacher Think Aloud and interactive questioning.	<ul style="list-style-type: none"> ▪ Based on the Lesson 35 Exit Ticket, students need more opportunities to connect the area model to the written notation of partial products. ▪ All students, especially English learners, will benefit from repeated practice of the concept through teacher modeling of problem solving, particularly through the RDW process.
Concept Development	<ul style="list-style-type: none"> ▪ Use Problems 1–3. ▪ Continue to use an area model with Problem 4 and use the visualization component in the lesson, if time allows. 	<ul style="list-style-type: none"> ▪ The visualization component in the lesson transitions students to finding partial products by using written notation without the area model. Based on the previous lesson, students need more time with pictorial models. ▪ Those who are ready may be asked to visualize, as in Problem 4.
Problem Set	<ul style="list-style-type: none"> ▪ Must Do problems: 1(a), 2, 3 ▪ Could Do problem: 4 ▪ Extension problems: 1(b), 5, 6 	<ul style="list-style-type: none"> ▪ Problems 1–3 move from simple to complex. ▪ The notation Problem 1(b) asks for is not necessary for students to meet the objective. ▪ Problems 1 and 2 are multiplying with friendly numbers. ▪ Problem 3 is an opportunity to apply what they learned without any scaffolds. ▪ Problems 5 and 6 provide a challenge by using the area model as a “visual” support.
Student Debrief	<ul style="list-style-type: none"> ▪ Debrief: How does the area model support your written notation when solving two-digit by two-digit multiplication? ▪ Exit Ticket: Choose 1, 2, or both ▪ Homework: 1, 2, 3 	<ul style="list-style-type: none"> ▪ The debrief question connects student learning from a pictorial representation to the abstract written notation of the algorithm. Students struggled with this concept on the Lesson 35 Exit Ticket and it is a focus of today’s lesson. ▪ Offering a choice makes the Exit Ticket less intimidating and may provide insight about a student’s confidence level. ▪ Homework choices mirror Problem Set choices.

Grade 4 Administrator A		Lesson: Grade 4 Module 3 Lesson 36 Objective: Multiply two-digit by two-digit numbers using four partial products.
Lesson Component	Customizations	Questions
Fluency	<ul style="list-style-type: none"> ▪ Draw a Unit Fraction OMIT ▪ Divide Three Different Ways—teacher guided ($406 \div 7$ only). ▪ Multiply by Multiples of 10 Written Vertically (only 30×23 with area model and 30×29) 	Talk to me about your fluency choices for today’s lesson.
Application Problem	Model problem solving and RDW by using teacher Think Aloud and interactive questioning.	What was your reasoning behind modeling this word problem instead of allowing the students to solve independently or with a partner?
Concept Development	<ul style="list-style-type: none"> ▪ Use Problems 1–3. ▪ Continue to use an area model with Problem 4 and use the visualization component in the lesson, if time allows. 	Why did you use the area model all the way through the lesson?
Problem Set	<ul style="list-style-type: none"> ▪ Must Do problems: 1(a), 2, 3 ▪ Could Do problem: 4 ▪ Extension problems: 1(b), 5, 6 	Please share with me your thought process for your Problem Set customizations.
Student Debrief	<ul style="list-style-type: none"> ▪ Debrief: How does the area model support your written notation when solving two-digit by two-digit multiplication? ▪ Exit Ticket: Choose 1, 2, or both ▪ Homework: 1, 2, 3 	Why did you choose this debrief question?

Grade 4 Teacher B		Lesson Number: Grade 4 Module 3 Lesson 36 Objective: Multiply two-digit by two-digit numbers using four partial products.
Context: Most of the students in this class were successful with both the area model and partial product solution paths. The teacher anticipates students continuing that success in Lesson 36. However, an assembly is scheduled for this day, which will consume about 10 minutes of math class.		
Lesson Component	Customizations	Rationale
Fluency	<ul style="list-style-type: none"> ▪ Draw a Unit Fraction ▪ Divide Three Different Ways OMIT ▪ Multiply by Multiples of 10 Written Vertically (30×23 and 30×29 only) 	<ul style="list-style-type: none"> ▪ Keep in Draw a Unit Fraction, despite time issues, because it reviews Grade 3 geometry and fraction concepts in anticipation of Modules 4 and 5. Reviewing material shortly before a module begins can help students be more successful in that module. ▪ Omit Divide Three Different Ways to adjust for the time an assembly will take from math class. Omitting this maintenance fluency will not affect students' ability to accomplish the lesson objective. ▪ Multiply by Multiples of 10 Written Vertically ties to the lesson so students may need to review it but reduce it from four problems to two problems because of time limits.
Application Problem	Guided Practice	<ul style="list-style-type: none"> ▪ Start the problem with the whole group by guiding the drawing of the area model. ▪ Then students solve the problem independently, allowing for some productive struggle and for students to demonstrate what they learned in yesterday's lesson.
Concept Development	<ul style="list-style-type: none"> ▪ Use Problems 1 and 3. ▪ Use Problem 4, if time permits. 	<ul style="list-style-type: none"> ▪ Because of limited time, give students only Problems 1 and 3. ▪ Problem 3 was chosen over Problem 2 because the number choice in Problem 3 leads into Problem 4. ▪ If time allows, Problem 4's additional practice prepares students for the next lesson by having them visualize the area model and rely on written notation.
Problem Set	<ul style="list-style-type: none"> ▪ Must Do problems: 1, 2, 3 ▪ Could Do problem: 4 ▪ Extension problems: 5, 6 	<ul style="list-style-type: none"> ▪ The Must Do problems contain experience with models already drawn and with models students need to draw. ▪ Since students showed success with the prior lesson, the easier Problem 3 is a Could Do problem and the more complex Problem 4 is a Must Do problem. ▪ If students struggle during the Concept Development, then change Problem 3 to a Must Do problem and make Problem 4 an Extension problem.
Student Debrief	<ul style="list-style-type: none"> ▪ Debrief: How is it helpful to think about the areas of each rectangle in terms of <i>units</i>? ▪ Exit Ticket: Problem 2 ▪ Homework: 1, 2, 3, and possibly 4 	<ul style="list-style-type: none"> ▪ The Debrief connects 2 units in the prior lesson to 4 units in this lesson. Recording the rows in the area model as 2 units in the written notation is a bridge to tomorrow's lesson. ▪ Problem 2 on the Exit Ticket requires knowing only two basic facts, which expedites student work for the shortened class time. ▪ Homework selections mirror Must Do problems. If the class is successful, they should try Problem 4 so we can use it in a math chat tomorrow with Problem 3.

Grade 4 Administrator B		Lesson Number: Grade 4 Module 3 Lesson 36 Objective: Multiply two-digit by two-digit numbers using four partial products.
Lesson Component	Customization	Questions
Fluency	<ul style="list-style-type: none"> ▪ Draw a Unit Fraction ▪ Divide Three Different Ways OMIT ▪ Multiply by Multiples of 10 Written Vertically (30×23 and 30×29 only) 	I noticed you omitted Divide Three Different Ways and kept in Draw a Unit Fraction. What prompted that decision since this module does not cover fractions?
Application Problem	Guided Practice	Tell me more about your choice of guided practice.
Concept Development	<ul style="list-style-type: none"> ▪ Use Problems 1 and 3. ▪ Use Problem 4, if time permits. 	Explain why you chose to omit Concept Development Problem 2? Tell me more about your Concept Development customizations.
Problem Set	<ul style="list-style-type: none"> ▪ Must Do problems: 1, 2, 3 ▪ Could Do problem: 4 ▪ Extension problems: 5, 6 	Share with me the reasoning behind your Problem Set customizations.
Student Debrief	<ul style="list-style-type: none"> ▪ Debrief: How is it helpful to think about the areas of each rectangle in terms of <i>units</i>? ▪ Exit Ticket: Problem 2 ▪ Homework: 1, 2, 3, and possibly 4 	I see that the lesson's Homework has eight questions. What made you select these three questions for the assignment?