

GO MATH!

INCLUDES

- School-Home Letter
- Vocabulary Game Directions
- Daily Enrichment Activities
- Reteach Intervention for every lesson
- Chapter 2 Test
- Chapter 2 Performance Task
- Answer Keys and Individual Record Forms



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School-Home Letter

Dear Family,

During the next few weeks, our math class will be learning about multiplying by 1-digit whole numbers. We will investigate strategies for multiplying 2-, 3-, and 4-digit numbers by the numbers 2–9.

You can expect to see homework that provides practice with multiplication by 1-digit numbers.

Here is a sample of how your child will be taught to multiply by a 1-digit number.



MODEL Multiply by a 1-Digit Number

This is one way we will be multiplying by 1-digit numbers.

STEP 1

Multiply the tens.
Record.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \end{array} \leftarrow 3 \times 2 \text{ tens} \\ = 6 \text{ tens}$$

STEP 2

Multiply the ones.
Record.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \\ 18 \end{array} \leftarrow 3 \times 6 \text{ ones} \\ = 18 \text{ ones}$$

STEP 3

Add the partial products.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \\ + 18 \\ \hline 78 \end{array}$$

Tips

Estimating to Check Multiplication

When estimation is used to check that a multiplication answer is reasonable, usually the greater factor is rounded to a multiple of 10 that has only one non-zero digit. Then mental math can be used to recall the basic fact product, and patterns can be used to determine the correct number of zeros in the estimate.

Vocabulary

Distributive Property The property that states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products

partial products A method of multiplying in which the ones, tens, hundreds, and so on are multiplied separately and then the products are added together

Carta para la casa

Vocabulario

Propiedad Distributiva La propiedad que establece que multiplicar una suma por un número es lo mismo que multiplicar cada sumando por el número y luego sumar los productos

productos parciales Un método de multiplicación en el cual las unidades, las decenas, las centenas y así sucesivamente, se multiplican por separado, y después se suman sus productos

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos a multiplicar números enteros de un dígito. Investigaremos estrategias para multiplicar números de 2, 3 y 4 dígitos por números del 2 al 9.

Llevaré a la casa tareas para practicar la multiplicación de números de 1 dígito.

Este es un ejemplo de la manera como aprenderemos a multiplicar por un número de 1 dígito.



MODELO Multiplicar por un número de 1 dígito

Esta es una manera en la que multiplicaremos por un número de 1 dígito.

PASO 1

Multiplica las decenas.
Anota.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \end{array} \leftarrow 3 \times 2 \text{ decenas} \\ = 6 \text{ decenas}$$

PASO 2

Multiplica las unidades.
Anota.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \\ 18 \end{array} \leftarrow 3 \times 6 \text{ unidades} \\ = 18 \text{ unidades}$$

PASO 3

Suma los productos parciales.

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 60 \\ + 18 \\ \hline 78 \end{array}$$

Pistas

Estimar para revisar la multiplicación

Cuando se usa la estimación para revisar que la respuesta de una multiplicación es razonable, el factor se suele redondear al múltiplo de 10 que tiene un solo dígito distinto a cero. Después se puede usar el cálculo mental para recordar el producto básico de la operación, y se pueden usar patrones para determinar la cantidad correcta de ceros de la estimación.

Going Places with **GO MATH!** words



Picture It

For 3 to 4 players

Materials

- timer
- sketch pad

How to Play

1. Take turns to play.
2. To take a turn, choose a word from the Word Box, but do not tell the word to the other players.
3. Set the timer for 1 minute.
4. Draw pictures and numbers to give clues about the word.
5. The first player to guess the word before time runs out gets 1 point. If that player can use the word in a sentence, he or she gets 1 more point. Then that player gets a turn choosing a word.
6. The first player to score 10 points wins.

Word Box

Distributive

Property

estimate

factor

partial product

place value

product

regroup

round

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Chapter 2 62A

Name _____

Algebra • Multiplication Comparisons

Tara has 3 times as many soccer medals as Greg. Greg has 4 soccer medals. How many soccer medals does Tara have?

Step 1 Draw a model.

Greg ○ ○ ○ ○

Tara ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Step 2 Use the model to write an equation.

$n = \underline{3} \times \underline{4}$ **Think:** n is how many soccer medals Tara has.

Step 3 Solve the equation.

$n = \underline{12}$

So, Tara has 12 soccer medals.

Draw a model and write an equation.

1. 4 times as many as 7 is 28.

2. 16 is 8 times as many as 2.

3. 3 times as many as 6 is 18.

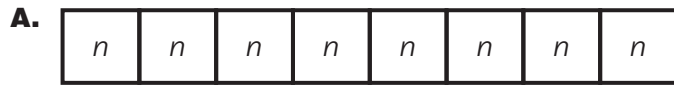
4. 10 is 2 times as many as 5.

Name _____

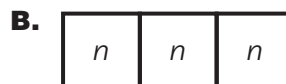
Multiplication Match-Up

Match each word problem to a model. Write the equation and solve.

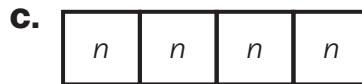
1. Angie has 36 coins. This is 4 times as many coins as Scott has. How many coins does Scott have?



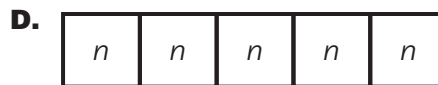
2. Cindy bought 20 stamps. This is 5 times the number of postcards that Yoshi bought. How many postcards did Yoshi buy?



3. Jessica has 48 stickers. This is 8 times as many stickers as Taylor has. How many stickers does Taylor have?



4. Joshua picked 24 apples. This is 3 times the number of apples that Carly picked. How many apples did Carly pick?



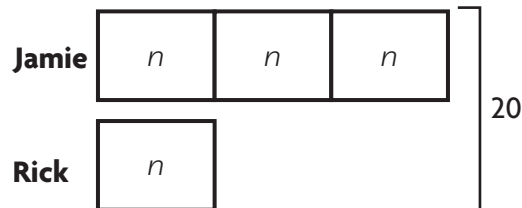
5. **Stretch Your Thinking** Write four comparison sentences for the product 12.

Name _____

Algebra • Comparison Problems

Jamie has 3 times as many baseball cards as Rick. Together, they have 20 baseball cards. How many cards does Jamie have?

Step 1 Draw a box with the letter n in it to show that Rick has an unknown number of cards. Jamie has 3 times as many cards as Rick, so draw three identical boxes to represent Jamie's cards.



Step 2 Use the model to write an equation.

Think: There are 4 equal bars. The number in each bar is represented by n .

There are a total of 20 cards. So, $\underline{4} \times n = \underline{20}$.

Step 3 Solve the equation to find the value of n .

Think: 4 times what number is 20?

Since $4 \times \underline{5} = 20$, the value of n is $\underline{5}$.

Rick has $\underline{5}$ cards.

Step 4 Find how many cards Jamie has.

Think: Jamie has 3 times as many cards as Rick.

So, Jamie has $3 \times \underline{5} = \underline{15}$ baseball cards.

Draw a model. Write an equation and solve.

- Maddie has 2 times as many stickers on her notebook as Meg. Together, they have 15 stickers. How many stickers are on Maddie's notebook?
- How many more stickers are on Maddie's notebook than on Meg's notebook?

Name _____

Mixed Models


Solve each problem.

1. Together, Tom and Max have 72 football cards. Tom has 2 more than 4 times as many cards as Max has. How many football cards does Tom have?

2. Naomi has 50 red beads and white beads. The number of red beads is 1 more than 6 times the number of white beads. How many red beads does Naomi have?

3. Javier rode his bike for a total of 41 minutes. Before lunch, he rode for 1 minute less than 5 times the number of minutes he rode after lunch. How many minutes did Javier ride before lunch?

4. Marnie practiced her basketball dribbling. After two tries, she had bounced the ball 88 times. On the second try, she had 2 fewer bounces than 8 times the number of bounces she had on the first try. How many bounces did she have on the second try?

5.  Write Math How can a multiplication model help you solve Problem 1?

Name _____

Multiply Tens, Hundreds, and Thousands

You can use a pattern to multiply with tens, hundreds, and thousands.

Count the number of zeros in the factors.

$4 \times 6 = 24$ ← basic fact

$4 \times 60 = 240$ ← When you multiply by tens, the last digit in the product is 0.

$4 \times 600 = 2,400$ ← When you multiply by hundreds, the last two digits in the product are 0.

$4 \times 6,000 = 24,000$ ← When you multiply by thousands, the last three digits in the product are 0.

When the basic fact has a zero in the product, there will be an extra zero in the final product:

$5 \times 4 = 20$, so $5 \times 4,000 = 20,000$

Complete the pattern.

1. $9 \times 2 = 18$

$9 \times 20 = \underline{\hspace{2cm}}$

$9 \times 200 = \underline{\hspace{2cm}}$

$9 \times 2,000 = \underline{\hspace{2cm}}$

2. $8 \times 4 = 32$

$8 \times 40 = \underline{\hspace{2cm}}$

$8 \times 400 = \underline{\hspace{2cm}}$

$8 \times 4,000 = \underline{\hspace{2cm}}$

3. $6 \times 6 = 36$

$6 \times 60 = \underline{\hspace{2cm}}$

$6 \times 600 = \underline{\hspace{2cm}}$

$6 \times 6,000 = \underline{\hspace{2cm}}$

4. $4 \times 7 = 28$

$4 \times 70 = \underline{\hspace{2cm}}$

$4 \times 700 = \underline{\hspace{2cm}}$

$4 \times 7,000 = \underline{\hspace{2cm}}$

Find the product.

5. $7 \times 300 = 7 \times \underline{\hspace{2cm}}$ hundreds

$= \underline{\hspace{2cm}}$ hundreds

$= \underline{\hspace{2cm}}$

6. $5 \times 8,000 = 5 \times \underline{\hspace{2cm}}$ thousands

$= \underline{\hspace{2cm}}$ thousands

$= \underline{\hspace{2cm}}$

Name _____

Multiplication Inequalities

Write $<$, $>$, or $=$ for each \bigcirc .

1. $7 \times 60 \bigcirc 400$

2. $700 \bigcirc 90 \times 8$

3. $3 \times 800 \bigcirc 2,500$

4. $2,000 \bigcirc 400 \times 5$

5. $8 \times 6,000 \bigcirc 40,000$


6. $3 \times 9,000 \bigcirc 39,000$

7. $6 \times 900 \bigcirc 700 \times 8$

8. $8 \times 3,000 \bigcirc 6,000 \times 4$

9. $9 \times 4,000 \bigcirc 6,000 \times 6$

10. $800 \times 9 \bigcirc 3,000 \times 3$

11.  **Write Math** **Explain** how you found the answer in Exercise 10.

Name _____

Estimate Products

You can use rounding to estimate products.

Round the greater factor. Then use mental math to estimate the product.

6×95

Step 1 Round 95 to the nearest hundred.

95 rounds to **100**.

Step 2 Use patterns and mental math.

$6 \times 1 = 6$

$6 \times 10 = 60$

$6 \times 100 = \mathbf{600}$

Find two numbers the exact answer is between.

7×759

Step 1 Estimate by rounding to the lesser hundred.

$$\begin{array}{r} 7 \times 759 \\ | \\ 7 \times 700 = 4,900 \end{array}$$

Think: $7 \times 7 = 49$
 $7 \times 70 = 490$
 $7 \times 700 = 4,900$

Step 2 Estimate by rounding to the greater hundred.

$$\begin{array}{r} 7 \times 759 \\ | \\ 7 \times 800 = 5,600 \end{array}$$

Think: $7 \times 8 = 56$
 $7 \times 80 = 560$
 $7 \times 800 = 5,600$

So, the product is between 4,900 and 5,600.

Estimate the product by rounding.

1. 6×316

2. 5×29

3. 4×703

Estimate the product by finding two numbers the exact answer is between.

4. 3×558

5. 7×252

6. 8×361

Name _____

Find the Unknown Factors

Choose two factors from the box to make the estimated product.
You may use the factors more than once.

3	5	624
9	126	957

1. 1,800 _____ × _____

2. 500 _____ × _____

3. 5,000 _____ × _____

4. 900 _____ × _____

8	7	435
6	899	273

5. 1,800 _____ × _____

6. 6,300 _____ × _____

7. 3,200 _____ × _____

8. 2,100 _____ × _____

5	6,149	3,044
2	3	8,756

9. 30,000 _____ × _____

10. 6,000 _____ × _____

11. 9,000 _____ × _____

12. 45,000 _____ × _____

13. **Stretch Your Thinking** Two factors have an estimated product of 10,000. One of these factors is a single digit. What two factors could they be? **Explain** your thinking.

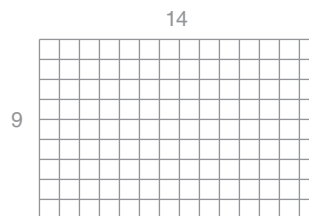
Name _____

Multiply Using the Distributive Property

You can use rectangular models to multiply 2-digit numbers by 1-digit numbers.

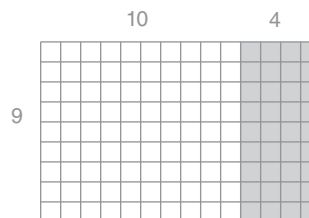
Find 9×14 .

Step 1 Draw a 9 by 14 rectangle on grid paper.



Step 2 Use the Distributive Property and products you know to break apart the model into two smaller rectangles.

Think: $14 = 10 + 4$.



Step 3 Find the product each smaller rectangle represents.

$$9 \times 10 = 90$$

$$9 \times 4 = 36$$

Step 4 Find the sum of the products.

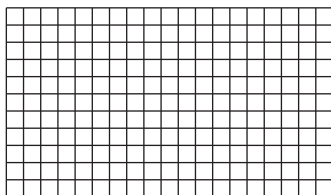
$$90 + 36 = 126$$

So, $9 \times 14 = 126$.

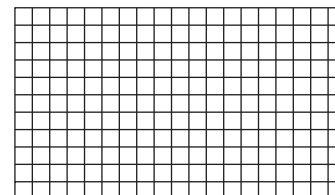
Model the product on the grid.

Record the product.

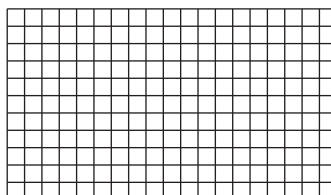
1. 3×13



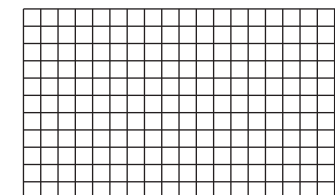
2. 6×16



3. 5×17



4. 4×14

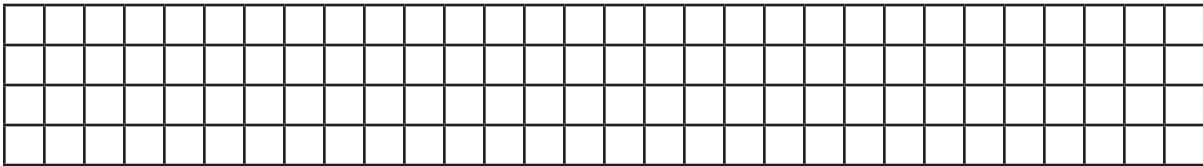
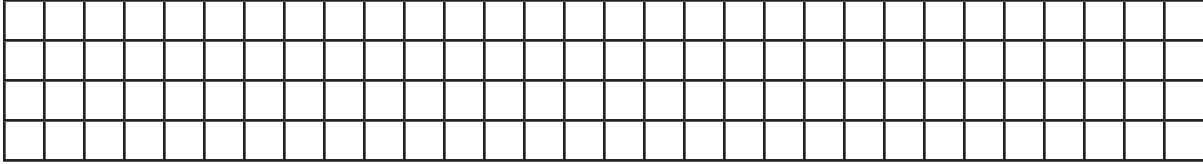


Name _____

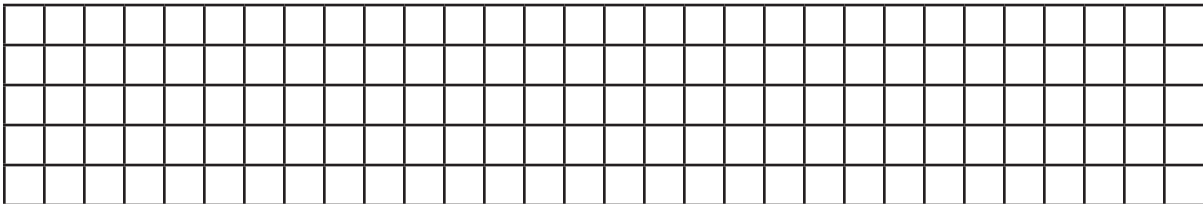
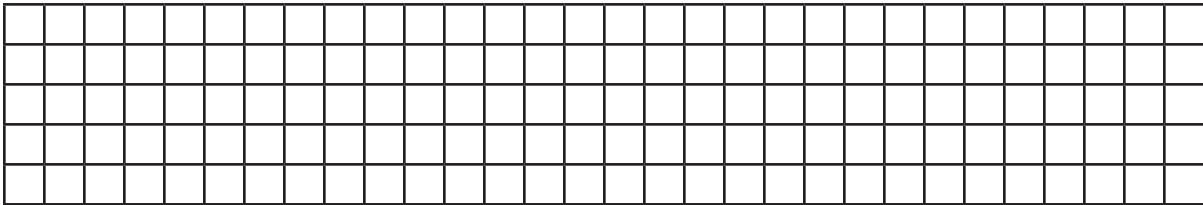
Shading the Grids

Use the Distributive Property. Shade and label each grid.

1. Show 3×28 in two different ways.



2. Show 4×23 in two different ways.



3. **Stretch Your Thinking** Find the partial products for one of your grids in Exercise 1. Then use the Distributive Property to find the product 3×28 .

Name _____

Multiply Using Expanded Form

You can use expanded form or a model to find products.

Multiply. 3×26

Think and Write

Step 1 Write 26 in expanded form.

$$26 = 20 + 6$$

$$3 \times 26 = 3 \times (20 + 6)$$

Step 2 Use the Distributive Property.

$$3 \times 26 = (3 \times 20) + (\underline{3} \times \underline{6})$$

Step 3 Multiply the tens. Multiply the ones.

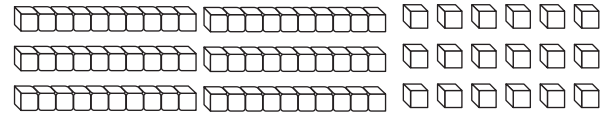
$$\begin{array}{r} 3 \times 26 = (3 \times 20) + (3 \times 6) \\ = \underline{60} + \underline{18} \end{array} \quad \begin{array}{r} 60 \\ +18 \\ \hline 78 \end{array}$$

Step 4 Add the partial products.

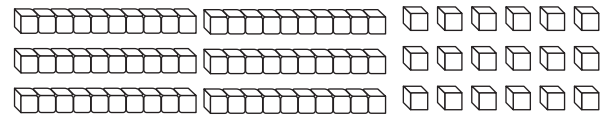
So, $3 \times 26 = \underline{78}$.

Use a Model

Step 1 Show 3 groups of 26.



Step 2 Break the model into tens and ones.



(3×2 tens)

(3×6 ones)

(3×20)

(3×6)

60

18

Step 3 Add to find the total product.

$$\underline{60} + \underline{18} = \underline{78}$$

Record the product. Use expanded form to help.

1. $6 \times 14 =$ _____

2. $4 \times 52 =$ _____

3. $5 \times 162 =$ _____

4. $3 \times 279 =$ _____

Name _____

Expanded Form Match-Up

Write the multiplication expression for each expanded form.
Then match the multiplication expression with its product.

1. $(7 \times 900) + (7 \times 80) + (7 \times 7)$

A. 15,144

B. 7,065

2. $(3 \times 5,000) + (3 \times 40) + (3 \times 8)$

C. 15,720

D. 6,909

3. $(8 \times 900) + (8 \times 2)$

E. 16,224

4. $(4 \times 3,000) + (4 \times 900) + (4 \times 60) + (4 \times 2)$

F. 15,848

G. 7,360

5. $(2 \times 7,000) + (2 \times 800) + (2 \times 6)$

H. 7,216

I. 15,612

6. $(9 \times 700) + (9 \times 80) + (9 \times 5)$

J. 14,172

Name _____

Multiply Using Partial Products

Use partial products to multiply.

Multiply. $7 \times \$332$

Step 1 Estimate the product.

$$332 \text{ rounds to } 300; 7 \times \$300 = \underline{\$2,100}.$$

Step 2 Multiply the 3 hundreds, or 300, by 7.

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array} \quad \text{or} \quad \begin{array}{r} \$300 \\ \times 7 \\ \hline \$2,100 \end{array}$$

Step 3 Multiply the 3 tens, or 30, by 7.

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array} \quad \text{or} \quad \begin{array}{r} \$30 \\ \times 7 \\ \hline \$210 \end{array}$$

Step 4 Multiply the 2 ones, or 2, by 7.

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array} \quad \text{or} \quad \begin{array}{r} \$2 \\ \times 7 \\ \hline \$14 \end{array}$$

Step 5 Add the partial products.

$$\$2,100 + \$210 + \$14 = \underline{\$2,324}$$

So, $7 \times \$332 = \$2,324$. Since $\$2,324$ is close to the estimate of $\$2,100$, it is reasonable.

Estimate. Then record the product.

1. Estimate: _____

$$\begin{array}{r} 181 \\ \times 2 \\ \hline \end{array}$$

2. Estimate: _____

$$\begin{array}{r} 156 \\ \times 4 \\ \hline \end{array}$$

3. Estimate: _____

$$\begin{array}{r} \$210 \\ \times 5 \\ \hline \end{array}$$

4. Estimate: _____

$$\begin{array}{r} 303 \\ \times 6 \\ \hline \end{array}$$

5. Estimate: _____

$$\begin{array}{r} \$427 \\ \times 2 \\ \hline \end{array}$$

6. Estimate: _____

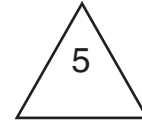
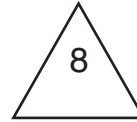
$$\begin{array}{r} \$367 \\ \times 5 \\ \hline \end{array}$$

Name _____

Shaping Factors

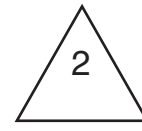
Choose one number from a circle and another number from a triangle. Then use these two numbers to write a number sentence that is true. You can use numbers more than once.

1. Find the least product.



2. Find the greatest product.

3. Find the product closest to 1,050.



4. Find a product with an 8 in the ones place.

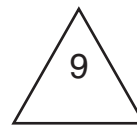


5. Find the greatest product ending in 25.

6. Find a product between 1,500 and 1,700.

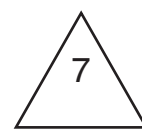
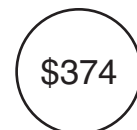


7. Find a product that contains only the digits 2 and 9.



8. Find the product with three zeros.

9. Find the product closest to 500.



10. Find the product closest to 2,000.

Name _____

Multiply Using Mental Math

<p>Use addition to break apart the larger factor.</p> <p>Find 8×214.</p> <p>Think: $214 = 200 + 14$</p> $8 \times 214 = (8 \times 200) + (8 \times 14)$ $= \underline{1,600} + \underline{112}$ $= \underline{1,712}$	<p>Use subtraction to break apart the larger factor.</p> <p>Find 6×298.</p> <p>Think: $298 = 300 - 2$</p> $6 \times 298 = (6 \times 300) - (6 \times 2)$ $= \underline{1,800} - \underline{12}$ $= \underline{1,788}$
<p>Use halving and doubling.</p> <p>Find 14×50.</p> <p>Think: 14 can be evenly divided by 2.</p> $14 \div 2 = \underline{7}$ $7 \times 50 = \underline{350}$ $2 \times 350 = \underline{700}$	<p>When multiplying more than two numbers, use the Commutative Property to change the order of the factors.</p> <p>Find $2 \times 9 \times 50$.</p> <p>Think: $2 \times 50 = \underline{100}$</p> $2 \times 9 \times 50 = 2 \times \underline{50} \times 9$ $= \underline{100} \times 9$ $= \underline{900}$

Find the product. Tell which strategy you used.

1. $5 \times 7 \times 20$

2. 6×321

3. 86×50

4. 9×399

Name _____

Multiply by 11 Mentally

To find the product of a two-digit number and 11, add the digits in the two-digit number and write the sum between the two digits. If the sum is greater than 9, write the *last* digit of the sum between the two digits. Then add 1 to the *first* digit.

<p>Example 1: Multiply 25×11. Add the digits in 25: $2 + 5 = 7$ Place the sum, 7, between 2 and 5. So, $25 \times 11 = 275$.</p>	<p>Example 2: Multiply 59×11. Add the digits in 59: $5 + 9 = 14$ Place the last digit, 4, between 5 and 9. Add 1 to the first digit: $5 + 1 = 6$ So, $59 \times 11 = 649$.</p>
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Find the product.

1. 17×11

2. 32×11

3. 45×11

4. 39×11

5. 67×11

6. 89×11

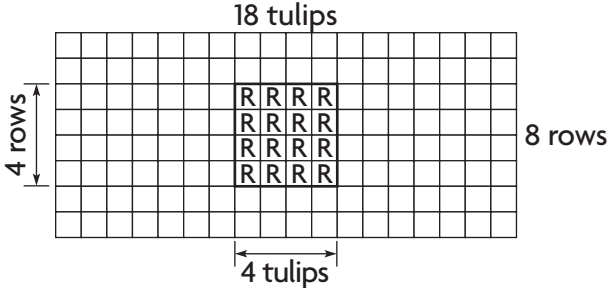
7. **Stretch Your Thinking** Find a way to multiply 354×11 mentally. Describe your method and show that it works.

Name _____

Problem Solving • Multistep Multiplication Problems

Use the strategy *draw a diagram* to solve a multistep multiplication problem.

Amy planted 8 rows with 18 tulips in each row. In each of the 4 middle rows, there are 4 red tulips. All of the other tulips are yellow. How many of the tulips are yellow tulips?

Read the Problem	Solve the Problem				
<p>What do I need to find?</p> <p>I need to find the total number of <u>yellow</u> tulips.</p>	<p>I drew a diagram for each color of tulip.</p>  <p>Next, I found the number in each section.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">All Tulips</th> <th style="text-align: center;">Red Tulips</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">$8 \times 18 = 144$</td> <td style="text-align: center;">$4 \times 4 = 16$</td> </tr> </tbody> </table> <p>Last, I subtracted the number of red tulips from the total number of tulips.</p> $\underline{144} - \underline{16} = \underline{128}$ <p>So, there are <u>128</u> yellow tulips.</p>	All Tulips	Red Tulips	$8 \times 18 = 144$	$4 \times 4 = 16$
All Tulips		Red Tulips			
$8 \times 18 = 144$		$4 \times 4 = 16$			
<p>What information do I need to use?</p> <p>There are <u>8</u> rows of tulips with <u>18</u> tulips in each row.</p> <p>There are <u>4</u> rows of tulips with <u>4</u> red tulips in each row.</p>					
<p>How will I use the information?</p> <p>I can <u>multiply</u> to find the total number of tulips and the number of red tulips.</p> <p>Then I can <u>subtract</u> to find the number of yellow tulips.</p>					

1. A car dealer has 8 rows of cars with 16 cars in each row. In each of the first 3 rows, 6 are used cars. The rest of the cars are new cars. How many new cars does the dealer have?

2. An orchard has 4 rows of apple trees with 12 trees in each row. There are also 6 rows of pear trees with 15 trees in each row. How many apple and pear trees are in the orchard?

Name _____

2-Digit Roses

Draw a diagram to solve the problem.

A rose garden has 8 rows of 26 rose bushes each. In each of the first 5 rows, 7 bushes have pink roses. In each of the first 3 rows, 12 bushes have yellow roses. The rest of the bushes have red roses. How many bushes have red roses?

Read the Problem	Solve the Problem
<p>What do I need to find?</p> <p>I need to find the number of bushes with _____ roses.</p>	<p>Draw a diagram and do your work here.</p> <p>I found the total number of rose bushes. _____</p> <p>I found the number of pink rose bushes. _____</p> <p>I found the number of yellow rose bushes. _____</p>
<p>What information do I need to use?</p> <p>In the entire garden, there are _____ rows with _____ bushes in each row.</p> <p>There are _____ rows with _____ pink bushes in each row.</p> <p>There are _____ rows with _____ yellow bushes in each row.</p>	
<p>How will I use the information?</p> <p>I can _____ to find the total number of bushes, the number of pink rose bushes, and the number of yellow rose bushes.</p>	

1. What else do you need to do to solve the problem?

2. **Stretch Your Thinking** Give at least two reasons why drawing a diagram is helpful when solving a problem.

Name _____

Multiply 2-Digit Numbers with Regrouping

Use place value to multiply with regrouping.

Multiply. 7×63

Step 1 Estimate the product.

$$7 \times 60 = 420$$

Step 2 Multiply the ones. Regroup 21 ones as 2 tens 1 one. Record the 1 one below the ones column and the 2 tens above the tens column.

$$\begin{array}{r} 2 \\ 63 \\ \times 7 \\ \hline 1 \end{array}$$

$$7 \times 3 \text{ ones} = 21 \text{ ones}$$

Step 3 Multiply the tens. Then, add the regrouped tens. Record the tens.

$$\begin{array}{r} 2 \\ 63 \\ \times 7 \\ \hline 441 \end{array}$$

$$44 \text{ tens} = 4 \text{ hundreds} \\ 4 \text{ tens}$$

$$7 \times 6 \text{ tens} = 42 \text{ tens}$$

Add the 2 regrouped tens.

$$42 \text{ tens} + 2 \text{ tens} = 44 \text{ tens}$$

So, $7 \times 63 = 441$. Since 441 is close to the estimate of 420, it is **reasonable**.

Estimate. Then record the product.

1. Estimate: _____ 2. Estimate: _____ 3. Estimate: _____ 4. Estimate: _____

$$\begin{array}{r} 42 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \$98 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 37 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} \$54 \\ \times 9 \\ \hline \end{array}$$

5. Estimate: _____ 6. Estimate: _____ 7. Estimate: _____ 8. Estimate: _____

$$\begin{array}{r} 37 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 93 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 86 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 59 \\ \times 7 \\ \hline \end{array}$$


Name _____

Regrouping Review

Each multiplication problem below was solved using partial products. Some errors were made. Multiply using regrouping to check each answer. Describe any errors that you find.

<p>1. Partial product</p> $\begin{array}{r} 72 \\ \times 8 \\ \hline 26 \\ + 560 \\ \hline 586 \end{array}$	<p>Regrouping</p> $\begin{array}{r} 72 \\ \times 8 \\ \hline \end{array}$	<p>2. Partial product</p> $\begin{array}{r} 65 \\ \times 9 \\ \hline 54 \\ + 540 \\ \hline 594 \end{array}$	<p>Regrouping</p> $\begin{array}{r} 65 \\ \times 9 \\ \hline \end{array}$
<p>Did you find any errors? If so, describe.</p> <p>_____</p> <p>_____</p> <p>_____</p>		<p>Did you find any errors? If so, describe.</p> <p>_____</p> <p>_____</p> <p>_____</p>	
<p>3. Partial product</p> $\begin{array}{r} 36 \\ \times 5 \\ \hline 11 \\ + 150 \\ \hline 161 \end{array}$	<p>Regrouping</p> $\begin{array}{r} 36 \\ \times 5 \\ \hline \end{array}$	<p>4. Partial product</p> $\begin{array}{r} 47 \\ \times 4 \\ \hline 28 \\ + 16 \\ \hline 44 \end{array}$	<p>Regrouping</p> $\begin{array}{r} 47 \\ \times 4 \\ \hline \end{array}$
<p>Did you find any errors? If so, describe.</p> <p>_____</p> <p>_____</p>		<p>Did you find any errors? If so, describe.</p> <p>_____</p> <p>_____</p>	

5. Stretch Your Thinking Compare the factors and the product in Exercise 4. What information does this give you?

6. Write Math  **Explain** how you can use partial products to check products you found with regrouping.

Name _____

Multiply 3-Digit and 4-Digit Numbers with Regrouping

When you multiply 3-digit and 4-digit numbers, you may need to regroup.

Estimate. Then find the product.

$$\begin{array}{r} \$1,324 \\ \times \quad 7 \\ \hline \end{array}$$

Step 1 Estimate the product.

$$\$1,324 \text{ rounds to } \$1,000; \$1,000 \times 7 = \mathbf{\$7,000}.$$

Step 2 Multiply the 4 ones by 7.

Regroup the 28 ones as 2 tens 8 ones.

$$\begin{array}{r} 1,324 \\ \times 7 \\ \hline 8 \end{array}$$

Step 3 Multiply the 2 tens by 7.

Add the regrouped tens.

Regroup the 16 tens as 1 hundred 6 tens.

$$\begin{array}{r} 1,324 \\ \times 7 \\ \hline 68 \end{array}$$

Step 4 Multiply the 3 hundreds by 7.

Add the regrouped hundred.

Regroup the 22 hundreds as 2 thousands 2 hundreds.

$$\begin{array}{r} 1,324 \\ \times 7 \\ \hline 268 \end{array}$$

Step 5 Multiply the 1 thousand by 7.

Add the regrouped thousands.

$$\begin{array}{r} 1,324 \\ \times 7 \\ \hline \mathbf{\$9,268} \end{array}$$

So, $7 \times \$1,324 = \$9,268$.

Since \$9,268 is close to the estimate of \$7,000, the answer is **reasonable**.

Estimate. Then find the product.

1. Estimate: _____ 2. Estimate: _____ 3. Estimate: _____ 4. Estimate: _____

$$\begin{array}{r} 3,184 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} \$828 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2,637 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} \$6,900 \\ \times \quad 7 \\ \hline \end{array}$$

Name _____

Multiplication Mystery

There's something mysterious in the water off the coast of Florida.
To discover what it is, find the products and use the decoder below.
The first letter has been done for you.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

<p>1. Letter 1: $2 \times 6,532$ Answer: <u>13,064</u> Code: Use the ten thousands digit and the thousands digit. 13 Letter: M</p>	<p>2. Letter 2: 5×245 Answer: _____ Code: Use the thousands digit. __ Letter: __</p>	<p>3. Letter 3: $3 \times 4,893$ Answer: _____ Code: Use the ten thousands digit and the thousands digit. __ Letter: __</p>	<p>4. Letter 4: 7×198 Answer: _____ Code: Use the thousands digit. __ Letter: __</p>
<p>5. Letter 5: $6 \times 3,411$ Answer: _____ Code: Use the ten thousands digit and the thousands digit. __ Letter: __</p>	<p>6. Letter 6: 4×129 Answer: _____ Code: Use the hundreds digit. __ Letter: __</p>	<p>7. Letter 7: 8×730 Answer: _____ Code: Use the thousands digit. __ Letter: __</p>	

IT'S A **M** _____ !

8. The product of 5 and another number has the code for E in its ones place. What digit could be in the ones place of the other number? **Explain.**

9.  **Write Math** Is the product of a 4-digit number and a 1-digit number always a 5-digit number? **Explain.**

Name _____

Algebra • Solve Multistep Problems Using Equations

The **Order of Operations** is a special set of rules which gives the order in which calculations are done in an expression. First, multiply and divide from left to right. Then, add and subtract from left to right.

Use the order of operations to find the value of n .

$$6 \times 26 + 3 \times 45 - 11 = n$$

Step 1 Circle the first multiplication expression in the equation.

$$(6 \times 26) + 3 \times 45 - 11 = n$$

Step 2 Multiply 6×26 .

$$\underline{156} + 3 \times 45 - 11 = n$$

Step 3 Circle the next multiplication expression in the equation.

$$156 + (3 \times 45) - 11 = n$$

Step 4 Multiply 3×45 .

$$156 + \underline{135} - 11 = n$$

Step 5 There are no more multiplication or division expressions. Circle the first addition expression in the equation.

$$(156 + 135) - 11 = n$$

Step 6 Add $156 + 135$.

$$\underline{291} - 11 = n$$

Step 7 Subtract $291 - 11$.

$$\underline{280} = n$$

Find the value of n .

1. $5 \times 43 + 9 \times 24 + 25 = n$

$$\underline{\hspace{2cm}} = n$$

2. $7 \times 29 + 4 \times 46 - 56 = n$

$$\underline{\hspace{2cm}} = n$$

Name _____

Same Answer Multistep

Find the value of n for each exercise. Then identify the exercises that have the same answer.

1. $6 \times 36 + 3 \times 37 + 57 = n$

_____ = n

2. $8 \times 47 + 2 \times 29 - 80 = n$

_____ = n

3. $7 \times 45 + 4 \times 19 - 17 = n$

_____ = n

4. $7 \times 56 + 2 \times 12 - 52 = n$

_____ = n

5. $5 \times 52 + 6 \times 12 + 42 = n$

_____ = n

6. $9 \times 32 + 4 \times 28 - 16 = n$

_____ = n

7. $4 \times 46 + 3 \times 61 + 17 = n$

_____ = n

8. $9 \times 39 + 2 \times 19 - 15 = n$

_____ = n

9. $2 \times 98 + 8 \times 16 + 30 = n$

_____ = n

10. $3 \times 75 + 4 \times 23 + 47 = n$

_____ = n

11. Which exercise(s) have the same answer as Exercise 1? _____

12. Which exercise(s) have the same answer as Exercise 2? _____

13. Which exercise(s) have the same answer as Exercise 3? _____

14. **Stretch Your Thinking** What statement can you make about the equations in Exercise 4 and Exercise 10? **Explain.**

For 1–3, use the table.

Prices for Roses					
Rose	Regular Price	Price for 3 or more	Rose	Regular Price	Price for 3 or more
Amsterdam	\$17	\$14	Amber Star	\$16	\$13
Coretta Scott King	\$25	\$22	America	\$19	\$16
Eden	\$18	\$15	Cinderella	\$15	\$12

1. What is the cost of 3 Amsterdam roses? Show your work.

2. Mr. Rivera buys 5 Eden roses and 2 Coretta Scott King roses. What is the cost of the roses? Show your work and explain how you found the answer.

3. Shari will buy 3 Cinderella roses or 2 America roses. She wants to buy the roses that cost less. What roses will she buy? How much will she save? Show your work.

GO ON 

4. For numbers 4a–4d, select True or False for each equation.

4a. $6 \times 723 = 4,228$ True False

4b. $7 \times 3,249 = 22,743$ True False

4c. $4 \times 938 = 3,652$ True False

4d. $9 \times 2,641 = 23,769$ True False

5. Part A

Draw a line to match each section in the model to the partial product it represents.



4×3

4×100

4×70

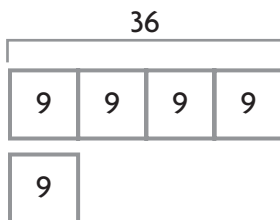
Part B

Then find 4×173 . Show your work and explain.

GO ON

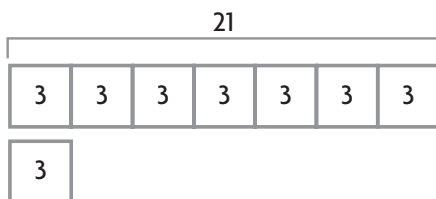
6. For numbers 6a–6c, write an equation or a comparison sentence using the numbers on the tiles.

6a.



times as many as is .

6b.



× =

6c. $9 \times 8 = 72$

times as many as is .

7. Multiply 6×64 . For numbers 7a–7d, select True or False for each statement.

- 7a. A reasonable estimate of the product is 390. True False
- 7b. Using partial products, the products are 240 and 36. True False
- 7c. Using regrouping, 24 ones are regrouped as 4 tens and 2 ones. True False
- 7a. The product is 384. True False

8. It costs 8,355 points to build each school in the computer game *Town Planning*. How much does it cost to build 6 schools? Show your work.



9. Multiply 9×354 using place value and expanded form. Choose the number from the box to complete the expression.

$$(9 \times \begin{array}{|c|} \hline 300 \\ \hline 30 \\ \hline 3 \\ \hline \end{array}) + (9 \times \begin{array}{|c|} \hline 5 \\ \hline 50 \\ \hline 500 \\ \hline \end{array}) + (9 \times \begin{array}{|c|} \hline 400 \\ \hline 40 \\ \hline 4 \\ \hline \end{array})$$

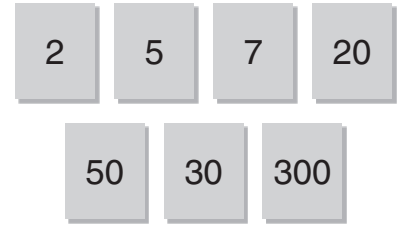
10. For numbers 10a–10b, use place value to find the product.

10a. $8 \times 700 = 8 \times \square$ hundreds
 $= \square$ hundreds
 $= \square$

10b. $4 \times 300 = 4 \times \square$ hundreds
 $= \square$ hundreds
 $= \square$

11. Carrie manages a catering company. She rented 325 chairs each week for the first two weeks of May. Carrie rented 750 chairs each week for the first two weeks of April. The chair rental company forgot to send 23 chairs. How many chairs did Carrie receive in those 4 weeks? Show your work.

12. There is a plant sale at school. The price for each plant is \$7. Which expression can be used to show how much money the school will make if it sells 325 plants? Use the numbers on the tiles to complete your answer.



$$(7 \times \square) + (7 \times \square) + (7 \times \square)$$

13. Find 9×503 . Show your work and explain why the strategy you chose works best with the factors.

14. Lana bought party favors at the store for the school's 6th grade graduation party. Lana bought 7 bags of party hats with 12 hats in each bag. Lana also bought 4 bags of horns with 24 horns in each bag.

Part A

How many more horns than party hats did Lana buy?
Show your work.

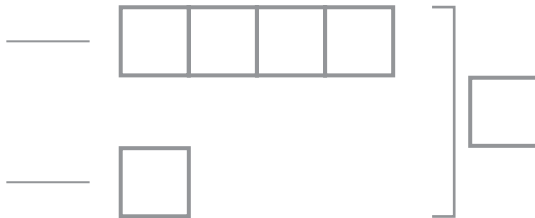
Part B

Lana also bought 3 bags of whistles with 18 whistles in each bag. When the party started, Lana found that 19 of the party favors were broken. How many unbroken party favors were there? Explain your answer.

- 15.** Cathy volunteered to collect cans for a school project. Cathy collected 125 cans in 5 days. There were 6 volunteers, including Cathy, who each collected about the same number of cans. About how many cans did they collect?
- 16.** Kris and Julio played a card game. Together, they scored 36 points in one game. Kris scored 2 times as many points as Julio. How many points did Kris and Julio each score? Write an equation and solve. Explain your work.

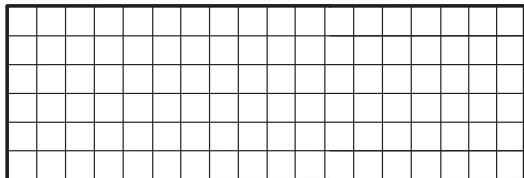
- | |
|-------|
| 135 |
| 400 |
| 600 |
| 1,200 |

- 17.** Heidi's mom made flower arrangements for a party. She made 4 times as many rose arrangements as tulip arrangements. Heidi's mom made a total of 40 arrangements. How many flower arrangements of each type did Heidi's mom make? Complete the bar model. Write an equation and solve.



- 18.** Use the Distributive Property to model the product on the grid. Record the product.

$4 \times 16 =$ _____



Cars, Trains, Boats, and Planes

Every day people travel to and from a city using various forms of transportation. Use multiplication strategies to solve each problem.

1. To go to the beach, Adiyah drives 4 times as many miles as Jacob. Adiyah drives 20 miles. How many miles does Jacob drive? Write an equation and a comparison sentence to solve.

2. Hannah travels 6 times as many minutes to work as Raoul does. Together, they travel for 63 minutes. How many minutes does Hannah travel? Draw a model and write an equation to solve.
3. Ben travels by train 19 miles to work. If Ben travels 8 times a week, how many miles does he travel? Use a drawing and the Distributive Property to solve. Show your work.
4. A ferryboat travels 178 miles in one week. How many miles does the boat travel in 4 weeks? Draw a diagram and use expanded form to solve. Show your work.

5. The chart shows the distance from New York City to three cities.

Distance from New York City (miles)		
Boston, MA	Rochester, NY	Salt Lake City, UT
217	345	2,171

Estimate your answer. Then find the exact answer. Use rounding, regrouping, or place value. Describe the strategy you used.

- a. A plane travels from New York City to Boston once each day. How far does the plane travel in one week on this route?

Estimate _____

Exact answer _____

Strategy _____

- b. Another plane makes 6 trips in one week. It travels from New York City to Rochester 3 times, and from New York City to Salt Lake City 3 times. How many miles does the plane travel each week?

Estimate _____

Exact answer _____

Strategy _____

Multiply by 1-Digit Numbers

Cars, Trains, Boats, and Planes

COMMON CORE STANDARDS

- 4.OA.A.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.A.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.NBT.B.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

PURPOSE

To assess the ability to use strategies to multiply by 1-digit numbers

TIME

25–30 minutes

GROUPING

Individuals

MATERIALS

- Performance Task, paper, pencil

PREPARATION HINTS

- Review basic multiplication facts and arrays before assigning the task.
- Review multiplying a 2-digit number by a 1-digit number before assigning the task.
- Review vocabulary, including key words that indicate multiplication.

IMPLEMENTATION NOTES

- Read the task aloud to students and make sure that all students have a clear understanding of the task.
- Students may use manipulatives to complete the task.
- Allow students as much paper as they need to complete the task.
- Allow as much time as students need to complete the task.
- Students must complete the task individually, without collaboration.
- Collect all student work when the task is complete.

TASK SUMMARY

Students solve one- and multi-step problems that involve multiplication. They write equations and apply properties of operations to solve. They use strategies such as arrays, area models, and place value. They assess the reasonableness of their answers through mental computation and rounding.

REPRESENTATION

In this task, teachers can...

- Provide options for comprehension by linking strategies to prior knowledge of basic multiplication facts, equal groups, and arrays.
- Provide options for comprehension by using cues and prompts to direct attention to key ideas and critical features.

ACTION and EXPRESSION

In this task, teachers can...

- Provide options for physical action by offering place-value blocks for students to use as they solve problems.
- Provide options for planning and strategy development by using prompts for students to “stop and think” about the process before responding to the task.

ENGAGEMENT

In this task, teachers can...

- Optimize relevance by allowing students to personalize and contextualize content into their own lives.
- Provide options for self-regulation by giving timely feedback to students so they can recognize their own progress.

EXPECTED STUDENT OUTCOMES

- Complete the task within the time allowed
- Reflect engagement in a productive struggle
- Multiply whole numbers using strategies and properties of multiplication

SCORING

Use the associated Rubric to evaluate each student’s work.

Performance Task Rubric

CARS, TRAINS, BOATS, AND PLANES

A level 3 response	<ul style="list-style-type: none">• Indicates that the student has made sense of the task, modeled accurately and persevered• Demonstrates an understanding of place value, the multiplication algorithm, and properties of operations when multiplying whole numbers• Indicates a full comprehension of mental math strategies and estimating products• Addresses all aspects of the task using sound mathematical procedures and strategies
A level 2 response	<ul style="list-style-type: none">• Indicates that the student has made sense of most of the task, modeled accurately and persevered• Demonstrates an understanding of place value, the multiplication algorithm, and properties of operations when multiplying whole numbers• Indicates comprehension of using mental math strategies and estimating products• Addresses most aspects of the task using sound mathematical procedures and strategies• May contain a computational error
A level 1 response	<ul style="list-style-type: none">• Shows that the student has made sense of at least some elements of the task• Demonstrates difficulty understanding how to multiply multi-digit whole numbers and determine strategies to approach problems• Indicates little understanding of mental math or estimating• Addresses only some aspects of the task, some aspects may be incomplete
A level 0 response	<ul style="list-style-type: none">• Shows little evidence that the student has made sense of the elements of the task• Reflects a lack of understanding of multiplying whole numbers and the multiplication algorithm• Shows little evidence of addressing the elements of the task

Name _____

For 1–3, use the table.

Prices for Roses					
Rose	Regular Price	Price for 3 or more	Rose	Regular Price	Price for 3 or more
Amsterdam	\$17	\$14	Amber Star	\$16	\$13
Coretta Scott King	\$25	\$22	America	\$19	\$16
Eden	\$18	\$15	Cinderella	\$15	\$12

1. What is the cost of 3 Amsterdam roses? Show your work.

\$42; \$14 Check students' work.

$$\begin{array}{r} \$42 \\ \times 3 \\ \hline \$126 \end{array}$$

2. Mr. Rivera buys 5 Eden roses and 2 Coretta Scott King roses. What is the cost of the roses? Show your work and explain how you found the answer.

\$125; \$15

$$\begin{array}{r} \$15 \\ \times 5 \\ \hline \$75 \end{array}$$

 $2 \times \$25 = \50
 $\$75 + \$50 = \$125$
Possible explanation: First, I found the discounted cost of the Eden roses and the regular cost of the Coretta Scott King roses. Then, I added the total cost of the Eden roses (\$75) and the total cost of the Coretta Scott King roses (\$50).

3. Shari will buy 3 Cinderella roses or 2 America roses. She wants to buy the roses that cost less. What roses will she buy? How much will she save? Show your work.

Shari will buy 3 Cinderella roses; \$2; \$19 × 2 = \$38; \$12 × 3 = \$36; \$38 – \$36 = \$2; Check students' work.

GO ON 

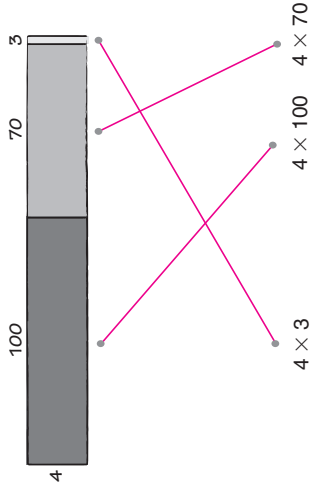
Name _____

4. For numbers 4a–4d, select True or False for each equation.

- 4a. $6 \times 723 = 4,228$ True False
 4b. $7 \times 3,249 = 22,743$ True False
 4c. $4 \times 938 = 3,652$ True False
 4d. $9 \times 2,641 = 23,769$ True False

5. Part A

Draw a line to match each section in the model to the partial product it represents.



Part B

Then find 4×173 . Show your work and explain.

173 Check students' work.

$$\begin{array}{r} 173 \\ \times 4 \\ \hline 400 \\ 280 \\ + 12 \\ \hline 692 \end{array}$$

Possible explanation: The model shows that I can write 173 as $100 + 70 + 3$. Then, I multiply each number by 4 to get the partial products 400, 280, and 12. The sum of the partial products, 692, is the answer.

GO ON 

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Page 3

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6. For numbers 6a–6c, write an equation or a comparison sentence using the numbers on the tiles.

6a.

36	9	9	9	9
9	9	9	9	9
9	3	4	7	8
9	21	36	72	9

4 times as many as 9 is 36.

6b.

21	3	3	3	3	3	3	3
3	3	3	3	3	3	3	3
3	7	3	=	21			

6c. $9 \times 8 = 72$

6d. 9 times as many as 8 is 72.

7. Multiply 6×64 . For numbers 7a–7d, select True or False for each statement.

7a. A reasonable estimate of the product is 390. True False

7b. Using partial products, the products are 240 and 36. True False

7c. Using regrouping, 24 ones are regrouped as 4 tens and 2 ones. True False

7d. The product is 384. True False

8. It costs 8,355 points to build each school in the computer game *Town Planning*. How much does it cost to build 6 schools? Show your work.

50,130 points; Check students' work.

$$\begin{array}{r} 8,355 \\ \times 6 \\ \hline 50,130 \end{array}$$

GO ON

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9. Multiply 9×354 using place value and expanded form. Choose the number from the box to complete the expression.

$(9 \times 300) + (9 \times 30) + (9 \times 4)$	$(9 \times 500) + (9 \times 50) + (9 \times 4)$
300	500
30	50
3	4

10. For numbers 10a–10b, use place value to find the product.

10a. $8 \times 700 = 8 \times 7$ hundreds = 56 hundreds = 5,600

10b. $4 \times 300 = 4 \times 3$ hundreds = 12 hundreds = 1,200

11. Carrie manages a catering company. She rented 325 chairs each week for the first two weeks of May. Carrie rented 750 chairs each week for the first two weeks of April. The chair rental company forgot to send 23 chairs. How many chairs did Carrie receive in those 4 weeks? Show your work.

$325 \times 2 = 650$
 $750 \times 2 = 1,500$
 $650 + 1,500 = 2,150$
 $2,150 - 23 = 2,127$
 Carrie received 2,127 chairs.

GO ON

Chapter 2 Test
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Name _____

12. There is a plant sale at school. The price for each plant is \$7. Which expression can be used to show how much money the school will make if it sells 325 plants? Use the numbers on the tiles to complete your answer.

$$(7 \times \boxed{300}) + (7 \times \boxed{20}) + (7 \times \boxed{5})$$

13. Find 9×503 . Show your work and explain why the strategy you chose works best with the factors.

4,527; Possible explanation: Since 503 is 3 more than 500, I used addition.
 $9 \times (500 + 3) = (9 \times 500) + (9 \times 3) = 4,500 + 27 = 4,527$

14. Lana bought party favors at the store for the school's 6th grade graduation party. Lana bought 7 bags of party hats with 12 hats in each bag. Lana also bought 4 bags of horns with 24 horns in each bag.

Part A

How many more horns than party hats did Lana buy? Show your work.

Lana bought 12 more horns than party hats; $7 \times 12 = 84$; $4 \times 24 = 96$; $96 - 84 = 12$; Check students' work.

Part B

Lana also bought 3 bags of whistles with 18 whistles in each bag. When the party started, Lana found that 19 of the party favors were broken. How many unbroken party favors were there? Explain your answer.

215 unbroken party favors; possible explanation: first, I found the number of whistles, $3 \times 18 = 54$. Next, I added that number to the number of hats and horns, $54 + 84 + 96 = 234$ party favors in all. Last, I subtracted the number of broken party favors, so $234 - 19 = 215$ unbroken party favors.

Name _____

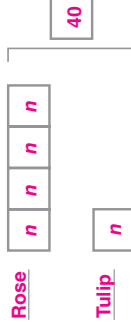
15. Cathy volunteered to collect cans for a school project. Cathy collected 125 cans in 5 days. There were 6 volunteers, including Cathy, who each collected about the same number of cans. About how many cans did they collect?

- 135
- 400
- 600**
- 1,200

16. Kris and Julio played a card game. Together, they scored 36 points in one game. Kris scored 2 times as many points as Julio. How many points did Kris and Julio each score? Write an equation and solve. Explain your work.

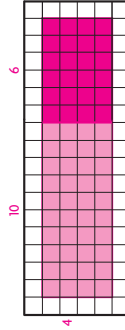
Julio scored 12 points and Kris scored 24 points. possible explanation: Julio scored n points, and Kris scored $2 \times n$ points. Together they scored $3 \times n$ points, so I wrote the equation $3 \times n = 36$. I solved to find $n = 12$ points, and $2 \times n = 24$ points.

17. Heidi's mom made flower arrangements for a party. She made 4 times as many rose arrangements as tulip arrangements. Heidi's mom made a total of 40 arrangements. How many flower arrangements of each type did Heidi's mom make? Complete the bar model. Write an equation and solve.



**$5 \times n = 40$
 $n = 8$
Heidi's mom made 8 tulip arrangements and 32 rose arrangements.**

18. Use the Distributive Property to model the product on the grid. Record the product.



$4 \times 16 = \underline{64}$



Name _____

Chapter 2

Cars, Trains, Boats, and Planes

Every day people travel to and from a city using various forms of transportation. Use multiplication strategies to solve each problem.

1. To go to the beach, Adiyah drives 4 times as many miles as Jacob. Adiyah drives 20 miles. How many miles does Jacob drive? Write an equation and a comparison sentence to solve.

$20 \div 4 = 5$ $a \times 4 = 20$ $a = 5$
 $5 \times 4 = 20$

2. Hannah travels 6 times as many minutes to work as Raoul does. Together, they travel for 63 minutes. How many minutes does Hannah travel? Draw a model and write an equation to solve.



$7 \times 9 = 63$
 $63 \div 7 = 9$
 $m = 9$

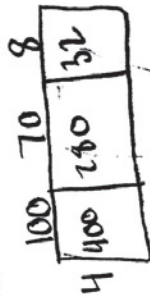
3. Ben travels by train 19 miles to work. If Ben travels 8 times a week, how many miles does he travel? Use a drawing and the Distributive Property to solve. Show your work.



$8 \times 10 = 80$
 $8 \times 9 = 72$

80
 $+ 72$
 152 miles

4. A ferryboat travels 178 miles in one week. How many miles does the boat travel in 4 weeks? Draw a diagram and use expanded form to solve. Show your work.



$4 \times 100 = 400$
 $4 \times 70 = 280$
 $4 \times 8 = 32$

400
 280
 32
 712 miles

5. The chart shows the distance from New York City to three cities.

Distance from New York City (miles)	
Boston, MA	217
Rochester, NY	345
Salt Lake City, UT	2,171

Estimate your answer. Then find the exact answer. Use rounding, regrouping, or place value. Describe the strategy you used.

200 200 200
 $\times 1400$ $\times 345$ $\times 2171$

- a. A plane travels from New York City to Boston once each day. How far does the plane travel in one week on this route?

Estimate 1,400 I used rounding
 Exact answer 1,519

Strategy I multiplied using regrouping.

- b. Another plane makes 6 trips in one week. It travels from New York City to Rochester 3 times, and from New York City to Salt Lake City 3 times. How many miles does the plane travel each week?

Estimate 7,000 I used rounding
 Exact answer 7,548

Strategy I multiplied then added
I used regrouping

345
 $\times 3$
 1035
 $\times 345$
 13725

1035
 $+ 6513$
 7548

2000
 $\times 3$
 6000
 $\times 345$
 121500
 $+ 6900$
 69690

Chapter 2

Name _____

Cars, Trains, Boats, and Planes

Every day people travel to and from a city using various forms of transportation. Use multiplication strategies to solve each problem.

1. To go to the beach, Adiyah drives 4 times as many miles as Jacob. Adiyah drives 20 miles. How many miles does Jacob drive? Write an equation and a comparison sentence to solve.

$20 \div 4 = 5$ miles
 $5 > 4$

2. Hannah travels 6 times as many minutes to work as Raoul does. Together, they travel for 63 minutes. How many minutes does Hannah travel? Draw a model and write an equation to solve.

Hannah $\boxed{10} \boxed{10} \boxed{10} \boxed{10} \boxed{10} \boxed{10}$ $7 \times T = 63$
 Raoul $\boxed{10}$ $63 \div 7 = 9$ $9 \times 6 = 54$ miles

3. Ben travels by train 19 miles to work. If Ben travels 8 times a week, how many miles does he travel? Use a drawing and the Distributive Property to solve. Show your work.

$8 \times 10 = 80$
 $8 \times 9 = 72$
 $80 + 72 = 152$ miles

4. A ferryboat travels 178 miles in one week. How many miles does the boat travel in 4 weeks? Draw a diagram and use expanded form to solve. Show your work.

$100 + 400 = 500$
 $500 + 280 = 780$
 $780 \div 4 = 195$ miles

$100 \times 4 = 400$
 $70 \times 4 = 280$
 $100 \times 4 = 400$

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5. The chart shows the distance from New York City to three cities.

Distance from New York City (miles)		
Boston, MA	Rochester, NY	Salt Lake City, UT
217	345	2,171

$2,171$
 $+ 345$
 $2,516$

Estimate your answer. Then find the exact answer. Use rounding, regrouping, or place value. Describe the strategy you used.

- a. A plane travels from New York City to Boston once each day. How far does the plane travel in one week on this route?

Estimate $2,600$ mental math
 Exact answer $2,733$
 Strategy I did it in my head regrouping

- b. Another plane makes 6 trips in one week. It travels from New York City to Rochester 3 times, and from New York City to Salt Lake City 3 times. How many miles does the plane travel each week?

Estimate $7,200$
 Exact answer $7,548$
 Strategy I Added

$2,171$
 $+ 2,171$
 $2,171$
 $6,513$

345
 $+ 345$
 345
 $1,035$

$6,513$
 $+ 1,035$
 $7,548$

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Chapter 2

Cars, Trains, Boats, and Planes

Every day people travel to and from a city using various forms of transportation. Use multiplication strategies to solve each problem.

1. To go to the beach, Adiyah drives 4 times as many miles as Jacob. Adiyah drives 20 miles. How many miles does Jacob drive? Write an equation and a comparison sentence to solve.

$20 \times 4 = 80$ miles

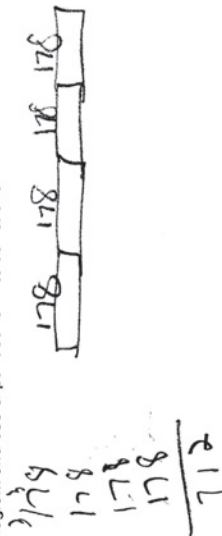
2. Hannah travels 6 times as many minutes to work as Raoul does. Together, they travel for 63 minutes. How many minutes does Hannah travel? Draw a model and write an equation to solve.

$4x + x = 63$ minutes
 $5x = 63$
 $x = 12.6$ minutes
 $12.6 \times 6 = 75.6$ minutes

3. Ben travels by train 19 miles to work. If Ben travels 8 times a week, how many miles does he travel? Use a drawing and the Distributive Property to solve. Show your work.

$19 \times 8 = 152$ miles

4. A ferryboat travels 178 miles in one week. How many miles does the boat travel in 4 weeks? Draw a diagram and use expanded form to solve. Show your work.



5. The chart shows the distance from New York City to three cities.

Distance from New York City (miles)	
Boston, MA	217
Rochester, NY	345
Salt Lake City, UT	2,171

Estimate your answer. Then find the exact answer. Use rounding, regrouping, or place value. Describe the strategy you used.

a. A plane travels from New York City to Boston once each day. How far does the plane travel in one week on this route?

Estimate 200
 Exact answer 217
 Strategy 1 rounded

b. Another plane makes 6 trips in one week. It travels from New York City to Rochester 3 times, and from New York City to Salt Lake City 3 times. How many miles does the plane travel each week?

Estimate 12
 Exact answer 12
 Strategy 1 added

$6 \times 3 = 18$
 $3 \times 3 = 9$
 $18 + 9 = 27$

Name _____

Chapter 2

Cars, Trains, Boats, and Planes

Every day people travel to and from a city using various forms of transportation. Use multiplication strategies to solve each problem.

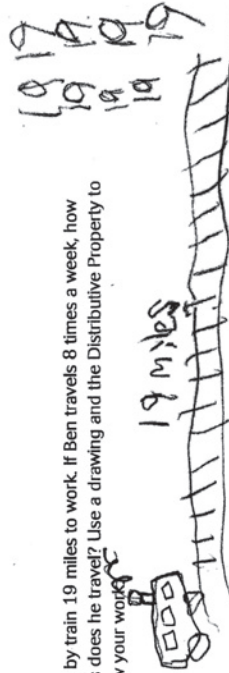
- To go to the beach, Adiyah drives 4 times as many miles as Jacob. Adiyah drives 20 miles. How many miles does Jacob drive? Write an equation and a comparison sentence to solve.

20×4

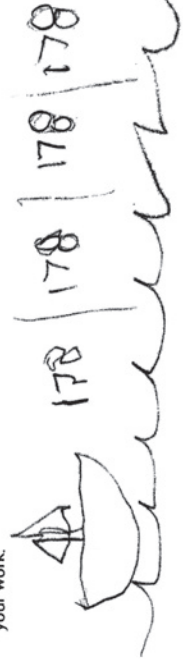
- Hannah travels 6 times as many minutes to work as Raoul does. Together, they travel for 63 minutes. How many minutes does Hannah travel? Draw a model and write an equation to solve.

$63 > 6$

- Ben travels by train 19 miles to work. If Ben travels 8 times a week, how many miles does he travel? Use a drawing and the Distributive Property to solve. Show your work.



- A ferryboat travels 178 miles in one week. How many miles does the boat travel in 4 weeks? Draw a diagram and use expanded form to solve. Show your work.



- The chart shows the distance from New York City to three cities.

Distance from New York City (miles)		
Boston, MA	Rochester, NY	Salt Lake City, UT
217	345	2,171

Estimate your answer. Then find the exact answer. Use rounding, regrouping, or place value. Describe the strategy you used.

- A plane travels from New York City to Boston once each day. How far does the plane travel in one week on this route?

Estimate _____

Exact answer _____

Strategy _____



- Another plane makes 6 trips in one week. It travels from New York City to Rochester 3 times, and from New York City to Salt Lake City 3 times. How many miles does the plane travel each week?

Estimate _____

Exact answer _____

Strategy _____



Chapter 2 Test

Item	Lesson	Standard	Content Focus	Intervene with	Personal Math Trainer
1–3, 8	2.10	4.NBT.B.5	Multiply 2-digit numbers with regrouping.	R—2.10	4.NBT.5
4	2.11	4.NBT.B.5	Multiply 3-digit and 4-digit numbers with regrouping.	R—2.11	4.NBT.5
5	2.7	4.NBT.B.5	Multiply using partial products.	R—2.7	4.NBT.5
6	2.1	4.OA.A.1	Model multiplicative comparisons.	R—2.1	4.OA.1
13	2.8	4.NBT.B.5	Multiply using mental math.	R—2.8	4.NBT.5
10	2.3	4.NBT.B.5	Multiply tens, hundreds, and thousands.	R—2.3	4.NBT.5
16	2.12	4.OA.A.3	Solve multistep problems using equations.	R—2.12	4.OA.3
9.12	2.6	4.NBT.B.5	Multiply using expanded form.	R—2.6	4.NBT.5
11, 14, 15	2.9	4.OA.A.3	Solve multistep multiplication problems.	R—2.9	4.OA.3
7	2.4	4.NBT.B.5	Estimate products by rounding.	R—2.4	4.NBT.5
17	2.2	4.OA.A.2	Solve multiplicative comparison problems.	R—2.2	4.OA.2
18	2.5	4.NBT.B.5	Multiply using the Distributive property.	R—2.5	4.NBT.5

Key: R—Reteach