

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.

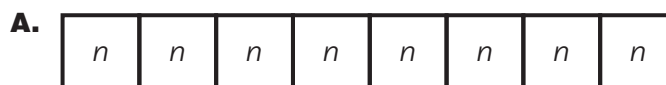
3. 3 times as many as 6 is 18.

4. 10 is 2 times as many as 5.

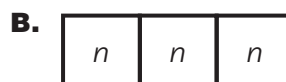
Multiplication Match-Up

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

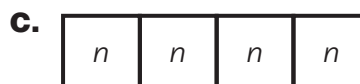
1. Angie has 36 coins. This is 4 times as many coins as Scott has. How many coins does Scott have?



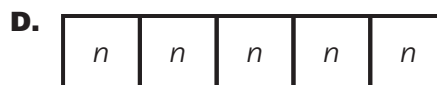
2. Cindy bought 20 stamps. This is 5 times the number of postcards that Yoshi bought. How many postcards did Yoshi buy?



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?



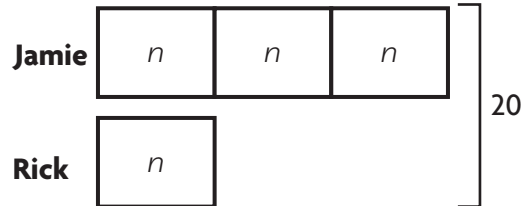
5. **Stretch Your Thinking** Write four comparison sentences for the product 12.

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 boxes. The number in each box 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.

1. 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?
2. 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.

$$4 \times 6 = 24 \quad \leftarrow \text{basic fact}$$

$$4 \times 60 = 240 \quad \leftarrow \text{When you multiply by tens, the last digit in the product is 0.}$$

$$4 \times 600 = 2,400 \quad \leftarrow \text{When you multiply by hundreds, the last two digits in the product are 0.}$$

$$4 \times 6,000 = 24,000 \quad \leftarrow \text{When you multiply by thousands, the last three digits in the product are 0.}$$

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

$$5 \times 4 = 20, \text{ so } 5 \times 4,000 = 20,000$$

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

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

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

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

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

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

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.

$$6 \times 95$$

Step 1 Round 95 to the nearest ten.

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.

$$7 \times 759$$

Step 1 Estimate by rounding to the lesser hundred.

$$7 \times 759$$

Think: $7 \times 7 = 49$

$$7 \times 70 = 490$$

$$7 \times 700 = 4,900$$

$$7 \times \mathbf{700} = \mathbf{4,900}$$

Step 2 Estimate by rounding to the greater hundred.

$$7 \times 759$$

Think: $7 \times 8 = 56$

$$7 \times 80 = 560$$

$$7 \times 800 = 5,600$$

$$7 \times \mathbf{800} = \mathbf{5,600}$$

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

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 _____ \times _____

2. 500 _____ \times _____

3. 5,000 _____ \times _____

4. 900 _____ \times _____

8	7	435
6	899	273

5. 1,800 _____ \times _____

6. 6,300 _____ \times _____

7. 3,200 _____ \times _____

8. 2,100 _____ \times _____

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

9. 30,000 _____ \times _____

10. 6,000 _____ \times _____

11. 9,000 _____ \times _____

12. 45,000 _____ \times _____

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.

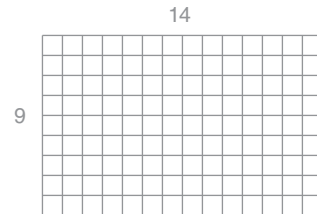
Name _____

Multiply Using the Distributive Property

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

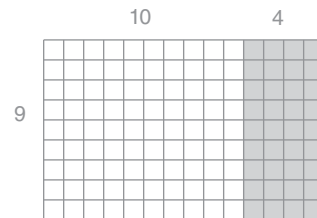
Find 9×14 .

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.

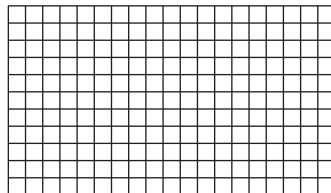
$$90 + 36 = 126$$

So, $9 \times 14 = 126$.

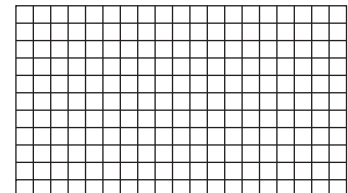
Model the product on the grid.

Record the product.

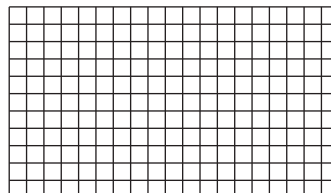
1. 3×13



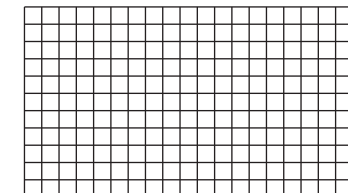
2. 6×16



3. 5×17



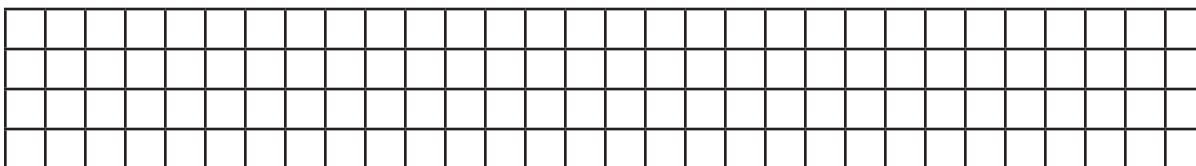
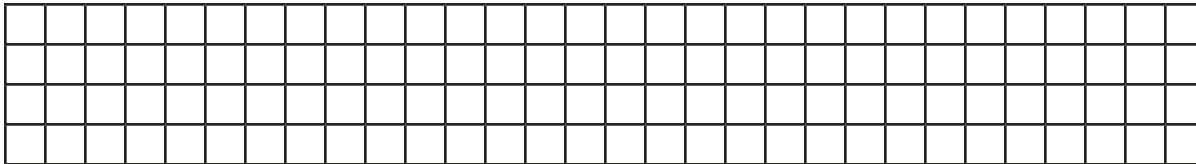
4. 4×14



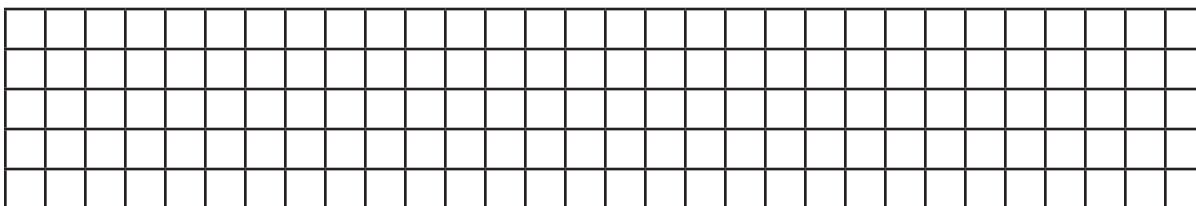
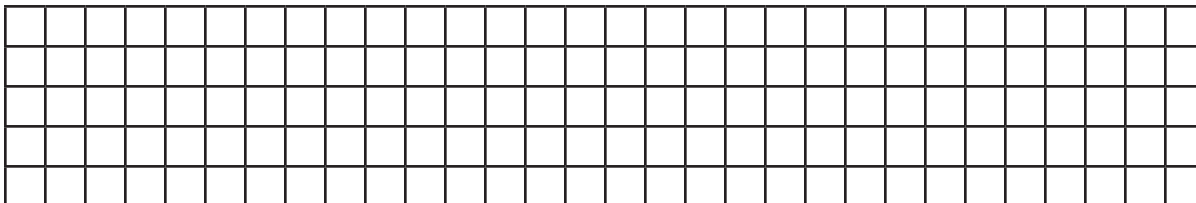
Shading the Grids

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 .

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.

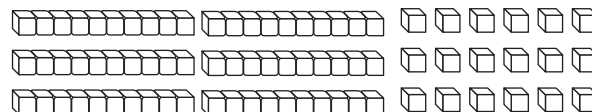
$$\begin{array}{r} 3 \times 26 = (3 \times 20) + (3 \times 6) \\ = \underline{60} + \underline{18} \end{array} \quad \begin{array}{r} 60 \\ +18 \\ \hline 78 \end{array}$$

Step 4 Add the partial products.

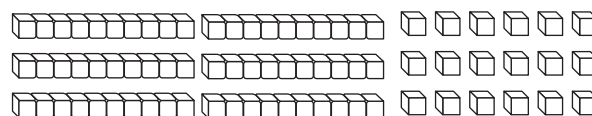
$$\text{So, } 3 \times 26 = \underline{78}.$$

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)

$$\underline{60}$$

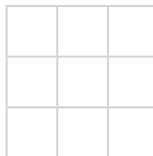
$$\underline{18}$$

Step 3 Add to find the total product.

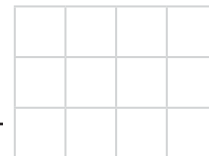
$$\underline{60} + \underline{18} = \underline{78}$$

Record the product. Use expanded form to help.

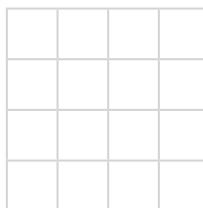
1. $6 \times 14 =$ _____



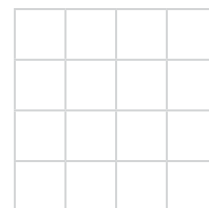
2. $4 \times 52 =$ _____



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

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

D. 6,909

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

Multiply Using Partial Products

Use partial products to multiply.

Multiply. $7 \times \$332$

Step 1 Estimate the product.

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

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

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array}$$

or

$$\begin{array}{r} \$300 \\ \times 7 \\ \hline \$2,100 \end{array}$$

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

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array}$$

or

$$\begin{array}{r} \$30 \\ \times 7 \\ \hline \$210 \end{array}$$

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

$$\begin{array}{r} \$332 \\ \times 7 \\ \hline \end{array}$$

or

$$\begin{array}{r} \$2 \\ \times 7 \\ \hline \$14 \end{array}$$

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: _____

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

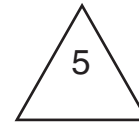
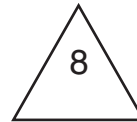
6. Estimate: _____

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

Shaping Factors

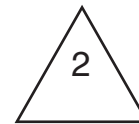
Choose one number from a circle and another number from a triangle. Then use these two numbers to write a number sentence that is true. You can use numbers more than once.

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.

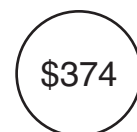


7. Find a product that contains only the digits 2 and 9.

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

Use addition to break apart the larger factor.

Find 8×214 .

Think: $214 = 200 + 14$

$$\begin{aligned} 8 \times 214 &= (8 \times 200) + (8 \times 14) \\ &= \underline{1,600} + \underline{112} \\ &= \underline{1,712} \end{aligned}$$

Use subtraction to break apart the larger factor.

Find 6×298 .

Think: $298 = 300 - 2$

$$\begin{aligned} 6 \times 298 &= (6 \times 300) - (6 \times 2) \\ &= \underline{1,800} - \underline{12} \\ &= \underline{1,788} \end{aligned}$$

Use halving and doubling.

Find 14×50 .

Think: 14 can be evenly divided by 2.

$$\begin{aligned} 14 \div 2 &= \underline{7} \\ 7 \times 50 &= \underline{350} \\ 2 \times 350 &= \underline{700} \end{aligned}$$

When multiplying more than two numbers, use the Commutative Property to change the order of the factors.

Find $2 \times 9 \times 50$.

$$\begin{aligned} \text{Think: } 2 \times 50 &= \underline{100} \\ 2 \times 9 \times 50 &= 2 \times \underline{50} \times 9 \\ &= \underline{100} \times 9 \\ &= \underline{900} \end{aligned}$$

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.

Example 1: Multiply 25×11 .
Add the digits in 25: $2 + 5 = 7$
Place the sum, 7, between 2 and 5.
So, $25 \times 11 = 275$.

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, $59 \times 11 = 649$.

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> <div style="text-align: center;"> <p>18 tulips</p> </div> <p>8 rows</p> <p>4 tulips</p> <p>Next, I found the number in each section.</p> <table style="width: 100%;"> <tr> <td style="text-align: center;">All Tulips</td><td style="text-align: center;">Red Tulips</td></tr> <tr> <td style="text-align: center;">$8 \times 18 = 144$</td><td style="text-align: center;">$4 \times 4 = 16$</td></tr> </table> <p>Last, I subtracted the number of red tulips from the total number of tulips.</p> <p>$144 - 16 = 128$</p> <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 _____

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.

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

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 rounds to \$1,000; $\$1,000 \times 7 = \$7,000$.

Step 2 Multiply the 4 ones by 7.

Regroup the 28 ones as 2 tens 8 ones.

$$\begin{array}{r} ^2 \\ \$1,324 \\ \times \quad 7 \\ \hline 8 \end{array}$$

Step 3 Multiply the 2 tens by 7.

Add the regrouped tens.

Regroup the 16 tens as 1 hundred 6 tens.

$$\begin{array}{r} ^1^2 \\ \$1,324 \\ \times \quad 7 \\ \hline 68 \end{array}$$

Step 4 Multiply the 3 hundreds by 7.

Add the regrouped hundred.

Regroup the 22 hundreds as 2 thousands 2 hundreds.

$$\begin{array}{r} ^2^1^2 \\ \$1,324 \\ \times \quad 7 \\ \hline 268 \end{array}$$

Step 5 Multiply the 1 thousand by 7.

Add the regrouped thousands.

$$\begin{array}{r} ^2^1^2 \\ \$1,324 \\ \times \quad 7 \\ \hline \$9,268 \end{array}$$

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

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

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.  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 .

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

Step 3 Circle the next multiplication expression in the equation.

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

Step 4 Multiply 3×45 .

$$156 + 135 - 11 = n$$

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 $156 + 135$.

$$291 - 11 = n$$

Step 7 Subtract $291 - 11$.

$$280 = n$$

Find the value of n .

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

_____ = n

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

_____ = 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.**
