Lesson 3-6

Monday, September 30, 2019 1:43 PM

Name _____

Lesson 3-6
Solve Word Problems Using Multiplication

Solve & Share

Kevin's family took 239 photos on their summer vacation. Marco and his family took 12 times as many photos on their vacation. How many photos did Marco's family take? ***Solve this problem any way you choose.***

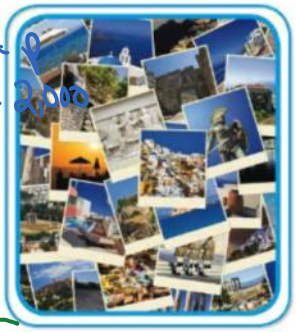
$239 \times 12 = p$

p = total photos

Marco's family → 239 — 12 times

Kevins fam → 239

2,868 photos



$239 \times 12 = p$

$200 \times 10 = 2,000$

$239 \times 12 = 2,868$

I can ...
solve word problems involving multiplication.

Content Standard 5.NBT.B.5
Mathematical Practices MP.1, MP.2, MP.3, MP.4, MP.6

Look Back! MP.3 Construct Arguments How can you use estimation to tell if your answer is reasonable? Explain.

The estimate 2,000 is an underestimate. The product 2,868 is greater than the estimate and in the thousands place.

Essential Question: How Can You Use a Bar Diagram to Solve a Multiplication Problem?

A

In 1980, a painting sold for $1,575. In 2015, the same painting sold for 5 times as much. What was the price of the painting in 2015?

You can draw a bar diagram and use a variable to find the new price of the painting.

B *What am I asked to find?*

The price of the painting in 2015.

Let p = the price of the painting in 2015.

Draw a bar diagram to represent the problem.

price in 2015 (p)

2015	$1,575	$1,575	$1,575	$1,575	$1,575	5 times as much
1980	$1,575					

C Write and solve an equation using the variable.

$\$1,575 \times 5 = p$

$\$1,575 \times 5 = \$7,875.$

So, $p = \$7,875$.

In 2015, the painting sold for $7,875.

You can use repeated addition or division to check your answer!

Convince Me! MP.3 Construct Arguments How can you use estimation to justify that the answer $7,875 is reasonable?

1,575 x 5 is about 2,000 x 5 which equals 10,000 as a overestimate. The product 7,875 is less than the overestimate so it is reasonable.

Name _____

Guided Practice

Do You Understand?

1. MP.4 Model with Math Write a real-world problem that uses multiplication. Then draw a bar diagram and write an equation to solve your problem.

1,219 × 3 = b

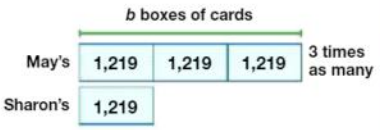
1,000 × 3 = 3,000

$$\begin{array}{r} 1,219 \\ \times\ \ 3 \\ \hline 3,657 \end{array}$$

Do You Know How?

In **2**, write and solve an equation.

2. Sharon's Stationery Store has 1,219 boxes of cards. May's Market has 3 times as many boxes of cards. How many boxes of cards does May's Market have?



3,657 boxes of cards

Complete 3, 8, 10 & 11

Independent Practice

In **3–5**, draw a bar-diagram to model the situation. Then write and solve an equation.

3. There are 14 theaters at the mall. Each theater has 175 seats. How many seats are there in all?

14 × 175 = X

10 × 200 = 2,000

$$\begin{array}{r} 175 \\ \times\ 14 \\ \hline 700 \\ +1750 \\ \hline 2,450 \end{array}$$

2,450 seats in all

4. Brad lives 12 times as far away from the ocean as Jennie. If Jennie lives 48 miles from the ocean, how many miles from the ocean does Brad live?

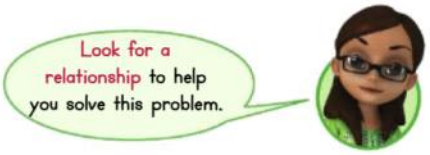
5. A hardware store ordered 13 packs of nails from a supplier. Each pack contains 155 nails. How many nails did the store order?

Math Practices and Problem Solving

6. **Algebra** Sandi's school has 1,030 students. Karla's school has 3 times as many students as Sandi's school. Write an equation to find *s*, the number of students in Karla's school. Then solve your equation.

	s			
Karla's school	1,030	1,030	1,030	3 times as many
Sandi's school	1,030			

7. **Math and Science** Jupiter is about 5 times the distance Earth is from the Sun. Earth is about 93,000,000 miles from the Sun. About how far is Jupiter from the Sun?



8. **Higher Order Thinking** William travels only on Saturdays and Sundays and has flown 1,020 miles this month. Jason travels every weekday and has flown 1,200 miles this month. If each man travels about the same number of miles each day, who travels more miles per day for this month? Explain.

William and Jason travel almost the same distance, but William travels fewer days so he travels more per day.

9. **MP.2 Reasoning** Hwong can fit 12 packets of coffee in a small box and 50 packets of coffee in a large box. He has 10 small boxes of coffee and would like to reorganize the packets into large boxes. How many large boxes could he fill? Explain.

Common Core Assessment

10. Choose all the expressions that are equal to 25 × 4,060.

- ☐ 4,060 × 25
- ☐ 20 × 5 × 4,060 = 100 × 4,060
- ☐ 25 × (4,000 + 60)
- ☐ 25 × (406 × 10) = 25 × 40,600
- ☐ (20 + 5) × 4,060

11. Choose all the expressions that are equal to 38 × 8,500.

- ☐ (85 × 100) × 38 = 85,000 × 38
- ☐ (30 + 8) × (850 × 10)
- ☐ 30 × 8 × 8,500 24 × 8,500
- ☐ 8,500 × 38
- ☐ (30 + 8) × 8,500