

Name _____

Use Multiplication Patterns**Essential Question** How can you multiply with 10, 100, and 1,000?**UNLOCK the Problem** REAL WORLD

Mrs. Goldman ordered 4 boxes of yo-yos for her toy store. Each box had 100 yo-yos. How many yo-yos did Mrs. Goldman order?

- Circle the numbers you need to use.
 - What operation can you use to find the total when you have equal groups?
- _____

? Use a basic fact and a pattern to multiply.

Factors	Products
$4 \times 1 = 4$	Think: Use the basic fact $4 \times 1 = 4$. Look for a pattern of zeros.
$4 \times 10 = 40$	
$4 \times 100 = 400$	

So, Mrs. Goldman ordered 400 yo-yos.

Math Idea

As the number of zeros in a factor increases, the number of zeros in the product increases.

Try This! Use a basic fact and a pattern to find the products.

A. $1 \times 3 = 3$

$10 \times 3 = \underline{\hspace{2cm}}$

B. $5 \times 1 = 5$

$5 \times 10 = 50$

$5 \times 100 = \underline{\hspace{2cm}}$

$5 \times 1,000 = \underline{\hspace{2cm}}$

Math Talk

When multiplying $9 \times 1,000$, how many zeros will be in the product? Explain.

Share and Show



1. Explain how to use a basic fact and a pattern to find 6×100 .

Use a basic fact and a pattern to find the products.

- | | | |
|--------------------------|--------------------------|--------------------------|
| 2. $7 \times 10 =$ _____ | 3. $10 \times 5 =$ _____ | 4. $3 \times 10 =$ _____ |
| $7 \times 100 =$ _____ | $100 \times 5 =$ _____ | $3 \times 100 =$ _____ |
| $7 \times 1,000 =$ _____ | $1,000 \times 5 =$ _____ | $3 \times 1,000 =$ _____ |

On Your Own

Use a basic fact and a pattern to find the products.

- | | | |
|--------------------------|--------------------------|--------------------------|
| 5. $2 \times 10 =$ _____ | 6. $10 \times 8 =$ _____ | 7. $9 \times 10 =$ _____ |
| $2 \times 100 =$ _____ | $100 \times 8 =$ _____ | $9 \times 100 =$ _____ |
| $2 \times 1,000 =$ _____ | $1,000 \times 8 =$ _____ | $9 \times 1,000 =$ _____ |

Find the product.

8. $10 \times 8 =$ _____ 9. $6 \times 100 =$ _____ 10. _____ $= 4 \times 100$
11. $1,000 \times 4 =$ _____ 12. _____ $= 1,000 \times 3$ 13. $9 \times 100 =$ _____

Problem Solving



Use the picture graph.

14. Patty has 20 fewer yo-yos in her collection than Chuck. Draw yo-yos in the picture graph to show the number of yo-yos in Patty's collection. Explain your answer.

