Name _____ Activity

Step Up to Grade 4

Lesson 3
Multiply Multiples of 10

I can . . .
use place-value strategies or properties of operations to multiply by multiples of 10.

I can also look for patterns to solve problems.

Solve & Share

The principal of a school needs to order supplies for 20 new classrooms. Each classroom needs the following items: 20 desks, 30 chairs, and 40 pencils. How many of each item does the principal need to order? ***Solve these problems using any strategy you choose.***

You can use structure. What basic facts can you use to help solve these problems? How are they related? *Show your work in the space below!*

Look Back! Look at the factors and products. What patterns do you notice?

Essential Question How Can You Multiply by Multiples of 10?

A

The number of visitors of each age group for the Sunny Day Amusement Park are shown below. How many children visit the park in 30 days?

Number of visitors each day

B

One Way

Find 30×80.

Use basic facts and place value.

$30 \times 80 = 3$ tens $\times$ 8 tens
$= 24$ hundreds
$= 2{,}400$

2,400 children visit the park in 30 days.

C

Another Way

Find 30×80.

Break apart numbers.
Use the Commutative Property and the Associative Property of Multiplication.

$30 \times 80 = (3 \times 10) \times (8 \times 10)$
$= 3 \times 8 \times 10 \times 10$
$= (3 \times 8) \times (10 \times 10)$
$= 24 \times 100$
$= 2{,}400$

2,400 children visit the park in 30 days.

Convince Me! Look for Relationships Use place value or properties of operations to determine how many adults age 65 and older visit the park in 30 days.

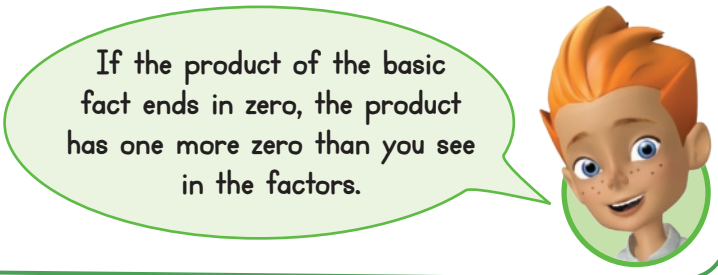
Name _____

Tools

Another Example!

Use properties of operations to find 50×60.

$$\begin{aligned} 50 \times 60 &= 5 \times 10 \times 6 \times 10 \\ &= (5 \times 6) \times (10 \times 10) \\ &= 30 \times 100 \\ &= 3{,}000 \end{aligned}$$



Guided Practice

Do You Understand?

1. Find 50×20. How many zeros are in the product? Explain.

2. How many adults under 65 visit the park in 30 days?

Do You Know How?

For **3–8**, use basic facts and place value or properties of operations to find each product.

3. 30×10

4. 50×10

5. 20×10

6. 60×20

7. 90×40

8. 80×50

Independent Practice

For **9–16**, use basic facts and place value or properties of operations to find each product.

9. 20×70

10. 70×90

11. 40×20

12. 40×30

13. 70×40

14. 20×30

15. 60×40

16. 60×90

For **17–22**, find the missing factor.

17. $10 \times$ _____ $= 100$

18. _____ $\times 20 = 1{,}600$

19. _____ $\times 30 = 1{,}500$

20. $20 \times$ _____ $= 1{,}000$

21. _____ $\times 90 = 8{,}100$

22. $60 \times$ _____ $= 4{,}200$

Problem Solving

23. **Reasoning** The product of two factors is 4,200. If one of the factors is 60, what is the other factor? Explain.

24. **Algebra** There are 30 players on each high school football team. Explain how you can find the total number of players if there are 40 teams. Write and solve an equation.

25. Bob uses 2 gallons of water while brushing his teeth. He uses 10 gallons of water to wash clothes. How many more cups of water did Bob use while washing his clothes than brushing his teeth?

26. James walked 30 minutes each day for 90 days. Show how you can use place value or properties to find how many minutes James walked.

27. **Higher Order Thinking** What is one example of a product that will have the same number of zeros in the factors and the product? What is one example of a product that will NOT have the same number of zeros in the factors as the product?

Assessment Practice

28. Select all of the expressions that have a product of 1,600.

- ☐ 20×80
- ☐ 20×60
- ☐ 40×40
- ☐ 60×30
- ☐ 90×20

29. Which expression has 50 as the missing factor?

- Ⓐ $20 \times ? = 1{,}000$
- Ⓑ $50 \times ? = 3{,}000$
- Ⓒ $30 \times ? = 1{,}800$
- Ⓓ $10 \times ? = 1{,}000$