Estimate Products

Essential Question What strategies can you use to estimate products?

🔑 Unlock the Problem   *Real World*

The Smith family opens the door of their refrigerator 32 times in one day. There are 31 days in May. About how many times is it opened in May?

• Underline any information you will need.

🔑 One Way   Use rounding and mental math.

Estimate. 32 × 31

STEP 1 Round each factor.

32 × 31

↓   ↓

30 × 30

STEP 2 Use mental math.

3 × 3 = 9 ← basic fact

30 × 30 = _____

So, the Smith family opens the refrigerator door about 900 times during the month of May.

Math Talk   **MATHEMATICAL PRACTICES ⑥**

Compare Will the actual number of times the refrigerator is opened in a year be greater than or less than 900? Explain.

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1. On average, a refrigerator door is opened 38 times each day. About how many fewer times in May is the Smith family's refrigerator door opened than the average refrigerator door?

✏️ **Show your work.**

All 24 light bulbs in the Park family's home are CFL light bulbs. Each CFL light bulb uses 28 watts to produce light. About how many watts will the light bulbs use when turned on all at the same time?

🔦 **Another Way** Use mental math and compatible numbers.

Compatible numbers are numbers that are easy to compute mentally.

Estimate. 24×28

STEP 1 Use compatible numbers.

24×28
↓ ↓
25×30 Think: $25 \times 3 = 75$

So, about 750 watts are used.

STEP 2 Use mental math.

$25 \times 3 = 75$

$25 \times 30 = $ _____

Try This! Estimate $26 \times \$79$.

A Round to the nearest ten

$26 \quad \times \quad \$79$
↓   ↓
_____ × _____ = _____

$26 \times \$79$ is about _____.

B Compatible numbers

$26 \quad \times \quad \$79$ Think: How can you use $25 \times 4 = 100$ to help find 25×8?
↓   ↓
$25 \quad \times \quad \$80 = $ _____

$26 \times \$79$ is about _____.

2. Explain why $2,400 and $2,000 are both reasonable estimates.

_____

_____

3. In what situation might you choose to find an estimate rather than an exact answer?

_____

_____

Share and Show MATH BOARD

1. To estimate the product of 62 and 28 by rounding, how would you round the factors? What would the estimated product be?

_____

Name _____

Estimate the product. Choose a method.

2. 96×34

✔️ **3.** $47 \times \$39$

✔️ **4.** 78×72

On Your Own

Estimate the product. Choose a method.

5. 41×78

6. 51×73

7. 34×80

Practice: Copy and Solve **Estimate the product. Choose a method.**

8. 61×31

9. 52×68

10. 26×44

11. $57 \times \$69$

THINK SMARTER **Find two possible factors for the estimated product.**

12. 2,800

13. 8,100

14. 5,600

15. 2,400

16. **GO DEEPER** Mr. Parker jogs for 35 minutes each day. He jogs 5 days in week 1, 6 days in week 2, and 7 days in week 3. About how many minutes does he jog?

17. **GO DEEPER** There are 48 beads in a package. Candice bought 4 packages of blue, 9 packages of gold, 6 packages of red, and 2 packages of silver beads. About how many beads did Candice buy?

Problem Solving • Applications Real World

18. **GO DEEPER** On average, a refrigerator door is opened 38 times each day. Len has two refrigerators in his house. Based on this average, about how many times in a 3-week period are the refrigerator doors opened?

_____

19. The cost to run a refrigerator is about $57 each year. About how much will it have cost to run by the time it is 15 years old?

_____

20. **THINK SMARTER** If Mel opens his refrigerator door 36 times every day, about how many times will it be opened in April? Will the exact answer be more than or less than the estimate? Explain.

_____

_____

_____

21. **MATHEMATICAL PRACTICE ❷** **Represent a Problem** What question could you write for this answer? The estimated product of two numbers, that are not multiples of ten, is 2,800.

_____

_____

WRITE ▸ *Math* • **Show Your Work**

22. **THINK SMARTER** Which is a reasonable estimate for the product? Write the estimate. An estimate may be used more than once.

30 × 20	25 × 50	20 × 20

26 × 48 [_____]   28 × 21 [_____]

21 × 22 [_____]   51 × 26 [_____]

Estimate Products

Estimate the product. Choose a method.

1. 38×21

$$38 \times 21$$

$$\downarrow \quad \downarrow$$

$$40 \times 20$$
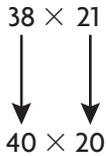
_____800_____

2. 63×19

_____

3. $27 \times \$42$

_____

4. 73×67

_____

5. $37 \times \$44$

_____

6. 45×22

_____

Problem Solving Real World

7. A dime has a diameter of about 18 millimeters. About how many millimeters long would a row of 34 dimes be?

8. A half-dollar has a diameter of about 31 millimeters. About how many millimeters long would a row of 56 half-dollars be?

_____

_____

9. **WRITE** *Math* Describe a real-life multiplication situation for which an estimate makes sense. Explain why it makes sense.

_____

_____

Lesson Check

1. What is a reasonable estimate for the product of 43×68?

_____

_____

2. Marissa burns 93 calories each time she plays fetch with her dog. She plays fetch with her dog once a day. About how many calories will Marissa burn playing fetch with her dog in 28 days?

_____

_____

Lesson Check

3. Use the model to find 3×126.
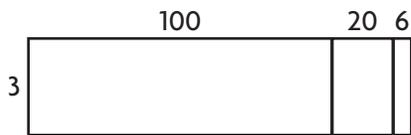
4. A store sold a certain brand of jeans for $38. One day, the store sold 6 pairs of jeans of that brand. How much did the 6 pairs of jeans cost?

_____

_____

5. The Gateway Arch in St. Louis, Missouri, weighs about 20,000 tons. Write an amount that could be the exact number of tons the Arch weighs.

_____

_____

6. What is another name for 23 ten thousands?

_____

_____

**FOR MORE PRACTICE
GO TO THE
Personal Math Trainer**