

**MR 1.1** 

# **Multiply with 9**

**Objective** Use patterns to multiply when 9 is a factor.

### Learn by Example

This chart shows the 9s facts. The yellow boxes show the facts you already know.

These facts follow a special pattern that can help you learn and remember them.

 Look at each row in the chart.
Notice that the tens digit of the product is always 1 less than the underlined factor.

Factors
 Product

 
$$1 \times 9 =$$
 9

  $2 \times 9 =$ 
 18

  $3 \times 9 =$ 
 27

  $4 \times 9 =$ 
 36

  $5 \times 9 =$ 
 45

  $6 \times 9 =$ 
 54

  $7 \times 9 =$ 
 63

  $8 \times 9 =$ 
 9

  $9 \times 9 =$ 
 10

  $10 \times 9 =$ 
 10

$$7 \times 9 = 63$$

• Look at each product in the chart. Notice that the sum of the digits in the product is always 9.

$$7 \times 9 = 63 \longrightarrow 6 + 3 = 9$$

Find the next product in the chart:  $8 \times 9 = \bigcirc$ .

1 What number is 1 less than 8? Write 7 in the tens place of the product.

The tens digit in the product is 1 less than the factor you are multiplying by 9.

2 Seven plus what number is 9? Write 2 in the ones place of the product.

$$8 \times 9 = 72 \leftarrow$$

The sum of the digits in the product is 9.

**Solution:**  $8 \times 9 = 72$ 



### **Guided Practice**

#### Multiply.

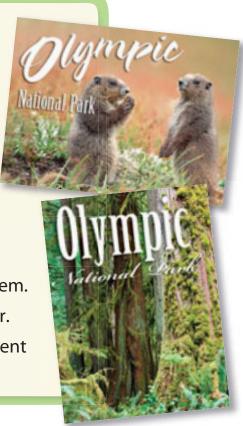
### Ask Yourself

- How can I find the tens digit in the product?
- How can I find the ones digit in the product?

## **Guided Problem Solving**

Use the questions to solve this problem.

- 13. Yoon Ki visited the Olympic National Park rainforest for 9 days. She bought 3 postcards each day. How many postcards did she buy in all?
  - **a. Understand** How many days was Yoon Ki's trip? How many postcards did she buy each day?
  - **b. Plan** Choose a way to solve the problem.
  - **c. Solve** Use your plan. Write the answer.
  - **d. Look Back** Solve the problem a different way. Did you get the same answer?



#### Solve.

**14.** Look back at Problem 13. If Yoon Ki bought 6 postcards each day instead of 3, how many postcards would she have in all?

