

## Lesson 12: Estimating Digits in a Quotient

### Classwork

#### Opening Exercise

Show an example of how you would solve  $5,911 \div 23$ . You can use any method or model to show your work. Just be sure that you can explain how you arrived at your solution.

#### Example 1

We can also use estimates before we divide to help us solve division problems. In this lesson, we will be using estimation to help us divide two numbers using the division algorithm.

Estimate the quotient of  $8,085 \div 33$ . Then, divide.

Create a model to show the division of 8,085 by 33.

**Example 2**

Use estimation and the standard algorithm to divide:  $1,512 \div 27$ .

**Exercises 1–4**

1.  $1,008 \div 48$

- a. Estimate the quotient.
- b. Use the algorithm to divide. Draw a model to show how the steps relate to the steps used in the algorithm.
- c. Check your work.

2.  $2,508 \div 33$

- a. Estimate the quotient.
- b. Use the algorithm to divide. Draw a model to show how the steps relate to the steps used in the algorithm.
- c. Check your work.

3.  $2,156 \div 28$

- a. Estimate the quotient.
- b. Use the algorithm to divide.
- c. Check your work.

4.  $4,732 \div 52$

a. Estimate the quotient.

b. Use the algorithm to divide.

c. Check your work.

**Problem Set**

Complete the following steps for each problem:

- a. Estimate the quotient.
- b. Use the division algorithm to solve.
- c. Show a model that supports your work with the division algorithm.
- d. Check your work.

1.  $3,312 \div 48$

2.  $3,125 \div 25$

3.  $1,344 \div 14$