

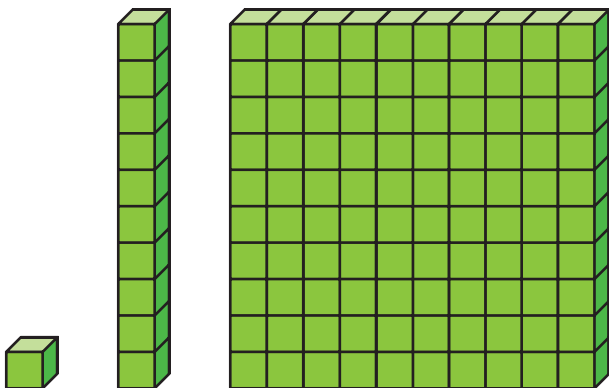
Name _____



Activity

Solve & Share

Place-value blocks are shown below for 1, 10, and 100. What patterns in the shapes and sizes of the blocks do you see?



Step Up to Grade 4

Lesson 1

Place Value Relationships

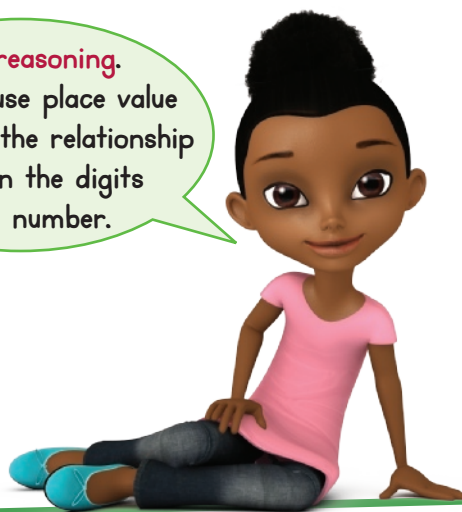
I can ...

recognize that a digit in one place has ten times the value of the same digit in the place to its right.

I can also generalize from examples.

Use **reasoning**.

You can use place value to analyze the relationship between the digits of a number.



Look Back! Describe two ways 100 and 10 are related.



A

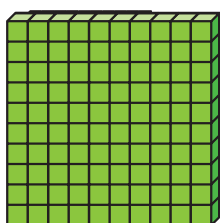
Kiana had bottle caps. She wants to collect ten times as many bottle caps. How many bottle caps will Kiana have in her collection then?

Think place value.



B

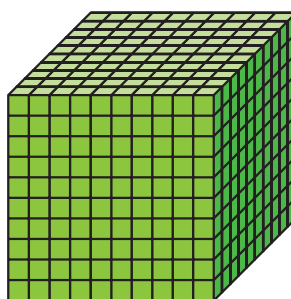
A hundreds flat represents 100 bottle caps.



100

C

To find ten times as many bottle caps, group 10 hundreds flats together.



1,000

One thousand is ten times 100.

$$100 \times 10 = 1,000$$

One hundred is one tenth of 1,000.

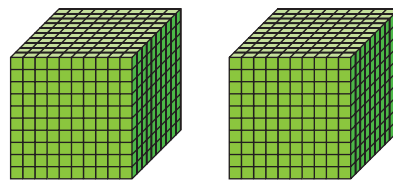
$$1,000 \div 10 = 100$$

Kiana will have 1,000 bottle caps in her collection.

Convince Me! **Generalize** Use place-value blocks to model 1 and 10, 10 and 100, 100 and 1,000. What pattern do you see?

Another Example!

Joe scored 2,000 points on a progressive video game. It took him 5 weeks to get his total point value to 20,000. It took him 3 months to get his total point value to 200,000 points. How many times greater than his first score were his points after 5 weeks? After 3 months?



After 5 weeks, Joe's points were 10 times greater.

$$2,000 \times 10 = 20,000$$

After 3 months, Joe's points were 100 times greater.

$$20,000 \times 10 = 200,000$$

$$10 \times 10 = 100$$

★ Guided Practice



Do You Understand?

1. Is the value of the 2 in 23,406 ten times as great as the value of the 3? Explain.

Do You Know How?

For 2, use the relationship between the values of the digits to solve.

2. Write a number in which the value of the 3 is ten times as great as the value of the 3 in 135,864.

★ Independent Practice ★

For 3–5, use the relationship between the values of the digits to solve.

3. Baseten School District bought 5,000 pencils. They are distributing the pencils evenly to 10 schools in the district. How many pencils will each school get?
4. Place Elementary School is raising money. They raise \$90 a week. How long will it take them to raise \$900?
5. A donation of 50 rulers was given to Value Elementary School. The school had 10 times as many erasers donated. How many erasers were donated?

Problem Solving

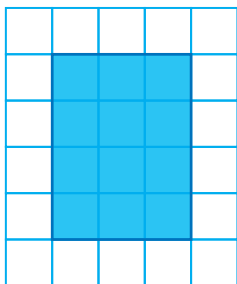
6. What can you say about the 3s in 43,862 and 75,398?

7. **Critique Reasoning** Mia says in 5,555, all the digits have the same value. Is Mia correct? Explain.

8. **Number Sense** In 1934, there was an extreme drought in the Great Plains. In the number 1,934, is the value of the 9 in the hundreds place ten times as great as the value of the 3 in the tens place? Explain.

9. **Critique Reasoning** Vin says in 4,346, one 4 is 10 times as great as the other 4. Is Vin correct? Explain.

10. Describe 2 ways to find the area of the shaded rectangle.



 = 1 square unit

11. **Higher Order Thinking** In 448,244, how is the relationship between the first pair of 4s the same as the relationship between the second pair of 4s?

Assessment Practice

12. Which group of numbers shows the values of the 4s in 44,492?

- (A) 40,000; 4,000; 400
- (B) 40,000; 400; 40
- (C) 4,000; 400; 4
- (D) 400; 40; 4

13. In which number is the value of the red digit ten times as great as the value of the blue digit?

- (A) **3**35,531
- (B) 33**5**,531
- (C) 335,**5**31
- (D) 335,5**3**1