

Name _____

1.1

Place Value Patterns

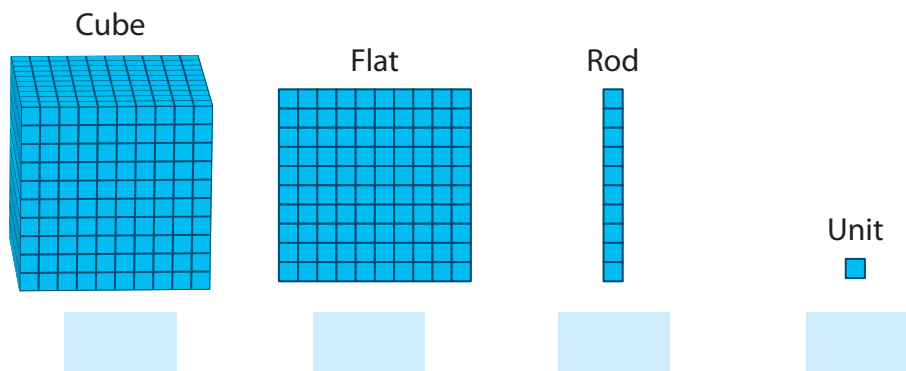
Learning Target: Understand the relationship between place value positions.

Self-Assessment

- 1 I don't understand yet.
- 2 I can do it with help.
- 3 I can do it on my own.
- 4 I can teach someone.

Investigate

Look Back Write the whole number represented by each base ten block.



SMP.8 Look Ahead Use base ten blocks to complete the table.

Base Ten Block	Represents	Base Ten Block
Rod	<input type="text"/> times as much as	Unit
Flat	<input type="text"/> times as much as	Rod
Cube	<input type="text"/> times as much as	Flat
Unit	<input type="text"/> of	Rod
Rod	<input type="text"/> of	Flat
Flat	<input type="text"/> of	Cube



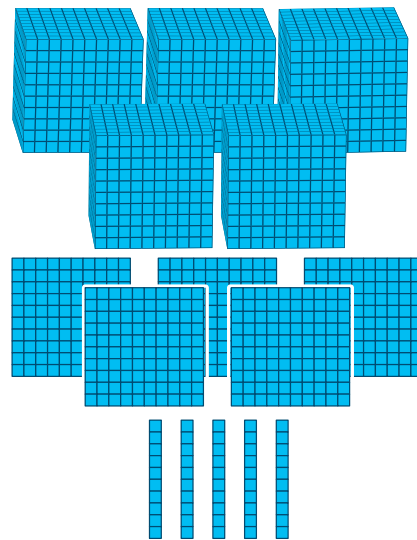
KEY Concept: Place Value Patterns

You can use a place value chart to write numbers that are 10 times a whole number or one-tenth of a whole number.

Example Complete the statements.

Thousands Period			Ones Period		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
		5,	0	0	0
			5	0	0
				5	0

10 times $\frac{1}{10}$



► **5,000** is 10 times as great as 500.

► **50** is one-tenth of 500.

In-Class Practice

Use the place value chart to complete the statement.

Thousands Period			Ones Period		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
	9	0,	0	0	0

I can find a number that is 10 times as much as a given number.

1 2 3 4

I can find a number that is $\frac{1}{10}$ of a given number.

1 2 3 4

- is 10 times as great as 90,000.
- is $\frac{1}{10}$ of 90,000.
- What number is 10 times as great as 6,000?
- What number is $\frac{1}{10}$ of 300?
- 80 is 10 times as great as what number?
- 40,000 is $\frac{1}{10}$ of what number?

7. **SMP.6** Describe the relationship between any place value position and the place value position to its left.

I can describe how positions in a place value chart are related.

1 2 3 4

Complete the table.

8.

Number	10 times as great as the number	$\frac{1}{10}$ of the number
10		
400		
7,000		
50,000		

9.

Number	10 times as great as the number	$\frac{1}{10}$ of the number
200		
30,000		
90		
8,000		

10. **Matching** Match each number with a number that is 10 times as great.

4,000

40

40,000

400



11. **Matching** Match each number with one-tenth of the number.

600

6,000

60

60,000



12. **SMP.1 Puzzle** My thousands digit is equal to my ones digit. My tens digit is equal to my hundreds digit. The sum of my ones and tens digits is 11. My tens digit is one less than my ones digit. What number am I?

Connect to Data

Example Which state is about 10 times larger than Georgia?

Think: Georgia has an area of about 60,000 square miles. A place value chart shows that 600,000 is 10 times as great as 60,000.

► So, **Alaska** is 10 times larger than Georgia.

State/District	Approximate Land Area (square miles)
Alaska	600,000
District of Columbia	60
Georgia	60,000
Hawaii	6,000
Maryland	10,000
Rhode Island	1,000
Wyoming	100,000

In-Class Practice

13. Which state is about 10 times larger than Hawaii?

14. Which state is about one-tenth the size of Wyoming?

15. **Dig Deeper** Which state is about one hundred times larger than the District of Columbia?

16. **Connect to Data** Which animal's weight is one-tenth the weight of a water buffalo?

17. Which animal weighs 100 times as much as a marsh mongoose?

Mammal	Weight (kg)
Minke whale	7,000
Asian elephant	3,000
Water buffalo	700
Bongo	300
Bighorn sheep	70
Wallaroo	30
Tree kangaroo	7
Marsh mongoose	3



Learning Target: Understand the relationship between place value positions.

Example Complete the statements.

Thousands Period			Ones Period		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
		9,	0	0	0
		↑	9	0	0
				9	0

$\xrightarrow{10 \text{ times}}$ $\xrightarrow{\frac{1}{10}}$

► **9,000** is 10 times as great as 900.

► **90** is one-tenth of 900.

Use the place value chart to complete the statement.

Thousands Period			Ones Period		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2,	0	0	0

1. _____ is 10 times as great as 2,000.

2. _____ is $\frac{1}{10}$ of 2,000.

3. What number is 10 times as great as 50?

4. What number is $\frac{1}{10}$ of 4,000?

5. 800 is $\frac{1}{10}$ of what number?

6. 60,000 is 10 times as great as what number?



Complete the table.

7.

Number	10 times as great as the number	$\frac{1}{10}$ of the number
40		
500		
1,000		
80,000		

8.

Number	10 times as great as the number	$\frac{1}{10}$ of the number
20		
3,000		
100		
40,000		

9. **Connect to Data** Which city's population is about 10 times the population of Stockbridge?

Massachusetts City	Approximate Population
New Ashford	200
West Brookfield	4,000
Worcester	200,000
Stockbridge	2,000
Hudson	20,000
Chelsea	40,000

10. **Connect to Real Life** Which city's population is about one-tenth the population of Chelsea?

11. **Dig Deeper** You found a ceramic bowl that is about 5,000 years old. You found another artifact that is one-hundredth the age of the bowl. How old is the other artifact?

years old



Review & Refresh

12. Write the number in two other forms.

Standard form: 751,493

Expanded form:

Word form: