Lesson 1-2

Wednesday, August 14, 2019 9:58 AM

Name MB 11

Lesson 1-2
Understand Whole-Number Place Value

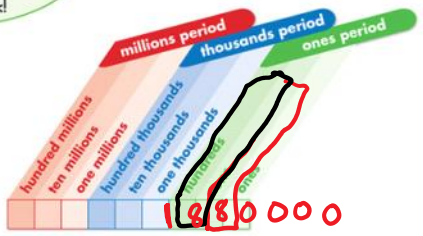
I can ...
understand place-value relationships.

I can also look for patterns to solve problems.

Solve & Share

The population of a city is 1,880,000. What is the value of the two 8s in this number? How are the two values related? ***Use the place-value chart to help solve the problem.***

Use Structure
You can use what you know about place-value relationships to compare the values. Show your work!



Eight Hundred Thousand

The first 8 has a value of 800,000

The second 8 has a value of 80,000
eighty thousand

Look Back! Construct Arguments Is the relationship between the value of the two 8s in 1,088,000 the same as the relationship between the value of the two 8s in the problem above? Explain.

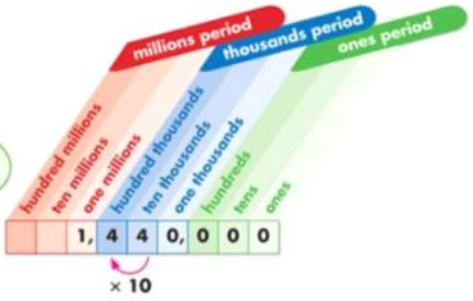
Yes. When the digits are the same and next to each other, the larger digit is ten times greater than the smaller digit.

Digital Resources at PearsonRealize.com Topic 1 | Lesson 1-2 11

Essential Question: How Are Place-Value Positions Related?

A

According to the 2010 U.S. Census, the population of Phoenix, Arizona is about 1,440,000. What is the relationship between the value of the two 4s in this number?



B

Look at the expanded form of 1,440,000. The value of the 4 in the hundred thousands place is 400,000. The value of the 4 in the ten thousands place is 40,000.

400,000 is 10 times as great as 40,000. 40,000 is $\frac{1}{10}$ of 400,000.

Standard form:
1,440,000

Expanded form:
$1 \times 1{,}000{,}000 + 4 \times 100{,}000 + 4 \times 10{,}000$

Using exponents, this can be written as:
$(1 \times 10^6) + (4 \times 10^5) + (4 \times 10^4)$

Number name:
one million, four hundred and forty thousand

Convince Me! Reasoning Is the value of the 1 in 1,440,000 10 times as great as the value of the 4 in the hundred thousands place? Explain.

No. The digit in the millions place is a 1 and the digit in the hundred thousands place is a 4.

Another Example

When two digits next to each other in a number are the same, the digit on the left has 10 times the value of the digit to its right.

When two digits next to each other are the same, the digit on the right has $\frac{1}{10}$ the value of the digit to its left.

5 5 5, 0 0 0
×10 ×$\frac{1}{10}$

Guided Practice

Do You Understand?

1. MP.3 Construct Arguments In 9,290, is the value of the first 9 ten times as great as the value of the second 9? Explain. No. The 9 in thousands place is not next to the 9 in the tens place.

Do You Know How?

2. Write 4,050 in expanded form. $(4 \times 10^3) + (5 \times 10^1)$

In 3 and 4, write the values of the given digits.

3. the 7s in 7,700 7,000 700
4. the 2s in 522 20 2

Complete # 7, 10, 13, 14 & 19

7. 10,000 + 20 + 3 → 10,023

10. 85,000,011 → $(8 \times 10^7) + (5 \times 10^6) + (1 \times 10^1) + (1 \times 1)$

13. the 1s in 2,011,168

10,000
1,000
100

Problem Solving

14. Write the number name and expanded form for the number of driver ants that could be in two colonies.

22,000,000
+ 22,000,000
44,000,000 → Forty-four million

$(4 \times 10^7) + (4 \times 10^6)$

Assessment

19. Colleen says she is thinking of a 4-digit number in which all the digits are the same. The value of the digit in the hundreds place is 200.

Part A

What is the number? Explain.

2,222. The value of 200 has a 2 in the hundreds place, so 2's go in all place values

Part B

Describe the relationship between the values of the digits in the number.

Each 2 is 10 times greater than the 2 to its right.

OR

Each 2 is 1/10 of the 2 to its left.