Unit 4, Lesson 9

Same Digit, Different Value

Let's describe the relationship between the digits in multi-digit numbers.

Warm-up

True or False: Expanded Expressions

Decide if each statement is true or false. Explain your reasoning.

- $4{,}000 + 600 + 70{,}000 = 70{,}460$

- $900{,}000 + 20{,}000 + 3{,}000 = 920{,}000 + 3{,}000$

- $80{,}000 + 800 + 8{,}000 = 800{,}000 + 80 + 8$

Activity 1

Card Sort: Large Numbers

Your teacher will give you a set of cards that show multi-digit numbers.

1. Sort the cards into categories in a way that makes sense to you. Be ready to explain the meaning of your categories.
2. Join with another group and explain how you sorted your cards.
3. Write each number in expanded form.

    a. 4,620

    b. 46,200

    c. 462,000

4. Write the value of the 4 in each number.

5. Compare the value of the 4 in two of the numbers. Write two statements to describe what you notice about the values.

    _____

    _____

6. How is the value of the 2 in 46,200 related to the value of the 2 in 462,000?

Activity 2

Expand Large Numbers

1. Express each number in standard form, expanded form, and word form.

number	expanded form	word form
784,003		
	$50{,}000 + 9{,}000 + 300 + 60 + 1$	
		eight hundred three thousand, ninety-nine
310,060		
		nine hundred thirty-four thousand, nine hundred

2. Choose 2 numbers from the table to make this statement true:

   The 3 in _____ is ten times the value of the 3 in _____.

3. Explain why you chose those numbers.

4. Find 2 classmates who chose different numbers than you. Record their numbers. Take turns sharing your completed statements and explaining your reasoning.

   - The 3 in _____ is ten times the value of the 3 in _____.

   - The 3 in _____ is ten times the value of the 3 in _____.