

Objective

By the end of this lesson, you will be able to understand and work with real numbers.

Materials and Prep

- Paper and pencil
- Calculator (optional)
- Prior knowledge of basic arithmetic operations (addition, subtraction, multiplication, division)

Activities

1. Activity 1: Real Number Line

Draw a number line on a piece of paper, starting from -10 to 10. Mark the whole numbers, fractions, and decimals on the number line. Practice identifying different types of real numbers by placing dots on the number line.

2. Activity 2: Ordering Real Numbers

Write down a list of random real numbers. Practice ordering them from least to greatest or vice versa. Use the greater than ($>$) or less than ($<$) symbols to compare the numbers.

3. Activity 3: Real Number Operations

Choose two real numbers and perform different arithmetic operations on them. Practice addition, subtraction, multiplication, and division of real numbers. Use a calculator if needed.

Talking Points

- **Real Numbers:** Real numbers include whole numbers, fractions, and decimals. They can be positive, negative, or zero.

"Real numbers are like a big family of numbers. They include all the numbers we use in our daily lives, such as whole numbers like 5, fractions like $\frac{1}{2}$, and decimals like 3.14."

- **Number Line:** A number line is a visual representation of real numbers. It helps us understand the order and magnitude of different numbers.

"Imagine a long line that goes from negative infinity to positive infinity. We can place different numbers on this line to see where they belong and how they compare to each other."

- **Ordering Real Numbers:** To order real numbers, we compare their values. The greater than ($>$) and less than ($<$) symbols help us determine which number is larger or smaller.

"When we order real numbers, it's like putting them in a line from the smallest to the largest or vice versa. We use the greater than and less than symbols to show which number comes before or after another."

- **Real Number Operations:** We can perform arithmetic operations like addition, subtraction, multiplication, and division with real numbers, just like we do with whole numbers.

"When we add, subtract, multiply, or divide real numbers, we follow the same rules as we do with whole numbers. The only difference is that real numbers can have decimals or fractions."