# 4th Grade Math: Rounding Decimals

## Lesson Objective:

By the end of this lesson, students will be able to:

- Understand how to round decimals to the nearest whole number, nearest tenth, and nearest hundredth.
- Apply rounding rules to decimals using number lines and place value.
- Use rounding to solve real-world problems.

## 1. Introduction to Rounding Decimals

### What Does It Mean to Round a Decimal?

- Rounding decimals means making a number simpler but keeping its value close to what it was. We often round numbers to make them easier to work with in everyday situations.

### When Do We Round Decimals?

- We round decimals when we want an estimate instead of an exact number. For example, if you want to estimate the total cost of groceries or how long a trip might take.

## 2. Steps for Rounding Decimals

### Rounding to the Nearest Whole Number:

1. Look at the digit in the tenths place (the first digit after the decimal point).
2. If the digit is **5 or more**, round the whole number **up**.
3. If the digit is **4 or less**, keep the whole number the **same**.

### Examples:

- 7.6 rounds up to 8.
- 4.3 rounds down to 4.

### Rounding to the Nearest Tenth:

1. Look at the digit in the hundredths place (the second digit after the decimal point).
2. If the digit is **5 or more**, round the tenths digit **up**.
3. If the digit is **4 or less**, keep the tenths digit the **same**.

### Examples:

- 3.47 rounds to 3.5.
- 6.23 rounds to 6.2.

**Rounding to the Nearest Hundredth:**

1. Look at the digit in the thousandths place (the third digit after the decimal point).
2. If the digit is **5 or more**, round the hundredths digit **up**.
3. If the digit is **4 or less**, keep the hundredths digit the **same**.

**Example:**

- 4.456 rounds to 4.46.
- 8.341 rounds to 8.34.

## 3. Visualizing Rounding Decimals on a Number Line

Using a number line can help us understand rounding:

1. **Draw a number line** between the two nearest whole numbers (for rounding to whole numbers) or the nearest tenths (for rounding to tenths).
2. Place your decimal on the number line.
3. Round up or down based on which whole number or tenth your decimal is closest to.

**Example:**

- For 5.6, draw a number line from 5 to 6. Since 5.6 is closer to 6, we round up.

## 4. Real-World Examples of Rounding Decimals

**Example 1: Rounding Money** You buy something for $4.68. To estimate your total, you can round the price to the nearest whole number. Since 4.68 rounds to 5, you can estimate that your total will be around $5.

**Example 2: Rounding Length** A pencil measures 6.73 inches. Round this to the nearest tenth. Since the hundredths place is 3 (less than 5), the measurement rounds to 6.7 inches.

## 5. Practice Problems

1. **Round to the nearest whole number:**
   - 8.2
   - 5.7
   - 12.49
2. **Round to the nearest tenth:**
   - 7.56
   - 9.34
   - 3.89
3. **Round to the nearest hundredth:**
   - 4.987
   - 2.345

- o   6.213

## 6. Class Discussion

- **When is it useful to round decimals in real life?**
  - o   Examples: Estimating costs, rounding measurements, or rounding time.

## 7. Review and Wrap-Up

- **Key Points:**
  - o   When rounding, look at the digit to the right of the place you are rounding to.
  - o   If the digit is 5 or more, round up.
  - o   If the digit is 4 or less, round down.

**Exit Question:** Round 5.748 to the nearest tenth and explain your reasoning.