

• Areas of Rectangles

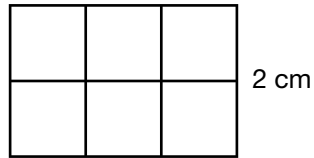
When we measure the “inside” of a flat shape, we measure **area**.

- “Cover” is the cue word for “area.”

$$\text{Area of a rectangle} = \text{length} \times \text{width}$$

- Label “square” units.

Example:



3 cm

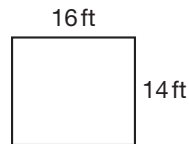
$$\text{Area} = 6 \text{ sq. cm}$$

Practice:

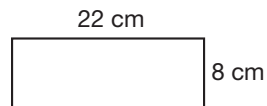
1. How many square tiles with sides 1 ft long would be needed to cover the floor of an 8-ft-by-10-ft room?

2. A rectangle is 5 inches long and 7 inches wide. How many one-square-inch tiles are needed to cover its area?

3. What is the area of this rectangle?



4. How many square centimeters are needed to cover this rectangle?



5. The perimeter of a square is 12 inches. What is its area?

Name _____

Math Course 1, Lesson 32

- **Expanded Notation**
- **More on Elapsed Time**

- To write in expanded notation:

Name the **place value** of each digit:

Example: $3256 = (3 \times 1000) + (2 \times 100) + (5 \times 10) + (6 \times 1)$

- When given expanded notation:

1. Count the places in the first parentheses:

$$(4 \times 1000) + (6 \times 10) + (2 \times 1)$$

2. Draw digit lines for each place: _____, _____

3. Fill in the digit lines: 4 0 6 2

- Do elapsed time problems in three steps.

1. State the "time now."
2. Count the hours forward or backward.
3. Count the minutes forward or backward.

Example: What time is $2\frac{1}{2}$ hours after 10:43 a.m.?

Time now \rightarrow 10:43 a.m.Count forward 2 hr \rightarrow 12:43 p.m.Count forward 30 min \rightarrow 1:13 a.m.

- Measure time between two stated times in two steps.

1. Count the hours forward or backward.
2. Count the minutes forward or backward.

Example: How long is it from 7:15 a.m. to 10:10 a.m.?

7:15 a.m. to 9:15 a.m. \rightarrow 2 hours9:15 a.m. to 10:10 a.m. \rightarrow 55 minutes

It is 2 hours and 55 minutes from 7:15 a.m. to 10:10 a.m.

Practice:

1. Write $(4 \times 100) + (6 \times 1)$ in standard notation. _____

2. Write $(7 \times 1000) + (3 \times 100)$ in standard notation. _____

3. How long is it from 6:45 a.m. to 10:15 a.m.?

4. The movie starts at 1:10 p.m. and ends at 3:22 p.m. How long is the movie?

• Writing Percents as Fractions, Part 1

Percents may be written as fractions.

- The “percent” is the numerator; the denominator is 100.
- Cancel the matching zeros (when possible).
- Reduce as necessary.

Example: $40\% = \frac{40}{100} = \frac{2}{5}$

Practice:

1. Write 40% as a reduced fraction. _____
2. Write 60% as a reduced fraction. _____
3. Write 75% as a reduced fraction. _____
4. Write 12% as a reduced fraction. _____
5. Twenty percent of the answers were wrong.
What fraction of the answers were wrong? _____
6. Fifty percent of the answers were wrong.
What fraction of the answers were wrong? _____

Name _____

Math Course 1, Lesson 34

• Decimal Place Value

We can use bills and coins to help us understand place value.

- As we move to the right, each place is one tenth of the value of the place to its left.

hundreds place	tens place	ones place	↓	tenths place	hundredths place	thousandths place
_____	_____	_____	.	_____	_____	_____
\$100 bills	\$10 bills	\$1 bills		dimes	pennies	mills

- The “-ths” ending indicates the place value is to the right of the decimal point.

Practice:

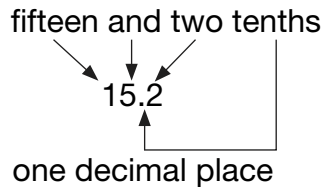
1. Which digit in 6.543 is in the thousandths place? _____
2. Which digit is in the tenths place in 5467.982? _____
3. Write the decimal numeral for two and fourteen hundredths. _____
4. Which digit in 34.76 has the same place value as the 1 in 8.219? _____
5. Which digit in 135.29 has the same place value as the 4 in 37.48? _____
6. Which digit in 2.819 has the same place value as the 7 in 6.537? _____

- **Writing Decimal Numbers as Fractions, Part 1**
- **Reading and Writing Decimal Numbers**

- Notice that the number of decimal places in the decimal number equals the number of zeros in the denominator.

$$0.3 = \frac{3}{10} \quad 0.21 = \frac{21}{100} \quad 0.023 = \frac{23}{1000}$$

- To read a mixed decimal number, we read the whole number part, say “and,” and then read the decimal part.

**Practice:**

1. Write 0.28 as a common fraction. _____
2. Write $\frac{7}{100}$ in decimal form. _____
3. Write $\frac{56}{1000}$ in decimal form. _____
4. Write the decimal numeral for nineteen hundredths. _____
5. Write the decimal numeral for seven and three tenths. _____
6. Write the words for 4.21. _____

• **Subtracting Fractions and Mixed Numbers from Whole Numbers**

- Rename 1 from the whole number as a fraction with the same denominator number to change the whole number to a mixed number.
- Subtract the fractions. Then subtract the whole numbers.

$$\text{Example: } 4 - \frac{1}{2} \longrightarrow \text{Rename 4 as } 3\frac{2}{2} \longrightarrow \begin{array}{r} 3\frac{2}{2} \\ - \frac{1}{2} \\ \hline 3\frac{1}{2} \end{array}$$

Practice:

Simplify 1–6.

1. $2 - \frac{1}{4} = \underline{\hspace{2cm}}$

2. $4 - \frac{3}{8} = \underline{\hspace{2cm}}$

3. $5 - \frac{3}{10} = \underline{\hspace{2cm}}$

4. $3 - 1\frac{2}{3} = \underline{\hspace{2cm}}$

5. $6 - 2\frac{3}{5} = \underline{\hspace{2cm}}$

6. $10 - 5\frac{5}{6} = \underline{\hspace{2cm}}$

• Adding and Subtracting Decimal Numbers

We set up decimal numbers for addition or subtraction by lining up the decimal points. Empty places are treated as zeros.

$$\begin{array}{r} 2.3 \\ 2.41 \\ + 31.7 \\ \hline \end{array}$$

When we line up the decimal points, we also align digits that have the same place values.

Remember to subtract in order.

Practice:

Simplify 1–6.

1. $0.6 + 0.9 =$ _____

2. $0.24 - 0.12 =$ _____

3. $1.5 + 2.34 =$ _____

4. $3.86 - 0.7 =$ _____

5. $0.87 + 6.1 =$ _____

6. $2.00 - 0.90 =$ _____

Name _____

Math Course 1, Lesson 38

- **Adding and Subtracting Decimal Numbers and Whole Numbers**
- **Squares and Square Roots**

- To line up decimal points when adding or subtracting decimal numbers:

1. Place the decimal point **after** the whole number.
2. Fill empty places with zeros. Borrow as necessary.

Example: $3 - 1.2$

$$\begin{array}{r} 3.0 \\ - 1.2 \\ \hline 1.8 \end{array}$$

- We square a number by multiplying the number by itself.

$$5^2 \text{ means "five squared"} \longrightarrow 5 \times 5 = 25$$

Five squared equals 25.

- Finding the square root is the inverse of squaring a number.

$$\sqrt{100} \text{ means "the square root of 100"}$$

Think: What number multiplied by itself equals 100?

$$10 \times 10 = 100$$

The square root of 100 is **10**.

Practice:

Simplify 1–6.

1. $9.12 - 7.8 =$ _____

2. $2.2 + 0.63 + 7 =$ _____

3. $14 + 9.5 + 16.8 =$ _____

4. $0.62 + (3 - 0.14) =$ _____

5. $3^2 + \sqrt{25} =$ _____

6. $3\frac{2}{3} + \sqrt{16} =$ _____

• Multiplying Decimal Numbers

To multiply decimal numbers:

1. Multiply.
2. Count the digits to the **RIGHT** of the decimal points in all the factors.
3. Place the decimal point in the product that many places from the right-hand side.

Example:

$$\begin{array}{r} 0.15 \\ \times 0.9 \\ \hline 0.135 \end{array}$$

} 3 places

Practice:

Simplify 1–4.

1. $0.5 \times 0.14 =$ _____

2. $1.6 \times 0.9 =$ _____

3. $0.24 \times 0.13 =$ _____

4. $0.3 \times 0.8 \times 0.2 =$ _____

5. What is the product of 2.3 and 0.024? _____

- **Using Zero as a Place Holder**

When adding and subtracting decimal numbers, we line up the decimals points.

- Fill each empty decimal place with a zero.

Examples:

$$0.5 - 0.32 \longrightarrow \begin{array}{r} 0.5 \\ - 0.32 \\ \hline \end{array} \longrightarrow \begin{array}{r} 0.50 \\ - 0.32 \\ \hline \end{array}$$

$$3 + 0.4 \longrightarrow \begin{array}{r} 3. \\ + 0.4 \\ \hline \end{array} \longrightarrow \begin{array}{r} 3.0 \\ + 0.4 \\ \hline \end{array}$$

Practice:

Simplify 1–6.

1. $2 - 0.53 =$ _____

2. $1.7 - 0.49 =$ _____

3. $8.6 - 2.92 =$ _____

4. $6 - (0.5 + 0.8) =$ _____

5. $7 - (3.4 + 0.91) =$ _____

6. $4 + (2.1 - 0.73) =$ _____