

KEY CONCEPT OVERVIEW

In Lessons 1 through 6, students explore fraction equivalence. They show how fractions can be expressed as the sum of smaller fractions by using different models.

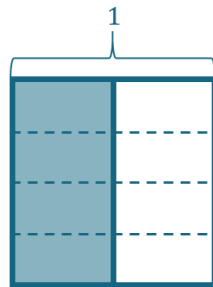
You can expect to see homework that asks your child to do the following:

- **Decompose** fractions as a sum of **unit fractions** (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$), and write the **equivalent multiplication sentence** (e.g., $\frac{3}{4} = 3 \times \frac{1}{4}$).
- Draw and label **tape diagrams** to show decomposition of a fraction and to prove that two fractions are equivalent.
- Draw **area models** to show decomposition and to find equivalent fractions.

SAMPLE PROBLEM (From Lesson 5)

Draw an area model to show the decomposition represented by the **number sentence** below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

$$\frac{1}{2} = \frac{4}{8}$$



$$\frac{1}{2} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{4}{8}$$

$$\frac{1}{2} = 4 \times \frac{1}{8} = \frac{4}{8}$$

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Explore fractions as you make sandwiches. Give a sandwich to your child. Ask her how many whole sandwiches she has. Cut your child's sandwich in half. Ask her again how many whole sandwiches she has. Point to one half. Ask her to say the fraction that the piece represents. Point to the other half. Ask her again to say the fraction. Finally, ask her to say a number sentence that represents the decomposition ($1 = \frac{1}{2} + \frac{1}{2}$) or ($1 = 2 \times \frac{1}{2}$). Continue with this activity by decomposing the halves into smaller units (e.g., fourths, eighths).

HOW YOU CAN HELP AT HOME
(continued)

- Use measuring cups to show equivalence. Measure $\frac{2}{3}$ cup of water. Give your child the water and a $\frac{1}{3}$ -cup measuring cup. Ask him how many times he will be able to fill the $\frac{1}{3}$ -cup measuring cup with the water. Prompt him to prove it and then to say the decomposition in a number sentence, first using addition and then using multiplication (e.g., $\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$ and $\frac{2}{3} = 2 \times \frac{1}{3}$).

TERMS

Decompose/Decomposition: To break apart into smaller parts. There are multiple ways to show decomposition. For example, write $1 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$ or $1 = \frac{2}{5} + \frac{2}{5} + \frac{1}{5}$, or partition a tape diagram into smaller parts to show equivalence, such as partitioning 1 whole into 5 fifths.

Equivalent: Names the same amount. For example, $2 \times \frac{1}{3} = \frac{2}{3}$ is equivalent to $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$.

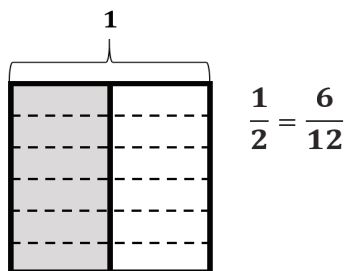
Multiplication sentence: A multiplication equation in which both expressions are numerical and can be evaluated to a single number. For example, $6 \times \frac{1}{8} = \frac{6}{8}$ is a multiplication sentence. Multiplication sentences do not have unknowns.

Number sentence: An equation for which both expressions are numerical and can be evaluated to a single number. For example, $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$ and $\frac{1}{10} + \frac{2}{10} + \frac{3}{10} = \frac{6}{10}$ are number sentences. Number sentences do not have unknowns.

Unit fraction: A fraction with a numerator of 1. For example, $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ are all unit fractions.

MODELS

Area Model



Tape Diagram

