

## KEY CONCEPT OVERVIEW

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In Lessons 7 through 11, students explore **equivalent** fractions by using multiplication and division. To explain how fractions can be equivalent, students use **area models** and the **number line**.

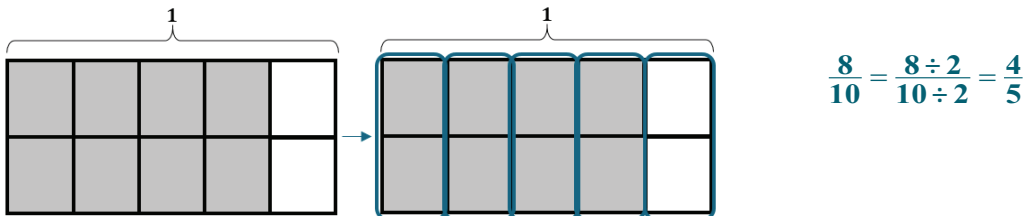
You can expect to see homework that asks your child to do the following:

- Express equivalent fractions in a **number sentence** by using multiplication (e.g.,  $\frac{1}{5} = \frac{1 \times 2}{5 \times 2} = \frac{2}{10}$ ).
- Express equivalent fractions in a number sentence by using division (e.g.,  $\frac{2}{10} = \frac{2 \div 2}{10 \div 2} = \frac{1}{5}$ ).
- Draw area models to represent number sentences and to prove fractions are equivalent.
- Draw number lines to show equivalence.

## SAMPLE PROBLEM (From Lesson 9)

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**Compose** the shaded fraction into larger **fractional units**. Express the equivalent fractions in a number sentence by using division.



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](http://GreatMinds.org).

## HOW YOU CAN HELP AT HOME

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- With your child, take turns drawing area models, such as the one above, and shading a fraction of each. After you have drawn and shaded each area model, work together to determine whether you can compose the fraction into larger units.
- Challenge your child to think about common **factors**. Write a fraction such as  $\frac{4}{10}$ . Ask your child to name the factors of 4 (1, 2, 4) and the factors of 10 (1, 2, 5, 10), and then ask him to name the common factors (1 and 2). Continue with other fractions.

**TERMS**

**Compose:** To change a smaller unit for an equivalent larger unit (e.g., convert fourths to halves:  $\frac{2}{4} = \frac{1}{2}$ ).

**Decompose:** To break apart into smaller parts (e.g., partition a tape diagram equally into smaller parts to show equivalence).

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

**Factor:** A number that is multiplied by another number. For example, in  $3 \times 4 = 12$ , the numbers 3 and 4 are factors; therefore, 3 and 4 are factors of 12.

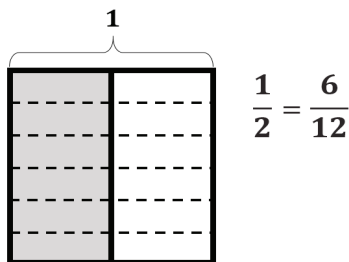
**Fractional units:** The result of dividing a unit into parts. For example, halves, thirds, and fourths are fractional units.

**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.

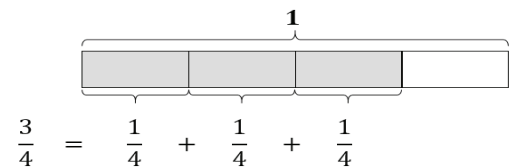
**Unit fraction:** A fraction with a numerator of 1. For example,  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$  are all unit fractions.

**MODELS**

**Area Model**



**Tape Diagram**



**Number Line**

