

## KEY CONCEPT OVERVIEW

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In Lessons 1 and 2, students begin to understand **equivalent fractions** by drawing them visually. They also add fractions by using the **number line**.

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

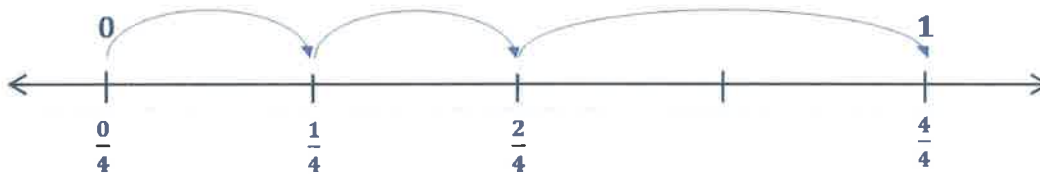
- Write equivalent fractions by drawing and shading them on a square.
- Show **expressions** on a number line. (See Sample Problem below.)

## SAMPLE PROBLEM (From Lesson 2)

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Show the expression on a number line. Solve.

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



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

To LEARN MORE by viewing a video about showing fractions on number lines, visit [eurmath.link/fraction-numline](http://eurmath.link/fraction-numline).

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

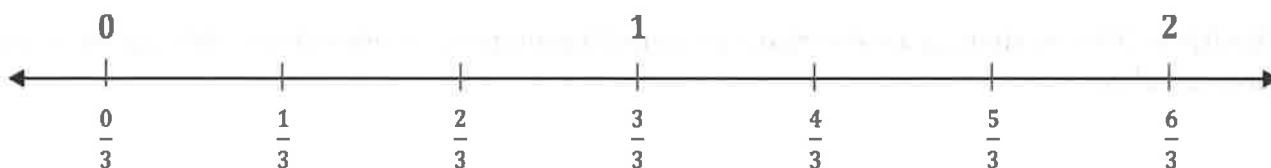
**HOW YOU CAN HELP AT HOME**

- Discuss the term *equivalent fraction* with your child. Ask him to explain what it means. You can give the example that mowing  $\frac{1}{2}$  of the yard is the same as mowing  $\frac{2}{4}$ ,  $\frac{3}{6}$ ,  $\frac{4}{8}$ , or  $\frac{5}{10}$  of the same yard.
- Find opportunities in your daily activities to talk about fractions and equivalent fractions. For example, you can review fractions and name equivalent fractions when cutting foods into equal units (e.g., an apple, a watermelon, a pie, a pan of brownies or lasagna, a sandwich, or a pizza). If you walk half of a block and your child walks a quarter of a block, who walked the shorter distance? Who walked the longer distance?

**TERMS**

**Equivalent fraction:** Fractions that have the same value (e.g.,  $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$ ).

**Expression:** Any combination of sums, differences, products, or divisions of numbers that evaluates to a number. Expressions do not have an equal sign (e.g.,  $600 + 3 + 0.07$ ).

**MODELS****Number Line**

## KEY CONCEPT OVERVIEW

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In Lessons 3 through 7, students learn to add and subtract fractions with unlike **denominators**. Students also apply their fraction skills in real-world contexts.

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

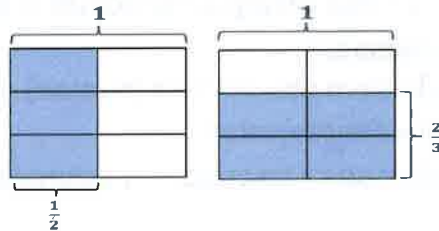
- Add and subtract fractions with unlike denominators by drawing **rectangular fraction models** and by finding the **common denominator**.
- Solve fraction word problems.

## SAMPLE PROBLEM (From Lesson 4)

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For the following problem, draw a picture using the rectangular fraction model and write the answer. If possible, write your answer as a **mixed number**.

$$\begin{aligned} \frac{1}{2} + \frac{2}{3} &= \frac{3}{6} + \frac{4}{6} \\ &= \frac{7}{6} \\ &= \frac{6}{6} + \frac{1}{6} \\ &= 1\frac{1}{6} \end{aligned}$$



To LEARN MORE by viewing a video about using rectangular fraction models to add fractions, visit [eurmath.link/rectangle-fraction-models](http://eurmath.link/rectangle-fraction-models).

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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- Play the Find the Smallest Multiple dice game with your child.
  1. Roll a die.
  2. Have your child roll a die.
  3. Ask, “What’s the smallest common multiple of those numbers?”

For example, you roll the number 3. Your child rolls the number 4. You ask, “What’s the smallest multiple of 3 and 4?” He says, “12.”

**HOW YOU CAN HELP AT HOME**  
(CONTINUED)

- Play the Find the Equivalent Fraction card game with your child.
  1. Take out the jacks, queens, kings, aces, and jokers.
  2. Put the stack of remaining cards facedown.
  3. Flip a card, and have your child flip a card.
  4. Both you and your child arrange the cards as a fraction, using the smaller number as the **numerator** and the larger number as the denominator.
  5. Ask, “What’s an equivalent fraction to this fraction?”

For example, you flip the number 10, and your child flips the number 4. Those numbers represent the fraction  $\frac{4}{10}$ . You ask, “What’s an equivalent fraction to  $\frac{4}{10}$ ?” Some possible answers are  $\frac{2}{5}, \frac{8}{20}, \frac{12}{30}$ .

**TERMS**

**Common denominator:** The common fractional unit. For example, the common denominator for  $\frac{1}{2}$  and  $\frac{1}{6}$  is sixths, which is denoted by a 6 in the denominator.

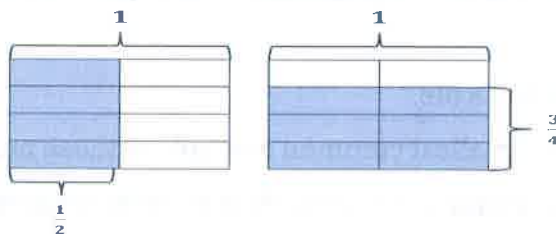
**Denominator:** Denotes the fractional unit (i.e., the bottom number in a fraction). For example, *fifths* in three-fifths, as represented by the 5 in  $\frac{3}{5}$ , is the denominator.

**Mixed number:** A number made up of a whole number and a fraction. For example,  $13\frac{42}{100}$  is a mixed number.

**Numerator:** Denotes the count of fractional units (i.e., the top number in a fraction). For example, *three* in three-fifths, or 3 in  $\frac{3}{5}$ , is the numerator.

**MODELS**

**Rectangular Fraction Model**



## KEY CONCEPT OVERVIEW

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In Lessons 8 through 12, students learn to add and subtract fractions and mixed numbers with unlike denominators. They also apply their skills in real-world contexts.

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

- Add and subtract fractions and mixed numbers with unlike denominators by using the number line strategy.
- Solve fraction and mixed number word problems.

## SAMPLE PROBLEM (From Lesson 12)

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Subtract.

$$3\frac{3}{5} - 2\frac{1}{2}$$

*Method 1: Rename fractions as tenths, and then subtract.*

*Method 2: Subtract whole numbers, and then subtract fractions.*

*Method 3: Decompose  $3\frac{3}{5}$  into two parts using a number bond. Subtract  $2\frac{1}{2}$  from 3 to get  $\frac{1}{2}$ , and then add the fractions.*

**Method 1:**

$$\begin{aligned} 3\frac{3}{5} - 2\frac{1}{2} \\ = 3\frac{6}{10} - 2\frac{5}{10} \\ = 1\frac{1}{10} \end{aligned}$$

**Method 2:**

$$\begin{aligned} 3\frac{3}{5} - 2\frac{1}{2} \\ = 1\frac{3}{5} - \frac{1}{2} \\ = 1\frac{6}{10} - \frac{5}{10} \\ = 1\frac{1}{10} \end{aligned}$$

**Method 3:**

$$\begin{aligned} 3\frac{3}{5} - 2\frac{1}{2} \\ \begin{array}{l} \diagup \quad \diagdown \\ 3 \quad \frac{3}{5} \end{array} \\ = \frac{1}{2} + \frac{3}{5} \\ = \frac{5}{10} + \frac{6}{10} \\ = \frac{11}{10} \\ = 1\frac{1}{10} \end{aligned}$$

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**

- Play the Write the Whole or Mixed Number dice game with your child.
  1. Roll a die.
  2. Have your child roll a die.
  3. Both you and your child arrange the dice as a fraction, using the larger number rolled as the numerator and the smaller number rolled as the denominator.
  4. Write the fraction, and say, “Write the mixed number and then **simplify** it.”

For example, you roll the number 6. Your child rolls the number 4. Those numbers represent the fraction  $\frac{6}{4}$ . You write  $\frac{6}{4}$  and say, “Write  $\frac{6}{4}$  as a mixed number and then simplify it.” She writes  $1\frac{2}{4}=1\frac{1}{2}$ .

- Play the Add or Subtract Fractions card game with your child.
  1. Take out the jacks, queens, kings, aces, and jokers.
  2. Put the stack of remaining cards facedown.
  3. Flip two cards.
  4. Have your child flip two cards.
  5. Both you and your child arrange each pair of cards as a fraction, using the smaller number as the numerator and the larger number as the denominator.
  6. Using those two fractions, write an addition or subtraction fraction sentence, and ask your child to solve it. When writing a subtraction fraction sentence, the larger fraction should be written first.

For example, you flip two cards with the numbers 4 and 5. They represent the fraction  $\frac{4}{5}$ . Your child flips two cards with the numbers 3 and 2. They represent the fraction  $\frac{2}{3}$ . You write  $\frac{4}{5} + \frac{2}{3}$  or  $\frac{4}{5} - \frac{2}{3}$  and ask your child to solve it. He writes  $\frac{4}{5} + \frac{2}{3} = 1\frac{7}{15}$  or  $\frac{4}{5} - \frac{2}{3} = \frac{2}{15}$ .

**TERMS**

**Simplify:** Write a fraction or expression in simplest form. For example, the simplest form of  $\frac{3}{6}$  is  $\frac{1}{2}$ .

## KEY CONCEPT OVERVIEW

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In Lessons 13 through 16, students learn to estimate and calculate **sums** and **differences** with fractions. They also apply their skills with fractions in real-world contexts.

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

- Estimate the sums and differences of fraction problems.
- Add and subtract fractions mentally.
- Solve fraction word problems.

## SAMPLE PROBLEM (From Lesson 14)

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Rearrange the terms so you can add or subtract mentally. Then solve.

$$\begin{aligned} & \frac{2}{3} + \frac{1}{5} + \frac{1}{3} + 1\frac{4}{5} \\ &= \left( \frac{2}{3} + \frac{1}{3} \right) + \left( \frac{1}{5} + 1\frac{4}{5} \right) \\ &= 1 + 2 \\ &= 3 \end{aligned}$$

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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- Practice the Call and Response activity with your child. You say a fraction less than 1. Your child says the fraction with the same denominator that makes 1 when added to your fraction. For example, you say, “ $\frac{1}{3}$ .” He says, “ $\frac{2}{3}$ .”
- Play the Comparing Fractions dice game with your child.
  1. Roll two dice.
  2. Have your child roll two dice.
  3. Arrange each pair of dice as a fraction, using the smaller number rolled as the numerator and the larger number rolled as the denominator.
  4. Write the two fractions and ask, “Which fraction is closer to 1 whole?”

For example, you roll the numbers 2 and 3. They represent the fraction  $\frac{2}{3}$ . Your child rolls the numbers 6 and 1. They represent the fraction  $\frac{1}{6}$ . You write  $\frac{2}{3}$  and  $\frac{1}{6}$ , and ask, “Which fraction is closer to 1 whole?” He says, “ $\frac{2}{3}$ .”

**TERMS**

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**Difference:** The answer to a subtraction problem. For example, in  $0.5 - 0.2 = 0.3$ , the number 0.3 is the difference.

**Sum:** The result of adding two or more numbers. For example, in  $0.3 + 0.2 = 0.5$ , the number 0.5 is the sum.