

KEY CONCEPT OVERVIEW

In Lesson 1, students work with measurement and fractions. They measure the length of pencils to the nearest half, quarter, and eighth of an inch, and then they use the data to create a **line plot**.

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

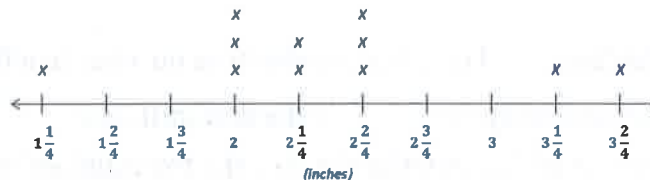
- Create a line plot by using a given set of data with $\frac{1}{8}$ -inch intervals.
- Answer questions based on the line plot (as shown in the Sample Problem below).

SAMPLE PROBLEM (From Lesson 1)

A group of students measured the height of bean sprouts to the nearest quarter inch. Draw a line plot to represent their data:

$$2\frac{1}{2}, 1\frac{1}{4}, 2, 3\frac{1}{2}, 2\frac{1}{4}, 2, 2\frac{1}{2}, 2, 2\frac{1}{2}, 2\frac{1}{4}, 3\frac{1}{4}$$

Bean Sprout Height



- Which bean sprout is the tallest?
The $3\frac{1}{2}$ -inch bean sprout is the tallest.
- Which bean sprout is the shortest?
The $1\frac{1}{4}$ -inch bean sprout is the shortest.
- Which measurement(s) occur(s) most frequently?
The measurements that occur most frequently are 2 inches and $2\frac{1}{2}$ inches.
- What is the total height of all the bean sprouts?
The total height of all the bean sprouts is 26 inches.

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

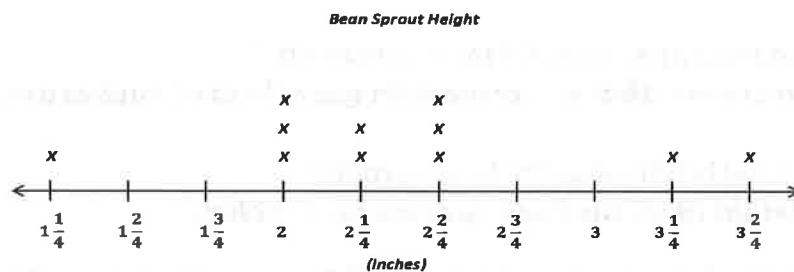
- When preparing food or cooking in the kitchen, find opportunities for your child to use an inch ruler to measure the length of vegetables (e.g., carrots, celery, asparagus) to the nearest half, quarter, or eighth of an inch.
- Play the Compare Fractions card game with your child.
 1. Take out the jacks, queens, kings, and jokers. Let aces have a value of one.
 2. Put the stack of remaining cards facedown.
 3. You flip two cards to represent a fraction.
 4. Your child flips two cards to represent another fraction.
 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. You write the two fractions, and ask your child to compare them.

For example, you flip the numbers 1 and 3. They represent the fraction $\frac{1}{3}$. Your child flips the numbers 5 and 2. They represent the fraction $\frac{2}{5}$. You write $\frac{1}{3} > \frac{2}{5}$. He writes $\frac{1}{3} < \frac{2}{5}$.

TERMS

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.

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

MODELS**Line Plot**

KEY CONCEPT OVERVIEW

In Lessons 2 through 5, students learn how fractions can be interpreted as division **expressions**.

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

- Draw pictures and use **tape diagrams** to model fractions as division and then solve.
- Express a fraction as division in different forms. (See Sample Problem below.)
- Solve word problems involving the division of whole numbers.

SAMPLE PROBLEM (From Lesson 3)

Fill in the chart.

Division Expression	Unit Form	Improper Fraction	Mixed Number	Standard Algorithm (Write your answer in whole numbers and fractional units. Then check.)
$3 \div 2$	6 halves $\div 2$ = 3 halves	$\frac{3}{2}$	$1\frac{1}{2}$	$\begin{array}{r} 1\frac{1}{2} \\ 2 \overline{) 3} \\ \underline{-2} \\ 1 \end{array}$ <p>Check</p> $2 \times 1\frac{1}{2} = 1\frac{1}{2} + 1\frac{1}{2}$ $= 2 + \frac{2}{2}$ $= 3$

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HOW YOU CAN HELP AT HOME

- When serving pancakes or waffles, ask your child to explain how he could split them evenly among those eating breakfast. For example,
 - 2 pancakes are ready, and there are 4 family members. How many pancakes will each person get? (Each person will get $\frac{2}{4}$, or $\frac{1}{2}$, of a pancake.)
 - Now 5 pancakes are ready. How will you split those pancakes equally among four family members? (Each person will get $1\frac{1}{4}$ pancakes.)

TERMS

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., $600 + 3 + 0.07$).

Improper fraction: The numerator of a fraction is greater than the denominator of the fraction (e.g., $\frac{5}{2}$).

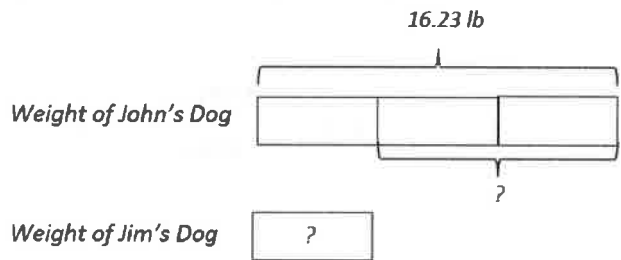
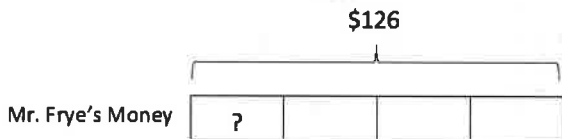
Mixed number: A number made up of a whole number and a fraction (e.g., $13\frac{42}{100}$).

Standard algorithm: A standard step-by-step procedure to solve a particular type of problem. For example, the process of long division is a standard algorithm.

Unit form: A number expressed in terms of its units. For example, the number 0.863 written in unit form is 8 tenths 6 hundredths 3 thousandths.

MODELS

Tape Diagram



KEY CONCEPT OVERVIEW

In Lessons 10 through 12, students learn to write and evaluate numerical expressions.

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

- Write expressions that match given diagrams, and then evaluate them.
- Compare number sentences by using less than (<), greater than (>), or equal to (=) without calculating.
- Create and solve story problems with fractions by using a given tape diagram or expression.
- Solve word problems involving addition, subtraction, and multiplication.

SAMPLE PROBLEM (From Lesson 10)

Write an expression to match, and then evaluate.

3 times as much as the sum of $\frac{2}{5}$ and $\frac{1}{2}$.

$$\begin{aligned} & 3 \times \left(\frac{2}{5} + \frac{1}{2} \right) \\ &= 3 \times \left(\frac{4}{10} + \frac{5}{10} \right) \\ &= 3 \times \frac{9}{10} \\ &= \frac{27}{10} \\ &= 2 \frac{7}{10} \end{aligned}$$

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

- Review fraction addition, subtraction, and multiplication with your child. Ask your child to pick one of each of these types of fraction problems from his previous work and explain how he solved each problem.
- Ask your child to write out a descriptive sentence for an expression containing fractions, such as $3 \times \left(\frac{3}{4} + \frac{4}{6} \right)$.
(Answer: Three times the sum of $\frac{3}{4}$ and $\frac{4}{6}$.)

KEY CONCEPT OVERVIEW

In Lessons 25 through 31, students learn to divide fractions and decimals. They use tape diagrams and number lines to help them solve problems. They also apply their skills in real-world contexts.

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

- Solve division problems involving fractions and decimals by drawing tape diagrams and number lines.
- Estimate the value of a decimal divided by a decimal, and then solve.
- Create and solve division word problems that are modeled by a tape diagram or an expression.

SAMPLE PROBLEM (From Lesson 30)

Rewrite the division expression as a fraction and then divide.

$$1.6 \div 0.04$$

$$= \frac{1.6}{0.04}$$

$$= \frac{1.6}{0.04} \times \frac{100}{100}$$

$$= \frac{160}{4}$$

$$= 40$$

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

- Practice skip-counting by fractions and decimals with your child. For example,

- Count by 2 tenths from 2 tenths to 20 tenths.

$$\frac{2}{10}, \frac{4}{10}, \frac{6}{10}, \frac{8}{10}, \frac{10}{10}, \frac{12}{10}, \frac{14}{10}, \frac{16}{10}, \frac{18}{10}, \frac{20}{10}$$

0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6, 1.8, 2.

- Count by 5 tenths from 5 tenths to 50 tenths.

$$\frac{5}{10}, \frac{10}{10}, \frac{15}{10}, \frac{20}{10}, \frac{25}{10}, \frac{30}{10}, \frac{35}{10}, \frac{40}{10}, \frac{45}{10}, \frac{50}{10}$$

0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5.

- Play the Fraction Division card game with your child to practice dividing a whole number by a fraction and dividing a fraction by a whole number.

1. Take out the jacks, queens, kings, aces, and jokers.
2. Put the stack of remaining cards facedown.
3. Flip a card to represent a whole number.
4. Have your child flip a card to represent a fraction. The number flipped represents the denominator; the numerator will be 1.
5. Write the division expression as the whole number divided by the fraction, and ask your child to solve.
6. Play again, and let your card represent a fraction and your child's card represent a whole number.

For example, you flip the number 4. It represents the whole number 4. Your child flips the number 9. It represents the fraction $\frac{1}{9}$. You write the division expression $4 \div \frac{1}{9}$. He writes $4 \div \frac{1}{9} = 36$. For the second round, the division expression is $\frac{1}{4} \div 9$. The answer is $\frac{1}{36}$.

KEY CONCEPT OVERVIEW

In Lessons 32 and 33, students interpret and evaluate numerical expressions that involve fractions. They also apply their skills in real-world contexts.

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

- Write and evaluate numerical expressions.
- Solve word problems involving the multiplication and division of fractions and decimals.
- Create word problems that are modeled by a tape diagram or a numerical expression.

SAMPLE PROBLEM (From Lesson 32)

Write an equivalent expression in numerical form.

Half as much as the difference of $2\frac{5}{6}$ and $\frac{1}{3}$.

$$\left(2\frac{5}{6} - \frac{1}{3}\right) \div 2$$

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

- Review your child’s homework with him. Choose a couple of different problems. Ask him to explain his thinking on those problems and the steps he used to work through them.

- Play the Multiply Decimals by 10, 100, and 1,000 dice game to review the multiplication of decimals with your child. Use one die to represent tenths, two dice to represent hundredths, and three dice to represent thousandths.
 1. Your child rolls the die or dice.
 2. Using the number(s) rolled, you write the multiplication expressions ($\times 10$, $\times 100$, $\times 1,000$) and ask her to evaluate the expressions.

For example, your child rolls the number 5. It represents the decimal number 0.5. You write the multiplication expressions 0.5×10 , 0.5×100 , and $0.5 \times 1,000$. She evaluates them as $0.5 \times 10 = 5$, $0.5 \times 100 = 50$, and $0.5 \times 1,000 = 500$.

Your child rolls the numbers 2 and 3. They represent the decimal number 0.23. The evaluated multiplication sentences will be $0.23 \times 10 = 2.3$, $0.23 \times 100 = 23$, and $0.23 \times 1,000 = 230$.

Your child rolls the numbers 6, 1, and 4. They represent the decimal number 0.614. The evaluated multiplication sentences will be $0.614 \times 10 = 6.14$, $0.614 \times 100 = 61.4$, and $0.614 \times 1,000 = 614$.