EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 1 through 3, students explore tenths. They've already learned to express tenths in **fraction form**. Now they learn how to write the **decimal form** of tenths.

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

- Express numbers in fraction form and decimal form (e.g., $\frac{6}{10} = 0.6$).
- Shade **area models** to express given numbers of ones and tenths.
- Use a centimeter ruler to draw line segments that match given lengths.
- Write **mixed numbers** in decimal form (e.g., $3\frac{1}{10} = 3.1$).
- Represent numbers with **place value disks**, on the **number line**, and in **expanded form**.

SAMPLE PROBLEM *(From Lesson 3)*

Draw disks to represent 3 tens 5 ones 2 tenths using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and in decimal form.

3 tens 5 ones 2 tenths

Fraction expanded form

$$(3\times10)+(5\times1)+\left(2\times\frac{1}{10}\right)=35\frac{2}{10}$$

Decimal expanded form

$$(3\times10)+(5\times1)+(2\times0.1)=35.2$$

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

- On index cards or small pieces of paper, write each of the fractions, in tenths, from $\frac{1}{10}$ to $\frac{10}{10}$ (i.e., $\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \ldots, \frac{10}{10}$). On another set of index cards, write each of the decimal numbers, in tenths, from 0 to 1.0 (i.e., 0.1, 0.2, 0.3, … , 1.0). Create a game using the cards. For example, play a memory game to create matches of equivalent amounts (e.g., $\frac{1}{10}$ and 0.1). The person with the most matches wins. For a challenge, change the objective to creating matches of pairs that add up to one (e.g., $\frac{1}{10}$ and $\frac{9}{10}$ or 0.2 and $\frac{8}{10}$).

TERMS

Decimal form: A number written in the form of a decimal. For example, 15 hundredths in decimal form is 0.15.

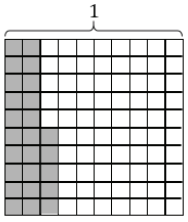
Expanded form: Representing a number as an addition expression or number sentence to show the value of each digit. For example, in fraction expanded form, $13\frac{42}{100} = (1\times10)+(3\times1)+\left(4\times\frac{1}{10}\right)+\left(2\times\frac{1}{100}\right)$, and in decimal expanded form, $13.42 = (1\times10)+(3\times1)+(4\times0.1)+(2\times0.01)$.

Fraction form: A number written in the form of a fraction. For example, 15 hundredths in fraction form is $\frac{15}{100}$.

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

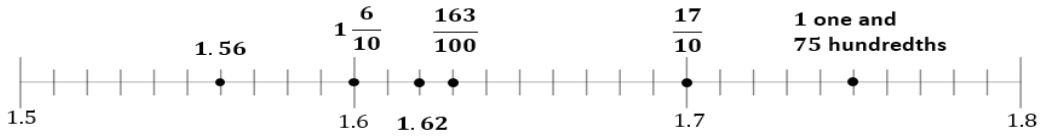
MODELS

Area Model



Place Value Disks

Number Line



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 4 through 8, students explore hundredths. They decompose tenths into hundredths and represent numbers in **decimal**, **fraction**, **expanded**, and **unit form**.

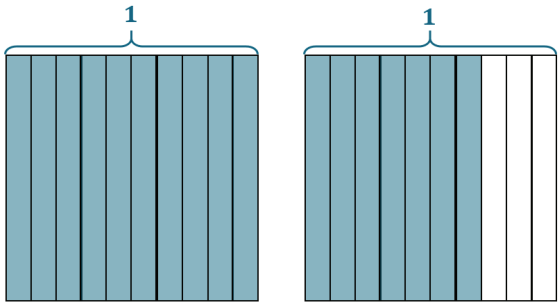
You can expect to see homework that asks your child to do the following:

- Express hundredths as the sum of tenths and hundredths and in decimal form (e.g., $\frac{56}{100} = \frac{5}{10} + \frac{6}{100} = 0.56$).
- Find equivalent fractions using multiplication and division (e.g., $\frac{3}{10} = \frac{3 \times 10}{10 \times 10} = \frac{30}{100}$).
- Shade area models to represent a mixed number and locate the number on a number line.
- Identify the value of the digits within a number and express numbers in various forms.
- Rename **decimal numbers** to represent them in other ways (e.g., $2.1 = 2\frac{1}{10} = \frac{21}{10} = \frac{210}{100}$).

SAMPLE PROBLEM *(From Lesson 8)*

Use the area model to represent $\frac{170}{100}$. Complete the number sentence.

$\frac{170}{100}$ = **17** tenths = **1** one **7** tenths = **1.7**



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

- Prompt your child to look around the kitchen for five items such as boxes, cans, and bottles that have decimal numbers printed on them. Ask your child to say a decimal number and to identify the value of each digit. For example, if your child discovers a can with 21.35 written on it, she would say "twenty-one and thirty-five hundredths" and then state that the 2 has a value of 2 tens, the 1 has a value of 1 one, the 3 has a value of 3 tenths, and the 5 has a value of 5 hundredths.

TERMS

Decimal form: A number written in the form of a decimal. For example, 15 hundredths in decimal form is 0.15.

Decimal number: A number written using place value units that are powers of 10, such as hundreds, tens, ones, tenths, and hundredths. For example, 2.1 and 5.16 are decimal numbers, as are 245 and 31.

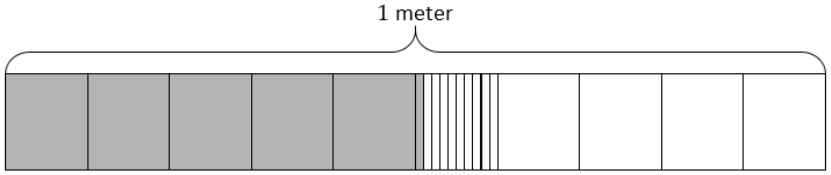
Expanded form: Representing a number as an addition expression or number sentence to show the value of each digit. For example, in fraction expanded form, $13\frac{42}{100} = (1\times 10) + (3\times 1) + \left(4\times\frac{1}{10}\right) + \left(2\times\frac{1}{100}\right)$, and in decimal expanded form, $13.42 = (1\times 10) + (3\times 1) + (4\times 0.1) + (2\times 0.01)$.

Fraction form: A number written in the form of a fraction. For example, 15 hundredths in fraction form is $\frac{15}{100}$.

Unit form: A number expressed in terms of its units. For example, $\frac{15}{100}$ written in unit form is 1 tenth 5 hundredths or 15 hundredths.

MODELS

Tape Diagram/Meter Stick



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 9 through 11, students compare **decimal numbers** by focusing on the value of the digits within the numbers.

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

- Order and compare metric measurements of mass, volume, and length.
- Use the symbols <, >, and = to show the comparison of numbers written in **unit form**, **fraction form**, or **decimal form**.
- Shade area models to represent decimal numbers.
- Plot and label points on a **number line** to represent decimal numbers written in fraction form and decimal form.
- Order numbers from least to greatest or from greatest to least in decimal form.

SAMPLE PROBLEM *(From Lesson 11)*

Plot the following points on the number line using decimal form.

4.57, 4 ones and 77 hundredths, $4\frac{61}{100}, \frac{463}{100}, \frac{47}{10}, 4.51$

4.57 4.77 4.61 4.63 4.7 4.51

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

- Plot six points on a number line using fraction form and decimal form, as shown on the number line in the Models section. Incorrectly plot at least two of the numbers. For example, start the number line at 7.1 and end it at 7.4. Make tick marks to represent each hundredth. Plot the points 7.14, 7.21, $7\frac{33}{100}$, $7\frac{2}{10}$, 7.39, and $\frac{728}{100}$. Plot 7.14 incorrectly at 7.24 and 7.39 incorrectly at 7.3. Have your child identify and re-plot the incorrectly plotted points.
- Access a website that can be used to determine the distance from one place to another. Help your child find the distance from your home to five different points of interest near you, such as a gas station, restaurant, library, post office, and school. Have her record each distance, read it in decimal form, and then order the distances from least to greatest. If you do not have Internet access, consider making up distances.

TERMS

Decimal form: A number written in the form of a decimal. For example, 15 hundredths in decimal form is 0.15.

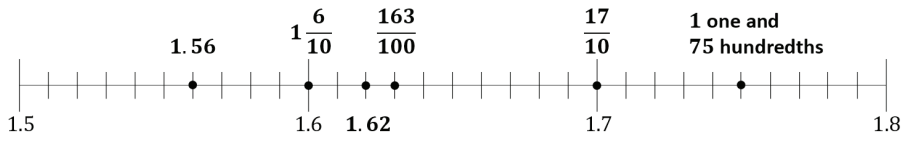
Decimal number: A number written using place value units that are powers of 10, such as hundreds, tens, ones, tenths, and hundredths. For example, 2.1 and 5.16 are decimal numbers, as are 245 and 31.

Fraction form: A number written in the form of a fraction. For example, 15 hundredths in fraction form is $\frac{15}{100}$.

Unit form: A number expressed in terms of its units. For example, $\frac{15}{100}$ written in unit form is 1 tenth 5 hundredths or 15 hundredths.

MODEL

Number Line



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 12 through 14, students add decimals by converting **decimal numbers** to **fraction form** before adding and then converting the sum back to a decimal number. (See Sample Problem.) It is important to note that, in these lessons, students do NOT learn to add decimals by lining up the decimal points.

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

- Express tenths and hundredths as hundredths (e.g., 3 tenths + 4 hundredths = 34 hundredths).
- Add tenths and hundredths by converting tenths to hundredths before finding the sum.
- Add **mixed numbers** with units of ones, tenths, and hundredths.
- Solve word problems requiring the addition of numbers written in **decimal form**, converting to fraction form before solving.

SAMPLE PROBLEM *(From Lesson 13)*

Solve by rewriting the expression in fraction form. After solving, rewrite the complete number sentence in decimal form.

5.9 + 4.94

$$5.9 + 4.94 = 5\frac{9}{10} + 4\frac{94}{100} = 5\frac{90}{100} + 4\frac{94}{100} = 9\frac{184}{100} = 10\frac{84}{100}$$

$1\ \frac{84}{100}$

5.9 + 4.94 = 10.84

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

- Although it may be tempting to show your child how to add numbers in decimal form by lining up the decimals, it will be more helpful to support the current lesson of adding decimals by converting to fractions. The objective is for students to see that writing numbers in decimal form is just another way of expressing whole numbers, tenths, and hundredths that were written in fraction form (e.g., $\frac{86}{100} = 0.86$). In other words, the decimal and fraction forms share the same point on the number line. Students will be taught to add numbers in decimal form by lining up the decimals in Grade 5 of *Eureka Math*.
- Practice converting tenths to hundredths. Write a decimal number that has digits in both the ones place and the tenths place, such as 4.7. Prompt your child to write the number in fraction form ($4\frac{7}{10}$). Next, prompt him to write the number in fraction form as hundredths ($4\frac{70}{100}$).

  Watch for common errors such as saying that $4\frac{7}{10}$ is equivalent to $4\frac{7}{100}$ instead of $4\frac{70}{100}$.

TERMS

Addend: A number that is added to another number. For example, in 3 + 2 = 5, the numbers 3 and 2 are the addends.

Decimal form: A number written in the form of a decimal. For example, 23 hundredths in decimal form is 0.23.

Decimal number: A number written using place value units that are powers of 10, such as hundreds, tens, ones, tenths, and hundredths. For example, 2.1 and 5.16 are decimal numbers, as are 245 and 31.

Fraction form: A number written in the form of a fraction. For example, 23 hundredths in fraction form is $\frac{23}{100}$.

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

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 15 and 16, students express the value of pennies, dimes, and quarters in **decimal form** and as fractional parts of a dollar. Students learn to write money amounts by using a decimal point and a dollar sign, and they determine money totals by expressing dollars and cents in **unit form**. (See Sample Problem.) It is important to note that, in these lessons, students do NOT learn to add money amounts by lining up the dollar signs and decimal points.

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

- Express the value of given numbers of pennies, dimes, and quarters in decimal form and in **fraction form**.
- Determine the total amount of money by using unit form (dollars and cents) and then express that total in fraction form and in decimal form.
- Use the **RDW process** to solve word problems involving money by adding like units (i.e., adding dollars to dollars and cents to cents).

SAMPLE PROBLEM *(From Lesson 15)*

Solve. Express the answer in decimal form.

3 dollars 4 dimes + 2 dollars 1 quarter 3 dimes

3 dollars 40 cents + 2 dollars 55 cents = 5 dollars 95 cents = $5.95

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

- Gather some quarters, dimes, and pennies. Ask your child to determine the value of different combinations of coins. Ask her to express the value as a decimal number and as a fraction of a dollar. Extend the activity by using dollar bills as well. (NOTE: Nickels are not used because they represent $\frac{1}{20}$ of a dollar. Twentieths are beyond the fourth-grade standard.)
- Ask your child to solve the following word problem by using a tape diagram and the RDW process: Sadie's lunch cost 5 dollars 27 cents, and William's lunch cost 6 dollars 14 cents. How much more did William's lunch cost than Sadie's? (87 cents) Keep in mind that, when computing with money, students use unit form. In this case, it is necessary for your child to rename 6 dollars 14 cents as 5 dollars 114 cents before he can subtract the 5 dollars 27 cents. Alternatively, he can rename each amount as cents, and then he can subtract by using the algorithm.

TERMS

Decimal form: A number written in the form of a decimal. For example, 7 hundredths in decimal form is 0.07.

Fraction form: A number written in the form of a fraction. For example, 7 hundredths in fraction form is $\frac{7}{100}$.

RDW process: A three-step process used in solving word problems that requires students to 1) read the problem for understanding, 2) draw a picture or model, and 3) write an equation and a statement of their answer.

Unit form: A number expressed in terms of its units. For example, in unit form, $4.85 is 4 dollars 85 cents.