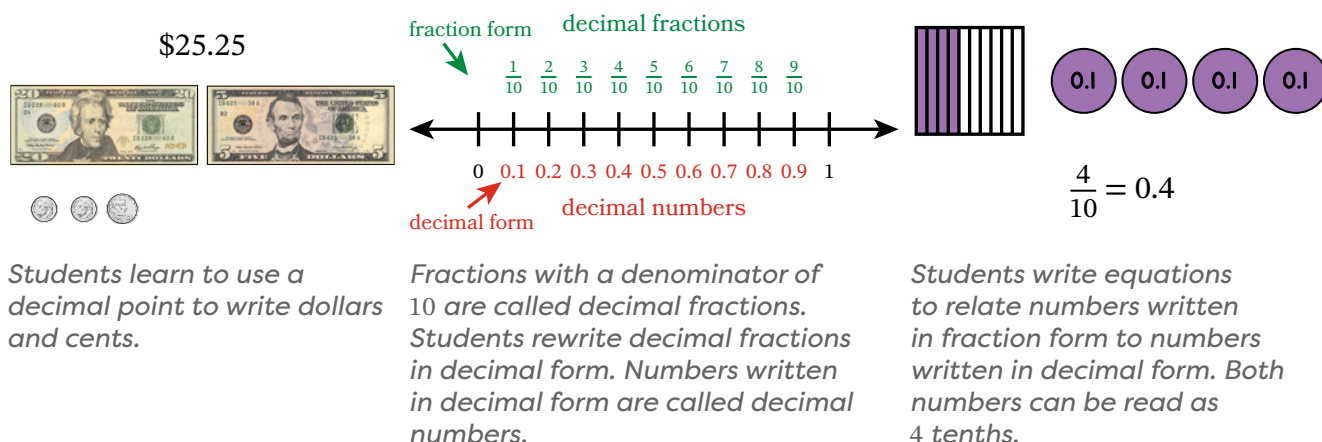# FAMILY MATH
Exploration of Tenths

Dear Family,

Your student is using what they know about tenths as a fractional unit to learn about tenths as a place value unit. As they did with whole-number place value units, your student uses area models, number lines, and place value disks to represent tenths and explore the relationship between tenths and ones. They use the word *and* when reading decimal numbers to show where the whole number units and tenths are separated by a decimal point.

$25.25

Students learn to use a decimal point to write dollars and cents.

fraction form
decimal fractions
$\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
decimal form
decimal numbers

Fractions with a denominator of 10 are called decimal fractions. Students rewrite decimal fractions in decimal form. Numbers written in decimal form are called decimal numbers.

0.1 0.1 0.1 0.1

$\frac{4}{10} = 0.4$

Students write equations to relate numbers written in fraction form to numbers written in decimal form. Both numbers can be read as 4 tenths.

At-Home Activity

Dime Time

Play a game with your student to help them practice reasoning about tenths.

- Gather two pieces of paper, a pencil, a cup, and up to 19 dimes. (If you do not have any dimes then draw circles on a piece of paper. Write 10¢ on each circle to represent each dime, and cut the circles out.)

- Trace the top of the cup on one piece of paper to make a circle. Then place the dimes in the cup.

- Tell your student to dump out the dimes while trying to land some dimes in the circle.

- Count the dimes that landed in the circle. On the second piece of paper, have your student write an equation that shows that the decimal fraction is equal to the decimal number that represents the value of the dimes in the circle. After writing their equation, ask your student to say the equation out loud. For example, if 4 dimes land in the circle, your student would write $\frac{4}{10} = 0.4$ and then say, "4 tenths is equal to zero and 4 tenths." If 15 dimes land in the circle then your student would write 15 tenths $= 1.5$ and then say, "15 tenths is equal to 1 and 5 tenths."

- Repeat the process. Consider drawing different-size circles each time.

- For more practice, have your student also write and say the value of the dimes that did not land in the circle.

FAMILY MATH
Tenths and Hundredths

Dear Family,

Recently, your student was introduced to the place value unit called tenths. Now they explore hundredths as another place value unit. They learn that there is a relationship between tenths and hundredths. They see that hundredths can be composed of both tenths and hundredths. They write mixed numbers in decimal form and represent the numbers by using a number line and place value disks. Using models to understand tenths and hundredths supports your student in later lessons when they compare, add, and subtract decimal numbers.
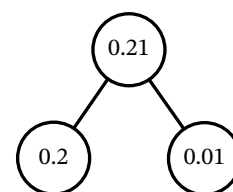
Key Term

hundredths

1

$\frac{14}{100}$
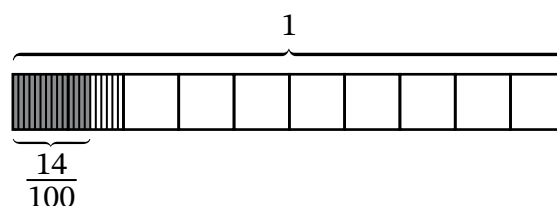
Students use models to decompose 1 tenth into 10 equal parts that each represent 1 hundredth. They write 1 hundredth as $\frac{1}{100}$ or 0.01.
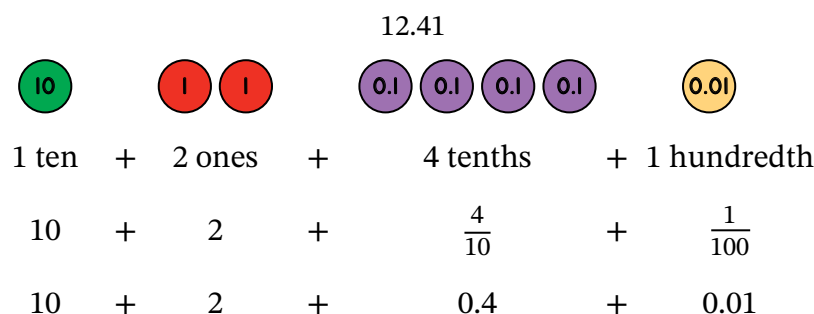
2.0   2.03   2.1

$2\frac{3}{100} = 2.03$
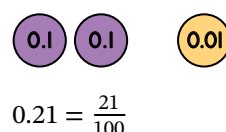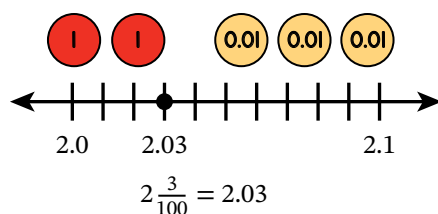
$0.21 = \frac{21}{100}$

21 hundredths = 2 tenths 1 hundredth

0.21

0.2   0.01

Students represent decimal numbers with place value disks, number lines, and number bonds to explore relationships between place value units.

12.41

1 ten	+	2 ones	+	4 tenths	+	1 hundredth
10	+	2	+	$\frac{4}{10}$	+	$\frac{1}{100}$
10	+	2	+	0.4	+	0.01

Students represent decimal numbers in expanded form. Expanded form helps students recognize the value of each digit in a number.

At-Home Activities

Money Play

Help your student play with money to reinforce place value concepts. Use 3 dollars, 9 dimes, and 9 pennies to model decimal numbers to the hundredths. If you do not have real money readily available, draw dollars, dimes, and pennies on paper and cut out each bill and coin. Remind your student that 1 dollar represents 1 one, 1 dime represents 1 tenth, and 1 penny represents 1 hundredth. On a piece of paper write the prices for snacks your student may want to buy such as a glass of milk, a cup of juice, or a piece of fruit. Ask your student to use the money to buy individual items. Then change roles. Ask your student to write the prices for other snacks. Have your student read the prices. Then pay your student for each snack.

Decimal Scavenger Hunt

While out in the community together, challenge your student to look for decimal numbers such as the price for a gallon of gas or the weight of fruit or vegetables at the grocery store. When they find an example of a decimal number, invite them to say the number in context, in standard form, and in expanded form. For example, your student might say, "The gas station sign says the price of 1 gallon of gas is 2 dollars and 89 cents. I can read the decimal number as 2 and 89 hundredths. In expanded form, the number is 2 ones + 8 tenths + 9 hundredths."

FAMILY MATH
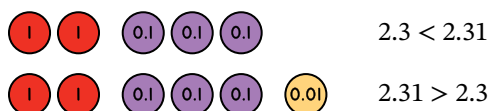## Comparison of Decimal Numbers

Dear Family,

Your student is learning to compare decimal numbers. Familiar models, such as area models and place value disks, help your student understand and reason about the sizes of decimal numbers. These models, as well as writing the decimal numbers in fraction form, are especially useful when comparing numbers with different place value units, such as 0.9 and 0.79. Comparison strategies allow your student to put decimal numbers in order from least to greatest and greatest to least. Reasoning about the sizes of decimal numbers supports your student in later lessons when they decide whether their answers to addition and subtraction problems make sense.

$0.6 = \frac{6}{10}$ $0.06 = \frac{6}{100}$

$0.6 > 0.06$

$2.3 < 2.31$

$2.31 > 2.3$
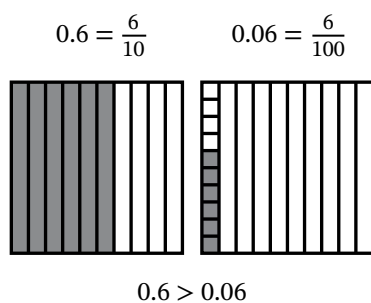
$0.32 = \frac{32}{100}$

$0.09 = \frac{9}{100}$

0.09 meters is less than 0.32 meters.

When comparing numbers that have similar digits, students use models to support their understanding of the values of the digits.

Writing decimal numbers in fraction form allows students to use their understanding of fractions to determine the values of the numbers.

ones	tenths	hundredths
8	2	
0	4	9
7	2	
8	0	4

0.49	7.2	8.04	8.2

Students reason about place value units to order decimal numbers from least to greatest and from greatest to least.

At-Home Activity

Who Has the Larger Decimal?

Practice comparing decimals by playing a card game.

- Make your cards by using 10 index cards or small pieces of paper. Write one decimal number on each card. Make sure to use 10 different decimal numbers and only use a combination of ones, tenths, and hundredths for the place values. Repeat this process for a second set of index cards or small pieces of paper. The decimal numbers in the second set of cards can be the same as the first set or they can be different.

- Shuffle all the cards. Deal the cards equally to you and your student by placing the cards facedown into two piles. You will have one pile of cards and your student will have the other pile of cards.

- Have you and your student each turn over your top card at the same time. Discuss who has the larger number. The player with the larger number takes both cards and places the cards facedown at the bottom of their pile.

- If the decimal numbers are equal, then have both players turn over the next card in their pile. Repeat this step until the numbers are not equal. The player with the largest number wins all the cards that are faceup. The winner then puts all these cards facedown at the bottom of their pile.

- The game ends when one person has all the cards.

FAMILY MATH

Addition of Tenths and Hundredths

Dear Family,

Your student is learning to add decimal numbers. They apply familiar models and strategies they have used when adding fractions and whole numbers. Your student adds decimal numbers in fraction form to strengthen their understanding of fraction addition. Adding in fraction form also helps them build an understanding of how to add the place value units that are to the right of the decimal point. They solve word problems and use estimation to decide whether their answers are reasonable.
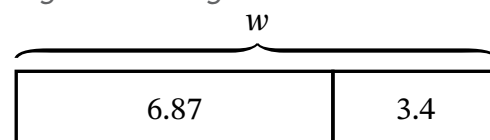
$$\frac{8}{10} + \frac{25}{100} = 1\frac{5}{100} = 1.05$$

$$\frac{80}{100} + \frac{25}{100} = 1\frac{5}{100}$$

$$0.4 + 1.12 = 1.52$$

$$\frac{4}{10} + 1\frac{12}{100} = \frac{40}{100} + 1\frac{12}{100} = 1\frac{52}{100}$$

A dog weighs 6.87 kilograms. A cat weighs 3.4 kilograms. What is the total weight of the dog and the cat?

$$6.87 + 3.4 = w$$

$$6\frac{87}{100} + 3\frac{40}{100} = 6 + 3 + \frac{87}{100} + \frac{40}{100}$$

$$= 9 + \frac{127}{100}$$

$$= 9\frac{127}{100}$$

$$= 10\frac{27}{100}$$

$$w = 10.27$$

The total weight of the dog and cat is 10.27 kilograms.

Before they add, students may need to make common units by renaming the tenths as hundredths. They use familiar models such as number bonds to help them add efficiently.

Writing decimal numbers in fraction form helps students focus on the value of each number and examine which numbers need to be renamed to add like units.

A tape diagram supports students with understanding a word problem. Students can use various solution strategies to solve, such as adding ones to ones and hundredths to hundredths.

At-Home Activity

Ordering Dinner

Invite your student to help you find the cost of a meal from a grocery store or restaurant. For example, you might find the cost for two sandwiches and two drinks. Ask your student to add the cost of two items and you add the cost of the other two items. Then find the total by adding both of your totals. Invite your student to discuss their strategy for adding, such as adding the dollars and then the cents or by adding up to make the next dollar.