**STUDY LINK 3·12**

Unit 4: Family Letter

Decimals and Their Uses

In previous grades, your child had many experiences with money written in decimal notation. In the next unit, the class will learn about other uses of decimals.

The class will focus on examples of decimals in everyday life. For example, some thermometers have marks that are spaced $\frac{2}{10}$ of a degree apart. These marks give a fairly precise measurement of body temperature, such as 98.6 °F.
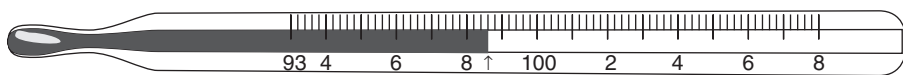
Normal body temperature is about 98.6 °F.

Students will explore how decimals are used in measuring distances, times, and gasoline mileage.

We will also begin a yearlong measurement routine. Students will find their own "personal references," which they will use to estimate lengths, heights, and distances in metric units. For example, your child might discover that the distance from the base of his or her thumb to the tip of his or her index finger is about 10 centimeters and then use this fact to estimate other distances.

About 10 cm
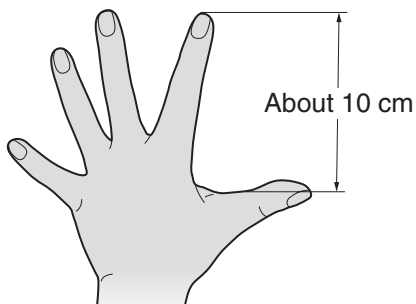
The World Tour will continue. In small groups, students will gather information about different countries in Africa and then share what they have learned with the class. Students can then compare and interpret data for a large number of countries from the same region.

Please keep this Family Letter for reference as your child works through Unit 4.

Vocabulary

Important terms in Unit 4:

centimeter (cm) In the metric system, a unit of length equivalent to $\frac{1}{100}$ of a meter; 10 millimeters; $\frac{1}{10}$ of a decimeter.
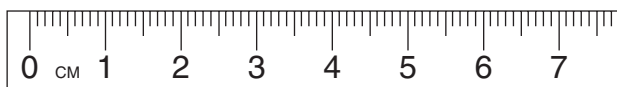
decimeter (dm) In the metric system, a unit of length equivalent to $\frac{1}{10}$ of a meter; 10 centimeters.

hundredths In base-10 *place-value* notation, the place in which a digit has a value equal to $\frac{1}{100}$ of itself; the second digit to the right of the decimal point.

meter (m) In the metric system, the unit of length from which other units of length are derived. One meter is the distance light will travel in a vacuum (empty space) in $\frac{1}{299,792,458}$ second; 100 centimeters; 10 decimeters.

millimeter (mm) A metric unit of length equivalent to $\frac{1}{1,000}$ of a meter; $\frac{1}{10}$ of a centimeter.

ONE Same as *whole.*

ones The place-value position in which a digit has a value equal to the digit itself.

personal measurement reference A convenient approximation for a standard unit of measurement. For example, many people have thumbs that are approximately one inch wide.

place value A number writing system that gives a digit a value according to its position, or place, in the number. In our standard, base-10 system, each place has a value ten times that of the place to its right and 1 tenth the value of the place to its left.

1,000s	100s	10s	1s		0.1s	0.01s	0.001s
Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths

tens The place-value position in which a digit has a value equal to 10 times itself.

tenths In base-10 *place-value* notation, the place in which a digit has a value equal to $\frac{1}{10}$ of itself; the first digit to the right of the decimal point.

thousandths In base-10 *place-value* notation, the place in which a digit has a value equal to $\frac{1}{1,000}$ of itself; the third digit to the right of the decimal point.

whole (or ONE, or unit) In *Everyday Mathematics,* an entire object, collection of objects, or quantity being considered; 100%. Same as the ONE or unit whole.

Do-Anytime Activities

To work with your child on the concepts taught in this unit, try the interesting activities listed below. For each activity, discuss the use of decimals and the meanings of place values.

1. Have your child track the sports statistics of a favorite athlete.

2. Have your child compare prices of items in the supermarket.

3. Help your child create and use new personal reference measures.

4. Together, find statistics about countries in the World Tour. Look in newspapers and almanacs.

Building Skills through Games

In Unit 4, your child will play the following games.

Baseball Multiplication See *Student Reference Book,* pages 231 and 232. The game provides practice with multiplication facts.

Fishing for Digits See *Student Reference Book,* page 242. The game provides practice in identifying digits, the values of the digits, adding, and subtracting.

Name That Number See *Student Reference Book,* page 254. The game provides practice with using operations to represent numbers in different ways.

Number Top-It (**Decimals**) See *Student Reference Book,* page 256. The game provides practice with comparing, ordering, reading, and identifying the value of digits in decimal numbers.

Polygon Pair-Up See *Student Reference Book,* page 258. The game provides practice in identifying properties of polygons.

Product Pile-Up See *Student Reference Book,* page 259. The game provides practice with multiplication facts.

As You Help Your Child with Homework

As your child brings assignments home, you may want to go over the instructions together, clarifying them as necessary. The answers listed below will guide you through some of the Study Links in this unit.

Study Link 4·1

1.

1,000s	100s	10s	1s
6	8	5	4

3.

10s	1s		0.1s	0.01s	0.001s
7	3	.	0	0	4

Study Link 4·3

Sample answers:

3. 5.05, 5.25, 5.95

4. 4.15, 4.55, 4.99

5. 21.4, 21.98, 21.57

6. 0.89, 0.85, 0.82

7. 2.155, 2.16, 2.159

8. 0.84, 0.88, 0.87

Study Link 4·4

1. Seikan and Channel Tunnel

2. Between 90 and 130 miles

3. Sample answer: I rounded the tunnel lengths to "close-but-easier" numbers and added $35 + 30 + 20 + 15 + 15 = 115$ to find the total length.

4. 12 miles **5.** 8 miles

Study Link 4·5

1. 120.41 **2.** 1.46 **3.** 5.18 **4.** 0.03

5. $>$ **6.** $<$ **7.** $>$ **8.** $>$

9. Sample answer: $2.33 + 4.21$

10. Sample answer: $6.83 - 5.31$

Study Link 4·6

1. **a.** $0.76 **b.** $2.43 **c.** $4.64 **d.** $2.95

2. $16.40 **3.** $2.57 **4.** $7.32 **5.** $18.10

6. $10.78

7. Loaf of bread; Sample answer: The price of a loaf of bread in 2000 was $0.88. The expected price of a loaf of bread in 2025 is $3.31. This was almost 4 times its cost in 2000.

Study Link 4·7

1. $\frac{335}{1,000}$; 0.335 **2.** $\frac{301}{1,000}$; 0.301

3. $\frac{7}{100}$; 0.07 **4.** $1\frac{5}{100}$; 1.05

5. 0.346 **6.** 0.092 **7.** 0.003 **8.** 2.7

9. 0.536 **10.** 0.23 **11.** 7.008 **12.** 0.4

13. $>$ **14.** $>$ **15.** $<$ **16.** $<$

Study Link 4·8

1. **a.** 7 cm **b.** 0.07 m **2.** **a.** 12 cm **b.** 0.12 m

3. **a.** 4 cm **b.** 0.04 m **4.** **a.** 6 cm **b.** 0.06 m

5. **a.** 2 cm **b.** 0.02 m **6.** **a.** 14 cm **b.** 0.14 m

Study Link 4·9

2. 180 mm **3.** 4 cm **4.** 3,000 mm

5. 400 cm **6.** 7 m **7.** 460 cm

8. 794 cm **9.** 4.5 m **10.** 0.23 m

11. 60 cm **12.** 8 cm **13.** 7 cm

Study Link 4·10

2. **a.** 65 mm **b.** 2.6 cm **c.** 610 cm

3. **a.** 50 mm **b.** 3 cm **c.** 300 cm

4. **a.** 800 mm **b.** 11 cm **c.** 5 m

5. **a.** 430 mm **b.** 9.8 cm **c.** 0.34 m

6. **a.** 6 mm **b.** 0.4 cm **c.** 5,200 mm