



## **Unit 10: Measurement**

This unit has three main objectives:

- To review and extend previous work with measures of length, weight, and capacity by providing a variety of hands-on activities and applications. These activities will provide children with experience using both U.S. customary and metric units of measurement.
- To extend previous work with the median and mode of a set of data and to introduce the mean (average) of a set of data.
- To introduce two new topics: finding the volume of rectangular prisms and using ordered pairs to locate points on a coordinate grid.

Children will repeat the personal measurements they made earlier in the year so that they may record their own growth. They will display these data in graphs and tables and find typical values for the class by finding the median, mean, and mode of the data.

They will begin to work with volumes of rectangular boxes, which have regular shapes, and will also compare the volumes of several irregular objects and investigate whether there is a relationship between the weight of these objects and their volumes.

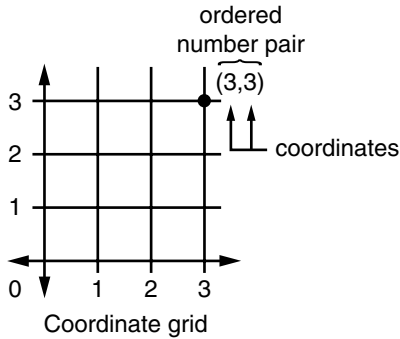


Please keep this Family Letter for reference as your child works through Unit 10.

## Vocabulary

Important terms in Unit 10:

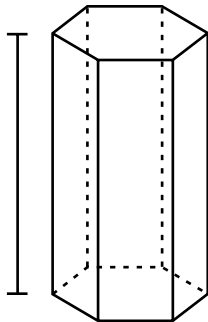
**coordinate grid** A device for locating points in a plane. It is formed by drawing two number lines at right angles to each other and intersecting at their zero points.



**coordinates** Ordered pairs of numbers written within parentheses and used to locate points on a coordinate grid.

**ordered number pair** A pair of numbers used to locate points on a coordinate grid.

**height of a prism** The distance between the two opposite bases of a prism.

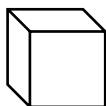


**volume** A measure of the amount of space taken up by a 3-dimensional object.

**square centimeter (square cm,  $cm^2$ )** A unit for measuring area.



**cubic centimeter (cubic cm,  $cm^3$ )** A unit for measuring volume.



**weight** The force of gravity pulling an object toward Earth or how heavy something is.

**capacity of a scale** The greatest weight a scale can measure. For example, most infant scales have a capacity of about 25 pounds.

**capacity of a container** The measure of how much liquid or other pourable substance a container will hold, or how much of a liquid or pourable substance there is.

**frequency table** A chart on which data are tallied to find the frequency of given events or values.

Waist-to-floor measurement (inches)	Frequency	
	Tallies	Number
27	//	2
28		0
29	###	5
30	### III	8
31	### II	7
32	IIII	4
	Total = 26	

**mode** The number(s) or item(s) that occurs most often in a set of data. For example, in the frequency table above, 30 inches is the mode.

## Do-Anytime Activities

To work with your child on the concepts taught in this unit and in previous units, try these interesting and rewarding activities:

- 1 Review equivalent names for measurements. For example: *How many inches in 1 foot? How many pints in 3 quarts? How many centimeters in 1 meter? How many grams in 1 kilogram?*
- 2 Review multiplication facts. For example: *How much is 6 times 3?  $7 \times 8$ ?  $4 [5s]$ ?*
- 3 Review division facts. For example: *How many 2s in 12? What number multiplied by 4 equals 12? How much is 18 divided by 2?*
- 4 Practice multiplication with multiples of 10, 100, and 1,000. For example: *How much are 10 [30s]? How much is  $4 \times 100$ ? What number times 100 equals 4,000?*
- 5 Practice division with multiples of 10, 100, and 1,000. For example: *How much is  $\frac{1}{10}$  of 300? How many 50s in 5,000? How much is 200 divided by 50?*

### Building Skills through Games

In Unit 10, your child will practice mental-math skills by playing the following games:

#### Memory Addition/Subtraction

Partners agree on a target number. They take turns adding or subtracting any number from 1 to 5 into the memory of their calculators while keeping track of the sums or differences in their heads. Then they press the **(MRC)** key to see if the final memory sums match their initial target number.

#### Multiplication Top-It

Players turn over two cards and call out the product. The player with the higher product keeps all the cards. The player with more cards at the end wins! *You will receive more detailed directions for Multiplication Top-It when we begin to play it in class.*

## As You Help Your Child with Homework

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

### Home Link 10.1

- |  |                 |
|--|-----------------|
| 1. 60; 96  | 2. 9; 12; 17    |
| 3. 33; 6; 12   | 4. 2; 4; 6      |
| 5. $\frac{1}{2}$ ; $\frac{1}{320}$ ; $\frac{1}{8}$ ; $\frac{1}{4}$ ; $\frac{1}{2}$ | 6. 90; 152; 117 |

### Home Link 10.3

- 100 cubic cm
- 8 square cm
- 100 square cm; 400 cubic cm
- 52 square cm
- 260 cubic cm

### Home Link 10.6

- |                |               |
|----------------|---------------|
| 1. inch        | 2. gram       |
| 3. square yard | 4. centimeter |
| 5. inch        | 6. quart      |
| 7. liter       | 8. 20 minutes |

### Home Link 10.7

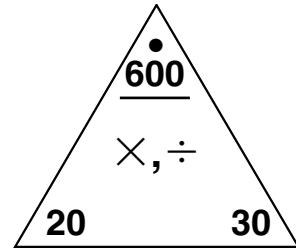
- 3

### Home Link 10.8

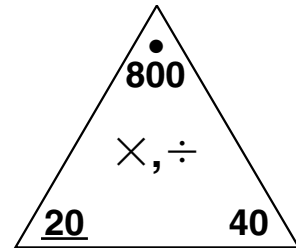
- 56.3
- 12.8

### Home Link 10.9

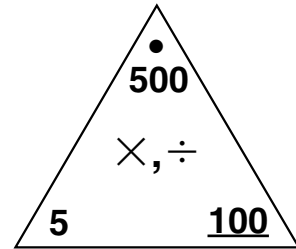
- $20 \times 30 = 600$   
 $30 \times 20 = 600$   
 $600 \div 30 = 20$   
 $600 \div 20 = 30$



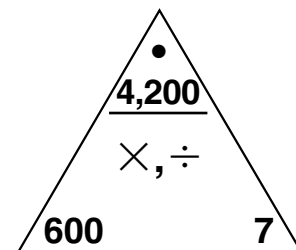
- $40 \times 20 = 800$   
 $20 \times 40 = 800$   
 $800 \div 40 = 20$   
 $800 \div 20 = 40$



- $100 \times 5 = 500$   
 $5 \times 100 = 100$   
 $500 \div 100 = 5$   
 $500 \div 5 = 100$



- $600 \times 7 = 4,200$   
 $7 \times 600 = 4,200$   
 $4,200 \div 600 = 7$   
 $4,200 \div 7 = 600$



### Home Link 10.11

- |               |             |             |
|---------------|-------------|-------------|
| (3,6) Algeria | (4,3) Zaire | (5,5) Sudan |
| (4,5) Chad    | (5,6) Egypt | (4,6) Libya |

