Name _____   period _____

Science Shorts -7
The Metric System

Until the metric system was adopted in the 1790s there was no common system of measurements in the world. In Europe the measuring system of the ancient Romans, some 2,000 years old, was still in use in the 1700s. Because there was no standard, Roman feet and inches differed somewhat in size from one town to another. In additions to feet and inches, there were many local units such as the Italian cantarello, the German Metze or the English tod. The French, in fact had more than 1,000 units of measurement. To straighten out this confusion, committees of French scientists created the metric system.

In 1960 major revisions to the metric system resulted in a "new" metric system know as SI after the initial letters of its French name *Systeme International d'Unites.* The revisions were adopted at a General Conference of the Weights and Measures held by countries using the metric system and resulted in the creation of the International Systems of Units or SI.

The metric system is a decimal system of physical units based on a unit of length known as the meter (Greek for measure). The meter (m), which is approximately 39.37 inches, was originally defined as one ten-millionth of the distance from the equator to the North Pole on a line running through Paris, France. When scientists used this measurement they thought the earth was a perfect sphere. Later, after it was discovered that the Earth is not a perfect sphere the standard meter was defined as the distance between two fine lines marked on a bar of platinum-iridium alloy.

The metric system is known for its simplicity. All units of measurement are based on decimals- that is, units that increase or decrease by multiples of ten. The simplicity of the metric system is evident in how easily one unit of measure can be changed into another. To change units in the metric system, simply move the decimal point to the right or to the left, depending on whether the unit of measurement is increasing or deceasing.

The unit for length in the metric system is a meter (m), which is about the distance from the floor to the top of a doorknob. The unit for volume in the metric system is a liter (L). The basic unit of mass in the metric system is called a gram (g).

Determine if the measurements below are referring to length, volume or mass.

1. 2.0 m _____   6. 10.4 mg _____

2. 3.0 L _____   7. 20.6 kg _____

3. 4.5 cm _____   8. 100 mm _____

4. 5.9 g _____   9. 245 kL _____

5. 2.0 mL _____   10. 3 dL _____

Match each measurement on the left with the most appropriate unit on the right.

11. _____ Width of the tip of a shoelace

12. _____ Length of 12 city blocks   A. meter

13. _____ Mass of a turkey

14. _____ Width of your hand   B. liter

15. _____ Amount of ink a pen will hold

16. _____ Height of a giraffe   C. gram

17. _____ Mass of a nickel

18. _____ Amount of water a sink will hold

19. _____ Amount of soda in a bottle

20. _____ Mass of a middle school student