**The Metric System**

**I. Introduction**

The metric system uses units such as [meter](javascript:void(0)), [liter](javascript:void(0)), and [gram](javascript:void(0)) to measure length, liquid volume, and mass, just as the U.S. customary system uses feet, quarts, and ounces to measure these.

In addition to the difference in the basic units, the metric system is based on 10’s, and different measures for **length** include kilometer, meter, decimeter, centimeter, and millimeter. Notice that the word “meter” is part of all of these units.

The metric system also applies the idea that units within the system get larger or smaller by a power of 10. This means that a meter is 100 times larger than a centimeter, and a kilogram is 1,000 times heavier than a gram. You will explore this idea a bit later. For now, notice how this idea of “getting bigger or smaller by 10” is very different than the relationship between units in the U.S. customary system, where 3 feet equals 1 yard, and 16 ounces equals 1 pound.

In this activity, you will practice applying the metric system when measuring different objects, performing metric conversions, and quizzing your ability to utilize the metric system.

**II. Procedure**

1. Start the activity by going to the following website :

<http://www.glencoe.com/sites/common_assets/mathematics/mc1/cim/chapter_08/M1_13/M1_13_dev_100.html> .

2. Push “Play” and watch the tutorial, Using The Metric System.

3. Click the Forward button (bottom right of the screen).

4. On the next screen, the items named at the top of the screen all have certain units of measure

that are used to measure or describe them. The units of measure relate to mass, length, or

capacity. Click and drag each item to the area that best describes its metric unit of measure.

When you are finished, check your work. Record the item with each unit.

mg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

kg = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

m = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ml = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

L = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

kL = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Click the forward arrow when you are ready to continue.

6. On the next screen, a hand weight is 500 grams. How many kilograms is this?

How many milligrams is this? You can use the diagram to change units of mass in the metric

system. First, enter the measurement you know, in this case, 500 grams, into the Grams

answer box. Do not use a comma when entering numbers. Then click the answer box for the

unit of measure you want to change to. Enter your answer and check it.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg = 500 grams = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mg

7. Click the forward arrow when you are ready to continue.

8. On the next screen, sound travels at about 343 meters-per-second in air. In water, sound

travels about 1.435 kilometers-per second. Does sound travel faster in air or water? One way

to find out is to change kilometers to meters. Do not use a comma when entering numbers.

Refer to the conversion wheels to get your answer; then click on the dolphin above the

surface if sound travels faster in air or the dolphin below the surface if sound travels faster in

water.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meters-per second (sound in water)

9. Click the forward arrow when you are ready to continue.

10. It's time to practice what you have learned. On the next screen, click the mouse inside the

rectangle to begin typing your answer. Do not use a comma when entering numbers. Click

the check mark to check your answer. You may use the TAB key on the keyboard to

advance to the next answer box. Also, you may use the RETURN key to check your answer.

1. 150 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

2. 154 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L = 153 mL

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m = 150 cm

5. 210 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mg = 5.37 g

7. Circle One : Liters Milliliters

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L