***LT: I can accurately measure length to the nearest cm and mm.***

***Measuring Metric: Length***

The basic unit in the metric system for measuring length is the *meter.* A meter is about the distance from the floor to a doorknob. Lengths that are longer or shorter than a meter can be described using a metric prefix with the basic meter unit. Shorter lengths can be measured in *centimeters.* There are 100 centimeters in a meter. A single centimeter is 1/100 of a meter. The width of your little finger or the width of a large paper clip is about a centimeter. Very small lengths can be measured in *millimeters.* There are 1,000 millimeters in a meter. A single millimeter is 1/1,000 of a meter. The wire on a paper clip is about a millimeter wide. Longer distances can be measured in *kilometers.* A kilometer is the same length as 1,000 meters. A

meter is 1/1,000 of a kilometer. If you placed nine football fields end to end you would have a kilometer. Scientists often use abbreviations for metric units. It is important to know and recognize these abbreviations. Notice that all of these abbreviations are lower case letters.

meter m

centimeter cm

millimeter mm

kilometer km

To measure length, we use a tool called meter stick. For shorter lengths, a tool called a metric ruler can be used. Below you see a sample of the scale you will see on both the meter stick and the metric ruler. The length of an entire meter stick is one meter. It is divided into 100 parts called centimeters. A centimeter = .0l meter. These are the longer marks on the meter stick. They are usually numbered. The smallest marks on the meter stick are millimeters. There are 1,000 of these marks on each meter stick. A millimeter = .001 meter. Each centimeter is equal to ten millimeters. You could also say that a millimeter = .1 centimeter.

Notice that the line measures more than 5 but less than 6 centimeters. If you were to measure this line to the nearest centimeter, you would say it is 6 cm long since it is closer to 6 cm than 5 cm. This is not very precise, however. You might say that the line measures 5 cm, 7 mm but this is not convenient to record and it is considered bad form to mix metric units. Since each

millimeter = .1 centimeter, you might say that the line is 5.7 cm long. You might also say that the line is 57 mm long since there are 10 mm in each centimeter. Either way would be correct.

**Check Your Reading…**

1. What is the metric unit for length? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Which is longer, a millimeter or a kilometer? \_\_\_\_\_\_\_\_\_
3. How many centimeters are in one meter? \_\_\_\_\_\_\_\_\_\_\_\_
4. Which is larger, 6.8 cm or 68 mm? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How many millimeters are in a centimeter? \_\_\_\_\_\_\_\_\_\_\_
6. What is a better way to write 3 cm, 4mm? \_\_\_\_\_\_\_\_\_\_\_\_

***Let's see if you understand how to use a metric ruler to measure length.***

Get a metric ruler from the supply area. Use the ruler to measure each line below. Convert each measurement into meters, centimeters and millimeters. Be sure to make precise measurements. You will be evaluated on the accuracy of your measurements.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_m \_\_\_\_\_\_ cm \_\_\_\_\_\_ mm

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_m \_\_\_\_\_\_ cm \_\_\_\_\_\_ mm

3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_m \_\_\_\_\_\_ cm \_\_\_\_\_\_ mm

4. \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_m \_\_\_\_\_\_ cm \_\_\_\_\_\_ mm

5. \_\_\_

\_\_\_\_\_\_\_\_\_m \_\_\_\_\_\_ cm \_\_\_\_\_\_ mm