

Sec. _____ Name: _____

Experiment: Observations & Questions - Intro
to the Metric System (B. Science 10-1-1f)

Purpose: To understand the role of
observations and questions in science and to
introduce the metric system.

Materials: moldy bread metric ruler

Methods: **PLACE ANSWERS IN RESULTS**

Part A: Observations & Questions

1. Record in results what you observe.
2. Describe in detail what you see on the bread.
3. List three questions you have after seeing the mold?

Part B: Measuring distance in the metric system.

1. The metric system provides a universal standard of measurement. It is a decimal system scaled on the powers of 10. Pick up a metric ruler and look carefully at the scale. You will see many little lines, and every so often a much longer line marked with a number. The longer lines are centimeter (cm) marks, and the shorter lines are one tenth of a centimeter (0.1), or millimeter (mm) marks. Using your metric ruler, draw a line that is 7 cm long. Put a small mark on the line for each centimeter length.
2. Draw a line that is 7 mm long.
3. What do you notice about the relationships between the lengths of these lines?
What part of a centimeter is one millimeter?
- 4a. Measure the length of the following line in mm then cm. _____
- 4b. Measure the length of the following line. _____
5. To measure lengths that do not fall exactly on a centimeter mark, either count all of the small lines to record the measurement in mm or use cm and count the small lines as tenths of a centimeter. For example:



You will see that it is easier to take the lengths in the larger unit.
Measure the lengths of the following lines, and record in results.

- a. _____ b. _____ c. _____
6. How do you change a measurement from centimeters to millimeters?
7. How do you change a measurement from millimeters to centimeters?

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Results: Part A: Observations & Questions

1. observe: _____
2. detail: _____
3. a. _____ b. _____
c. _____

Part B: Measuring distance in the metric system.

1. 7 cm 2. 7 mm
3. the 7 cm one is : _____ part of a cm is _____ of 1 mm
- 4a. length _____ mm; length _____ cm 4b. length _____ mm; length _____ cm
5. (include proper units) a. _____ b. _____ c. _____
6. from cm to mm: _____
7. from mm to cm: _____

Conclusions:

Although you may find the metric system new, it is not as different as you might think. It can be used to measure anything. Use the table below to convert English units to metric units in the following sentences. Place your answer in the line provided.

(Remember Algebra - you may have to set up a proportion to solve).

2.54 cm = 1 inch

1 liter = 1.06 quarts

1 m = 39.37 inches

1 kilogram = 2.2 pounds

1 m = 1.09 yards

28.3 grams = 1 ounce

1 kilometer = 0.62 mile

1. Bullfrogs have big appetites. An adult bullfrog, is 8 inches (_____ cm) long and has been known to eat a poisonous coral snake that is 17 inches (_____ cm) long. Imagine eating something that is more than twice as tall as you are!
2. Many claim that the cheetah is the fastest animal in the world. However, it is only fast over short distances. According to one record, a cheetah averages 71 miles per hour over 700 yards. In metric units, this would be _____ kilometers per hour over _____ meters.
3. A 99 pound (_____ kilogram) cheetah can accelerate to 45 miles (_____ kilometers) per hour in only 2 seconds!
4. Imagine 35 000 bees swarming around your chest and throat to form a "beard of bees." This is a record held by James Johnson of West Virginia. The bees weighted 10 pounds (_____ kilograms).
5. Camels can drink 108 quarts (_____ liters) of water in 10 minutes! Some camels have survived a 34 day journey of 537 miles or (_____ kilometers) without any water except for the dew on vegetation.
6. One of the worlds largest spiders lives in the Amazon basin and actually eats birds! Over 7 inches (_____ cm) across the legs, this bird - eating spider does not spin a web. Instead it runs down small mammals and hummingbirds that have a mass of 3 ounces (_____ grams). Using its sharp, hollow fangs, the spider injects its prey with digestive juices that liquefy the victim's body. The spider then sucks out the contents.

-- HAVE THIS LAB COMPLETE TO TURN INTO HOMEWORK BOX TOMORROW BEFORE CLASS BELL RINGS--