

Name: _____

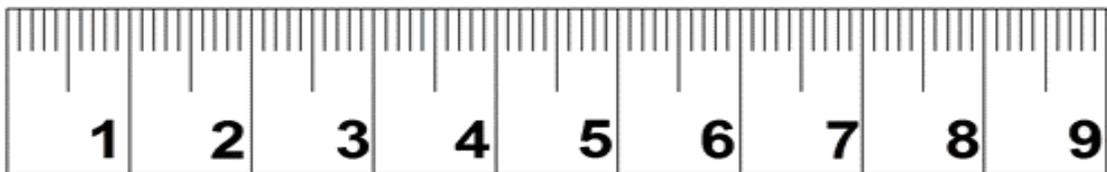
Date: _____

Period: _____

Measuring and Collecting Data

In science, the metric system is used to collect data. For example, mass is measured in grams, volume is measured in liters, and length is measured in meters. The metric system is used because it is easy to convert between smaller and larger units, such as centimeters to meters. Metric rules such as the one below, shows centimeters (largest lines) and millimeters (smallest lines).

Directions: Use the ruler below to answer questions 1 – 2.



1. There are _____ centimeters (mm) shown in the ruler.
2. There are _____ millimeters (mm) in each centimeter.

Directions: Use the ruler given to you in class to measure the lines below.



The line is _____ cm long.
The line is _____ mm long.

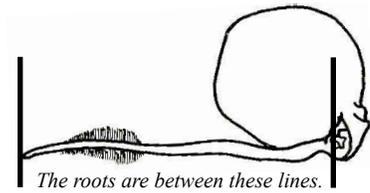


The diameter of the circle is _____ cm.
The diameter of the circle is _____ mm.

Directions: Sketch what the seeds in your Petri dish look like. Be sure to label the type of treatment the radish seeds received. Then make three qualitative observations about each Petri dish.

Sketch of Petri Dish	Qualitative Observations
Treatment: 	1. 2. 3.
Treatment: 	1. 2. 3.

Now that you have collected qualitative data, we must collect the other type, quantitative data. In order to determine these values, you must measure the growth of each seed. To maintain consistency between groups, you need to measure the growth of the seed's root. The roots are white and extend to the tip. Examine the diagram to the right before beginning your measurements.



Class Data

	Group	Growth of Seeds (in cm)			Average Growth of Seeds (in cm)
		Seed 1	Seed 2	Seed 3	
Roots	1				
	2				
	3				
	4				
Stems	1				
	2				
	3				
	4				
Leaves	1				
	2				
	3				
	4				
Water	1				
	2				
	3				
	4				

Total # of Seeds (n = ____)

- (IOD 301) Place the treatments in order from the most amount of average seed growth to the least amount of average seed growth.
 _____, _____, _____, _____
- (EMI 401) Which part of the Ailanthus contains the most allelopathic chemicals?
 a. roots b. stems c. leaves
- (SIN 403) Explain how the data from this experiment supports the claim that the Ailanthus plant has allelopathic chemicals.

- The freshmen biology teachers will compile the data from each class to determine the results of this experiment for the whole school. Why do you think the teachers need to do this?

