

Name: _____ Partner: _____

Significant Digits Lab

When taking measurements, you should always write all values so they show the smallest marking on the instrument, plus an extra digit that you estimate. For example, if you use a ruler that has lines for millimeters, you should write your answers to the nearest tenth of a millimeter because you can estimate the last digit. The exception to this rule is digital equipment, such as an electronic balance. Because you can't estimate the last digit on a digital balance, simply write down the answer on the readout.

In this lab, you will be measuring length, volume, and mass using common laboratory instruments. For each of these tools, you must write down your answer with the correct number of significant digits! Remember, the number of digits you write depends on the instrument you used to take the measurement.

Station 1: Measuring volume with a 50 mL graduated cylinder

Use the 50 milliliter graduated cylinder at this station to find the following volumes. Be sure to use the proper number of significant figures in your answer!

- 1) What is the maximum volume of the pipet? _____
- 2) What is the maximum volume of the pen cap? _____

Station 2: Measuring volume with a 10 mL graduated cylinder

Use the 10 milliliter graduated cylinder at this station to find the following volumes. Be sure to use the proper number of significant figures in your answer!

- 1) What is the maximum volume of the pipet? _____
- 2) What is the maximum volume of the pen cap? _____

Station 3: Measuring mass with an electronic balance

Use the electronic balance at this station to find the following weights. Be sure to use the proper number of significant figures in your answer!

- 1) What is the mass of the penny? _____
- 2) What is the mass of the paper clip? _____

Station 4: Measuring mass with a triple beam balance

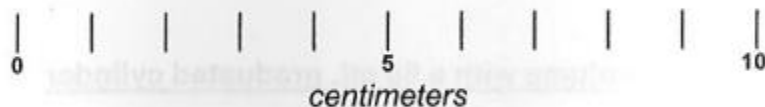
Use the triple beam balance at this station to find the following weights. Be sure to use the proper number of significant figures in your answer!

- 1) What is the mass of the penny? _____
- 2) What is the mass of the paper clip? _____

Station 5: Measuring distance with a ruler

Using the ruler printed below, find the following lengths. Be sure to use the proper number of significant figures in your answer!

Ruler:



- 1) What is the length of the post-it note? _____
- 2) What is the length of the paper clip? _____

Station 6: Measuring distance with a ruler

Using the ruler printed below, find the following lengths. Be sure to use the proper number of significant figures in your answer!

Ruler:



- 1) What is the length of the post-it note? _____
- 2) What is the length of the paper clip? _____

What is the difference between the 2 rulers? _____

Station 7: Measuring thickness with calipers

- 1) Using the calipers, measure the inside diameter of the test tube. _____
- 2) Using the ruler, measure the inside diameter of the test tube. _____

Station 8: Measuring temperature of water with a thermometer

- 1) Temperature of water with thermometer 1. _____
- 2) Temperature of water with thermometer 2. _____

What is the difference between the 2 thermometers? _____
