

Prelab Example

Experiment 1 - Mass, Volume and Graphing

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Reference: Chemistry 1A Laboratory Manual, pp. 1-11.

Purpose and Overview:

In this experiment, older and newer pennies will be weighed, their average masses will be compared, and the standard deviations will be calculated. The linear dimensions of a milk carton will be measured to determine its volume, and that will be compared to the volume printed on the container. The volume of liquids in two graduated cylinders will be measured and checked by the instructor. Finally, the circumference and diameter of four different beakers will be measured, a graph of circumference vs. diameter will be made, and the slope of the graph will be determined.

Outline of Procedure:

1. Weigh 4 pennies (1981 or before).
Have partner weigh 4 pennies (1983 or after). Record mass and year. Exchange data.

2. Measure l, w, and h of soymilk container (± 0.1 cm).

Read the volumes of liquid in the graduated cylinders in the hood. (Large one to ± 0.1 mL, small one to ± 0.01 mL.)
Check with instructor.

3. Using string, measure the circumference of 4 beakers of different sizes. Measure the diameter of each beaker.

Data:

1. Mass Measurement

Pre-1981 pennies

Post-1983 pennies

Date

Mass

Date

Mass

_____ g

_____ g

_____ g

_____ g

_____ g

_____ g

_____ g

_____ g

2. Volume measurement

a. Milk carton dimensions

height: _____ cm

width: _____ cm

depth: _____ cm

Volume printed on milk carton: _____ mL _____ quarts

b. Volume of liquid in 10-mL graduated cylinder _____ mL

Volume of liquid in 50-mL graduated cylinder _____ mL

3. Graphing

Beaker size (mL)

circumference (cm)

diameter (cm)

[Notice that there are no calculations or results of calculations in the data section! The data section includes only the measurements that you will be making in the laboratory.]