

Mass & Volume Lab

Group Names:

Purpose: In this lab, you will practice finding the mass and volume of different objects.

Materials:

- Triple beam balance
- 100mL graduated cylinder
- 250mL beaker
- Metric ruler

Part A: Measuring mass directly.

1. Measure the objects on the table using the triple beam balance. This needs to be done twice by two different people. Take the average.
2. Use the proper number of decimal places and don't forget units!

Object	Partner 1	Partner 2	Average
Coin (1 quarter, 1 nickel, 1 dime, and 2 pennies)			
Paper Clip			
Large Block			
Small Block			
Metal Slab			
Dice			
Marble			

Part B: Finding mass by difference.

1. Find the mass of an empty 250mL beaker. Record the mass in the table.
2. Using the graduated cylinder, obtain 15.0 mL of water.
3. Pour the water into the beaker and find the mass of the beaker and the water. Record the mass in the table.
4. Find the mass of the water alone by subtracting the mass of the beaker from the mass of the beaker and the water.
5. Repeat using the different volumes of water in the table.
6. Be sure to use the proper number of decimal places and don't forget units!

Volume of Water	Mass of Beaker Alone	Mass of Beaker and Water	Mass of Water
15.0 ml			
53.0 ml			
100.0 ml			

Part C: Using water displacement to measure the volume of an irregular solid.

1. Fill a graduated cylinder with water. Record the volume in the table below.
2. Carefully drop the solid object into the graduated cylinder. Note the new level of the water and record it in the data table.
3. Find the volume of the clip by subtracting the initial volume of water from the volume of water with the clip in it. Record your results in the table.
4. Repeat steps 1- 3 for the remaining objects.

Object	Volume of Water	Volume of Water with Object	Volume of Object
Marble			
Paper Clip			
Coins			

Part D: Using a ruler to measure the volume of a regular solid

1. Find Volume of regular solids.
2. Be sure to use the proper number of decimal places.
3. Don't forget units!

Object	Length	Width	Height	Volume
Large Block				
Small Block				
DVD Case				

Part E: Find the density of the solids and liquids

1. Calculate the density of the following objects by dividing mass/volume. Use the proper units!

	Mass	Volume	Density= mass/volume
Coins			
Paper Clip			
Dice			
Marble			
15.0 ml water			
53.0 ml water			
100.0 ml water			

