

Properties of Matter – Mass Volume and Density Lab

This lab exercise will investigate three common properties of matter: Mass, Volume, and use the results to calculate the density of an object. You will become familiar with the use of a balance to measure mass and a graduated cylinder to measure volume.

1. Obtain a sample of unknown mass, volume, and density from your instructor.
2. Determine the Mass of the object by using a three bean balance.
3. Measure the Volume of the object by using a graduated cylinder.
4. Density is a calculated property of matter. Nonscientists often confuse density with the heaviness or weight of an object. This is because very dense objects seem to be harder to pick up. (Which would be heavier a ton of lead or a ton of feathers. The weights would be the same, but the feathers would be much less dense.) Density is defined as the mass divided by the volume of the object.
5. Calculate the density of your object.
6. (Optional) Measure the density of an object that is lighter than water.

Answer the following questions:

1. What are the sources of error for this experiment?
2. Which has the higher density? Water or Air
3. Which has the higher density? Water or the Queen Mary?