

Density Lab Writing Sample #2

Abstract:

This experiment was conducted in order to determine density using displacement of water, by using Vernier calipers, and by using buoyancy to determine density of a cooked egg compared to an uncooked egg. Densities of four individual metal spheres were obtained by displacing water in a 25mL graduated cylinder and then subtracting the final volume of the water from the initial volume after an individual metal sphere was placed inside of the graduated cylinder. This trial was repeated for all sizes of metal spheres. Densities of the metal spheres were also determined by finding the mass and volume of each by using Vernier calipers to find the diameter and volume, and the scale to find their mass. It was found that the most precise instrument to use was the Vernier calipers, rather than the water displacement technique since the Vernier calipers were most likely to obtain the closest repeated measurements to the actual density of the metal spheres. For the egg experiment, two trials were conducted, but the steps were very similar: one for an uncooked egg and one for a cooked egg. The eggs were both placed in water with a salt mixture added until the egg began to “just float.” Then density was determined by finding mass and volume of the salt water solution, which was also equal to the density of the egg. We were surprised to find that the density of the cooked egg was higher than that of the uncooked egg.