

Volume, Mass, and Density

The purpose of our lab was to be able to weigh mass and measure volume. We also used thermometers and found out density by using division.

If there is different colored sand then there will be different temperatures because the darker colored sand will attract more heat/light opposing the lighter colored sand.

The independent variable in this lab is the color and the type of sand. Which would be light and dark sand. The dependent variable is the temperature of the sand, because it changes over a period of time. The variables that need to be constant throughout the lab are the temperature of the light, which is the heat.

The materials used in this lab were the following:

- 100 mL graduated cylinder
- 75 mL of light-colored sand
- 75 mL of dark-colored sand
- 2 plastic cups
- 2 Celsius thermometers
- Light
- Light supporter
- Balance
- Stopwatch
- 25 mL of water
- 25 mL of oil
- Calculator
- Goggles
- Clear cup

First, I put 75 mL of light-colored and dark-colored sand into cups, stuck a thermometer in them and set them under a light for 10 minutes. While the temperature of the sand was rising, I started to work on my next section of the lab involving oil and water. I figured out the density of cups, oil, water, volume of oil, and volume of water with the balance. Then I calculated the actual mass and recorded what happens when you mix the oil and the water together.

In the experiment, the dark-colored sand had a higher temperature than the light-colored sand because darker colors attracts heat more. When I mixed the oil and the water together the oil floated to the top while the water sunk to the bottom. When we mixed them together there where a lot of bubbles which was the fat in the oil. The water was denser and the oil was less dense.

DATA TABLES REMOVED BY MRS. ROBERTS BEFORE POSTING

$$\text{Density of oil} = \frac{\text{mass of oil}}{\text{volume of oil}} = \underline{\hspace{2cm}} \text{g/mL}$$

The purpose of our lab was to be able to weigh mass and measure volume. We also used thermometers and found out density by using division. What happened in my lab was the dark sand was warmer and the water was denser. My hypothesis was correct and the dark sand was warmer because dark colors attract heat/light. I learned how to find the density of an object and I also learned that water is denser than oil. Darker colors attract heat applies to a real-life situation when kids have to wear uniforms when in school. A question I have is what makes a thing dense? I could use this in a future experiment by seeing what things are more dense and why.