

Density Lab

Objectives

- a. Science skills: measuring density, comparing different materials
- b. Science facts: learn how materials which have different densities behave when they are mixed together.

Materials

Mass balance or scale
Two 250 mL beakers
Vegetable Oil
Vinegar
Stirring stick or spoon
Two 100 mL graduated cylinders

Pre-Lab question

1. If you were given two liquids, what could you do to test which one is the most dense?
2. If two materials become well mixed, will they stay mixed forever?

Procedure

1. Measure the mass of one beaker and record it in your notebook.
2. Measure 75 mL of vegetable oil into the the beaker.
3. Measure the mass of the beaker filled with oil.
4. In your notebook, calculate the mass of oil by subtracting the mass of the empty beaker from the mass of the beaker full of oil.
5. Repeat steps 1-4 for vinegar in the second beaker.
6. Pour vinegar into beaker of oil. Observe and describe in lab notes.
7. Use stirring stick to stir the mixture for 60 seconds. Observe and describe in lab notes.
8. Wait for several minutes. Observe and describe in lab notes.

Questions

1. Use the information you wrote in your lab notes to calculate the density of the oil and of the vinegar. Which material is the most dense, and which is the least dense?
2. Could you guess during the lab which liquid was more dense before you calculated their densities in question 1?
3. If you mixed three materials which had different densities together instead of two, what do you hypothesize would happen?