

Name _____ Date _____

Sinking and Floating Fluids

Materials

- Baby food jar
- Paper towel
- 2 eye droppers
- Vegetable Oil
- Water
- Dish soap (preferably a colored one)
- Test tube
- Graduated cylinder
- Triple beam balance scale

Procedure

Step 1:

Using the eye dropper, place a few drops of dish soap on the bottom of the baby food jar. Next, place a few drops of the water on top of the dish soap. Record what happens to each fluid. Does one fluid rise to the top of the other? Be sure to write which fluid floats and which sinks.

Wipe the bottom of the jar clean and repeat this procedure until you have completed all six trials, using the 3 fluid samples:

What happens when you place the following liquids in a jar (first/second)?

1a. water/dish soap _____

1b. dish soap/water _____

2a. water/vegetable oil _____

2b. vegetable oil/water _____

3a. vegetable oil/dish soap _____

3b. dish soap/ vegetable oil _____

Why did the liquids behave the way they did? What does their floating and sinking behavior tell you?

Step 2:

Now find the density of each liquid using a graduated cylinder and a triple beam balance scale. First find the mass of the graduated cylinder. Record this measurement. Fill the graduated cylinder with 10 ml of one liquid at a time. Measure the mass of the liquid in the graduated cylinder, subtracting the weight of the cylinder. Calculate the density of the liquid using the formula: density = mass/volume. Record the density of the liquid. Repeat using the other two liquids.

The density of:

- water is: _____ g/ml
- dish soap is: _____ g/ml
- vegetable oil is: _____ g/ml

Step 3:

From what you've observed, predict what would happen if all three liquids were placed in a test tube together.

What would the test tube look like? Record your prediction.

Step 4:

After you've made your prediction, test it out by placing two droppers full of each of the four liquids into a test tube in the following order: vegetable oil, water, dish soap. Be sure to tilt the test tube as you drop in each liquid.

Draw a picture of what you observed.

What determined the order of the liquids in the test tube?

What do you think would happen if the order in which you dropped the liquids was changed?

How did the density of the liquids determine their placement in the test tube?