Name:
Date:

TRIPLE DECKER DENSITY FLOAT

Purpose: (make up a good one)

Materials and Methods: (re-type this)

1. Set up a large test tube in a stand.

2. Obtain 3 mL of water in a SMALL graduated cylinder. Add a couple drops of food colouring. Pour the coloured water into the test tube. Rinse out the graduated cylinder.

3. Obtain 3 mL of vegetable oil. Slowly pour the vegetable oil into the test tube over the water. Rinse cylinder.

4. Obtain 3 mL of methanol. Add a couple drops of food colouring (diff't from water). Slowly pour the methanol into the test tube over the vegetable oil. Rinse cylinder.

Observations:

Draw a coloured diagram of your test tube observations and label all layers.

Questions:

1. Rank the density of the liquids.

2. The density of some liquids increases when they are frozen.
   a) Explain in terms of particle theory why this might be.
   b) Predict what would happen in the experiment if you used the same volume of frozen methanol?

3. a) Explain how the density of water would change if it was heated.
   b) Predict what would happen in the experiment if you used the same volume of hot water.

4. Suggest a reason other than density why vegetable oil might settle out where it did in relation to water and methanol.

5. Explain why an object might float in the salt water of the ocean but sink in fresh water. Answer in terms of particle theory and density.