

Name: _____

Changing Densities Lab

Pre Lab Questions:

- a. What characteristics of ocean water might affect the density of water?

- b. If an item has a density of 6.5 g/ml and is placed in water with a density of 1.0g/ml what will happen to the item?

- c. How could we test the densities of different liquids?

Density Column Activity

Procedure:

1. Answer questions 1 and 2 below.
2. Have one person get the materials bin from the front of the lab.
3. Using the plastic cups fill each cup about 1 inch with one of the 3 different solutions. Hold the large beaker with both hands as you pour.
4. As a group decide what order you will add you solutions to the small glass beaker.
5. Using the pipette, gently add the first solution to the beaker by dropping the solution down the side of the beaker. Do about 3 full pipettes of solution.
6. Repeat this with the remaining two solutions.
7. Set the beaker aside and move on to the ice cube experiment. You will make final observations at the end of class.

Questions:

1. What order is your team going to layer the water in? Sketch it below.

2. What do you think will happen if you end up putting less dense water under more dense water?

3. Sketch a picture of the final density column. Label the layers from least to most dense.

Ice Cube Experiment

Procedure:

1. Answer questions 4 and 5 below.
2. Fill your glass beaker about half full with room temperature tap water.
3. Add one ice cube to the beaker.
4. Record your observations and answer question #6.
5. Dump the contents of the beaker down the drain.
6. Fill your glass beaker about half full with one of the salt water solutions.
7. Add one ice cube to the beaker.
8. Record your observations and answer question #7.

Questions:

4. If we put an ice cube in a cup of salt water and another ice cube in a cup of fresh water, which one will melt first? Explain why you think this.

5. Draw a picture of what you think will happen below in both the saltwater and freshwater.

6. What happened in the freshwater cup as the ice melted? Why?

7. What happened in the saltwater cup as the ice melted? Why?

Post Lab Questions:

1. How does change in temperature change density?
2. What ocean processes could change temperature?
3. How does change in salinity change density?
4. What ocean processes could change density?