

Name: \_\_\_\_\_

### Density Bag Lab

**Pre-lab Questions:** Answer the pre-lab questions using the “Density, Salinity, Temperature information” hand out.

1. In your own words, what is the definition of density?
  
2. In figure 2.2, list the boxes in order from the most dense to the least dense.

**Statement of Problem:** Will the small colored plastic bags float, sink, or subsurface in fresh cold and hot water?

**Hypothesis:** In the table below, make a prediction if the bags will sink, float, or subsurface.

Container of water	Small colored plastic bags			
	Fresh cold	Fresh hot	Salt cold	Salt hot
Fresh cold water				
Fresh hot water				

**Independent variable(s):**

**Dependent variable(s):**

**Data:** In the table below, record the actual data on whether the bag sunk, floated, or sub surfaced.

Container of water	Small colored plastic bags			
	Fresh cold	Fresh hot	Salt cold	Salt hot
Fresh cold water				
Fresh hot water				

**Post lab questions:** Use the “Density, Temperature, and Salinity Information” sheet to help answer the following questions.

1. Using the term density, explain how a bag of salt water can sink in a plastic container of salt water. Where might this occur in the ocean?
2. If the temperature of the liquid in a bag and the liquid in a plastic container were the same, under what conditions would the bag float? Where might this occur in nature?
3. Would fresh water flowing into the ocean sink or float on top of seawater? Explain your reasoning.
4. How might you use what you have learned in this activity to help explain the formation of layers in large bodies of water like lakes or the ocean?