

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

## Measuring Water Samples

*For Your Sample: Record the information requested in the table below.*

*For Partner's Sample: Copy the information your partner recorded and measured to fill out this table.*

Water Sample Description (circle)	Water Color	Mass of Empty Beaker (Listed on glass) (g)	Total Mass of Beaker and Water Sample (g)	Volume of Water Sample (mL)	Temperature (°C)	Conductivity ( $\mu\text{S}/\text{cm}$ )
Your Sample:  Hot / Cold  Fresh / Salt						
Partner's Sample:  Hot / Cold  Fresh / Salt						

1. What do you hypothesize will happen when you perform the experiment in the density tank with your sample, and your partner's sample?
  
  
  
  
  
  
  
  
  
  
2. Record your observations of the density tank: write at least one sentence about what you observed happen within your density tank.

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**Calculating Water Density**

Use the data you recorded, to support your observations. Perform the calculations below, then explain those observations with the results of these calculations.

## 3. Your Sample:

$$\frac{\text{g}}{\text{Total Mass of Beaker and Water Sample}} - \frac{\text{g}}{\text{Mass of Empty Beaker}} = \frac{\text{g}}{\text{Mass of Water Sample}}$$

$$\frac{\text{g}}{\text{Mass of Water Sample}} / \frac{\text{mL}}{\text{Volume of Water Sample}} = \frac{\text{g/mL}}{\text{Density of Water Sample}}$$

Fill in the table using your calculation, and your partner's.

Water Sample	Water Color	Density of Water Sample
Your Sample:		
Partner's Sample:		

4. Explain why you think your water samples behaved in your density tank the way they did, use your calculations to support your argument.

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## Comparing Water Properties

Use the data you recorded, to compare the properties of yours and your partner's samples. Perform the calculations below, and then answer the questions.

### 1. Calculating Salinity:

$$\frac{\text{Your Sample's Conductivity}}{\text{Your Sample's Conductivity}} (\mu\text{S/cm}) \times 0.00064 \text{ Conversion Factor} = \frac{\text{PPT}}{\text{Salinity of Your Sample}}$$

$$\frac{\text{Partner's Sample Conductivity}}{\text{Partner's Sample Conductivity}} (\mu\text{S/cm}) \times 0.00064 \text{ Conversion Factor} = \frac{\text{PPT}}{\text{Salinity of Partner's Sample}}$$

### 2. Salinity Differences

Calculate the difference in Salinity values between Your Sample, and Partner's Sample. To make the math cleaner, put the largest value from the calculations above on the first blank.

$$\frac{\text{Larger Salinity Value}}{\text{Larger Salinity Value}} \text{ PPT} - \frac{\text{Smaller Salinity Value}}{\text{Smaller Salinity Value}} \text{ PPT} = \frac{\text{Salinity Difference}}{\text{Salinity Difference}} \text{ PPT}$$

### 3. Temperature Differences

Calculate the difference in Temperature values between Your Sample, and Partner's Sample. To make the math cleaner, put the largest measured value on the first blank.

$$\frac{\text{Larger Temperature Value}}{\text{Larger Temperature Value}} \text{ } ^\circ\text{C} - \frac{\text{Smaller Temperature Value}}{\text{Smaller Temperature Value}} \text{ } ^\circ\text{C} = \frac{\text{Temperature Difference}}{\text{Temperature Difference}} \text{ } ^\circ\text{C}$$

Water Sample	Temperature of Water Sample	Temperature Difference	Salinity of Water Sample	Salinity Difference	Density of Water Sample
Your Sample:					
Partner's Sample:					

4. Which water property (Salinity or Temperature) appears to influence density the most? Use your data to support your answer.