

Learning Target: I can plan and carry out investigations to determine the role of cellular transport (e.g., active, passive, and osmosis) in maintaining homeostasis. (Proficient)

### Egg Osmosis Lab

- Learning Targets**
1. I will be able to calculate the density of liquids when given the means to do so.
  2. I will be able to demonstrate how liquids separate based upon density.

**Materials** - 2 eggs - 2 200 mL beakers - Vinegar - mass scale - tap water - salt  
- tape measure

### Directions

1. Get one beaker and put both of your eggs in it.
2. Pour the vinegar into the beaker until it completely covers the eggs (a small part of the top egg may still be showing but it's fine). Let the eggs sit for 2 days.
3. Remove the eggs from the vinegar and pour the vinegar into the sink. Remove any remains of the egg shell by washing the eggs under low water.
4. Take each egg and measure the circumference (waist) of the egg in centimeters. Record your data.
5. Take a beaker and put it on top of the mass scale and press tare which will set the mass to 0 g. Next place one of the eggs inside of it and write down the mass of the egg in your data table. Get another beaker for the second egg and repeat the process.
6. Now put egg A in a hypotonic solution by pouring tap water over the egg until it is completely covered with water. Put egg B in a hypertonic solution by pouring a mixture of salt water over it until it is completely covered. Make the salt water solution by adding two teaspoons of salt to 200 mL of water. Let the eggs sit overnight.
7. Take each egg and measure the circumference (waist) of the egg in centimeters. Record your data.
8. Take each egg out of it's beaker and mass the eggs again like you did in step 4. Record your data.

Egg	Liquid used – X axis	Circumference in cm		Weight in grams – Y axis		Percent weight change – New mass/Original mass = % change
		Before soak	After soak	Before soak	After soak	
Egg A	Tap Water					
Egg B	Salt Water					

Learning Target: I can plan and carry out investigations to determine the role of cellular transport (e.g., active, passive, and osmosis) in maintaining homeostasis. (Proficient)

**Analysis Questions**

1. What liquid caused the egg to swell? \_\_\_\_\_
2. What liquid caused the egg to shrink? \_\_\_\_\_
3. What process caused the egg to swell? Explain IN DETAIL WHY THIS OCCURRED.
4. What process caused the egg to shrink? EXPLAIN IN DETAIL WHY THIS OCCURRED.

**Graph preparation and Directions:**

1. The name of your independent variable is \_\_\_\_\_ and will be placed on the \_\_\_\_ axis. The name of the dependent variable is \_\_\_\_\_ and will be placed on the \_\_\_\_\_ axis.
2. The title of the graph should include the name of both the independent and dependent variable.
3. Write down a name for your graph.
4. What type of graph should you use to represent your data?
5. Create a graph to represent your data. Make sure to label both axis, to include a title, to fill as much of the graph paper as possible, evenly space the intervals, and to label each bar with the type of liquid that the egg soaked in.
