

# Egg Osmosis and Diffusion Experiment

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

1. State the question:
2. Form your hypothesis:
3. Research: Refer to page 106-109 in your book on Passive Transport.
4. List: Independent Variable, Dependent Variable, Control
5. List materials:
  - a. Fresh eggs
  - b. Water in a tub or bucket
  - c. Syrup (sugar) in a tub or bucket
  - d. Vinegar in a tub or bucket
  - e. Electronic balance
  - f. Paper towels
6. Step by Step Procedures:
  - a. Day one: Measure in grams the mass of the egg with the shell on it that will be placed in the vinegar. The egg will be placed in the vinegar by Mr. Hanson so they can soak for 48 hours. Record the mass of the egg in the data table.
  - b. Day two: Remove the egg very carefully from the vinegar solution and let it sit on one paper towel sheet and dap off the vinegar from the egg carefully so it does not burst. Record observations of what happened to the egg in the vinegar solution (what does it look like, etc.). Measure in grams the mass of the egg and record in the data table. Place the egg in the syrup solution in the large tub or bucket and make sure it is immersed. It will stay there for 48 hours. Mr. Hanson's egg will remain in the vinegar and you will need to record its mass and observations in Table 2.
  - c. Day three: Remove the egg very carefully from the syrup solution and let sit on one paper towel sheet and dap off the syrup from the egg carefully so it does not burst. Record observations of what happened to the egg in the syrup solution (what does it look like, etc.). Measure in grams the mass of the egg and record in the data table. Place the egg in the water solution in the large tub or bucket and make sure it is

immersed. It will stay there for 48 hours. Record the mass and observations of Mr. Hanson's egg in the vinegar in Table 2.

- d. Day four: Remove the egg very carefully from the water solution and let sit on one paper towel sheet and dap off the water from the egg carefully so it does not burst. Record observations of what happened to the egg in the water solution (what does it look like, etc.). Measure in grams the mass of the egg and record in the data table. Record the mass and observations of Mr. Hanson's egg in the vinegar in Table 2

7. Data table:

**Table 1: Egg Data**

<b>Solution</b>	<b>Egg mass before added into the solution (g)</b>	<b>Egg mass after added into the solution (g)</b>	<b>Observations</b>
<b>Vinegar</b>			
<b>Syrup</b>			
<b>Water</b>			

**Table 2: Mr. Hanson's Egg Mass in Vinegar Over Time (control egg)**

<b>Day</b>	<b>Egg Mass (g)</b>	<b>What Solution</b>	<b>Observations</b>
<b>1</b>		<b>Vinegar</b>	
<b>2</b>		<b>Vinegar</b>	
<b>3</b>		<b>Vinegar</b>	
<b>4</b>		<b>Vinegar</b>	

**Table 3: Mr. Hanson's Egg Mass in Water Over Time (control egg)**

<b>Day</b>	<b>Egg Mass (g)</b>	<b>What Solution</b>	<b>Observations</b>
<b>1</b>		<b>Water</b>	
<b>2</b>		<b>Water</b>	
<b>3</b>		<b>Water</b>	
<b>4</b>		<b>Water</b>	

**Table 4: Mr. Hanson's Egg Mass in Syrup Over Time (control egg)**

<b>Day</b>	<b>Egg Mass (g)</b>	<b>What Solution</b>	<b>Observations</b>
<b>1</b>		<b>Syrup</b>	
<b>2</b>		<b>Syrup</b>	
<b>3</b>		<b>Syrup</b>	
<b>4</b>		<b>Syrup</b>	

**8. Analyze your Data:**

- a. What happened to the eggs mass when it was placed in the vinegar overnight on day two? What type of Passive transport occurred?
- b. What happened to the eggs mass when it was placed in the syrup overnight on day three? What type of Passive Transport occurred?
- c. What happened to the eggs mass when it was placed in water overnight on day 4? What type of Passive Transport occurred?

**9. Make Conclusions:**

- a. Summarize what you learned in the experiment by writing at least two paragraphs about osmosis and diffusion in this experiment. Explain what happened and how osmosis and diffusion worked with your egg.