



## ***Lab: Observing Osmosis- The Gummy Bear Lab***

**Goal:** In this activity, you will investigate the affect of water on objects, using gummy bears.

**Question:** What effect, if any, does soaking Gummy Bear in water have on the size of the candy?

1. Read the whole lab

2. **Hypothesis:**

If:

Then:

Because:

3. Design a data-collection table on a piece of binder paper.

- Get it approved by the teacher and include the final version here:

4. Procedure:

- a. Label your beaker with your names (on tape)
- b. Fill in your data table with the **height** and **weight** of your gummy bear.
- c. Record descriptive **observations** about the candy bear.
- d. Put your candy bear in a container with water covering the bear and set the container aside until the next day.
- e. After the candy bear has been in the water overnight, gently take it out of the water and pat it dry. Be very careful because the candy is now extremely breakable.
- f. Fill in your data table with the height, width, mass, and descriptive observations.

4. Calculate the following percent changes in the size of the candy and record in your notebook:

Percent change = (After soaking measurement - Before soaking measurement / Before soaking) x 100

% change in height

\_\_\_\_\_ %

\_\_\_\_\_ = ( \_\_\_\_\_ - \_\_\_\_\_ / \_\_\_\_\_ ) x 100

% change in width

\_\_\_\_\_ %

\_\_\_\_\_ = ( \_\_\_\_\_ - \_\_\_\_\_ / \_\_\_\_\_ ) x 100

% change in mass

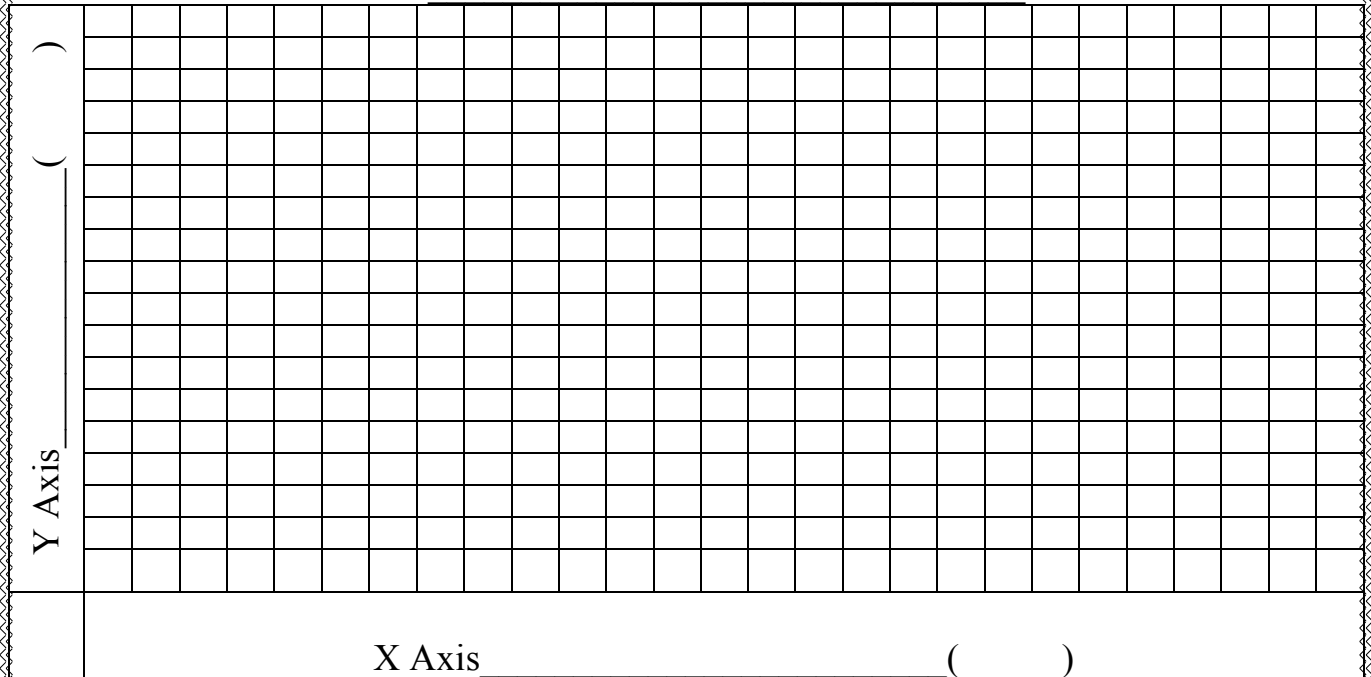
\_\_\_\_\_ %

\_\_\_\_\_ = ( \_\_\_\_\_ - \_\_\_\_\_ / \_\_\_\_\_ ) x 100

\*\*Make sure to label your answer with correct units

5. Graph the percent changes on a bar graph. You may use graph paper and cut and paste the graph into your science notebook. Remember to title and label both axes on your graph.

Title: \_\_\_\_\_



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6. Look over the following information and use the vocabulary words to answer the questions below.
- **Concentration Gradient:** Molecules are in constant motion and tend to move from areas of higher concentrations to lesser concentrations.
  - **Diffusion** is defined as the movement of molecules from an area of high concentration to an area of low concentration.
  - The diffusion of **water molecules** through a selectively permeable membrane is known as **osmosis**.
  - **Selectively permeable** means that some molecules can move through the membrane while others cannot.
  - Movement through membranes is called **transport**.
  - Diffusion and osmosis are **passive** forms of transport; this means that they do not need energy to move from areas of high concentration to areas of low concentration.
  - **Active transport** requires energy to transport molecules from low concentration to high concentration.

7. **Questions:**

- a. What happened to the candy after soaking in water overnight?
- b. Why did you get these results? *Explain and use at least 3 of the key words listed above*
- c. What do you think would happen to the candy if you let it soak in a different solution? Explain your answer. **Set up the experiment, including taking the initial measurements and adding another data table in your notebook.**
- d. Write a scientific explanation that states the results of your investigation. Include a claim, evidence, and reasoning.
- e. List any questions you still have.
- f. Why do you think it reacted the way it did? What other solutions might be interesting to try putting a gummy bear in?

8. After the gummy bear has spent the night in your solution water, fill out your data table.

