Sci 8 **Gummy Bear and Osmosis Lab**  Name:

Partner:

**Question:** How does tonicity affect a Gummy Bear?

**Hypothesis A:** If a Gummy Bear is placed in a solution containing only water then water will flow \_\_\_\_\_\_\_\_\_\_ the gummy bear because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hypothesis B**: If a Gummy Bear is placed in a solution containing salt water then water will flow \_\_\_\_\_\_\_\_\_\_ the gummy bear because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

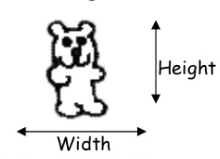
Independent Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Control Variables: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials:** gummy bears, tap water, salt, beakers, ruler, balance, spoon

**Procedure:**

DAY 1

1. Obtain 2 Gummy Bears of the SAME colour. Measure length, width, and depth of each. Record your measurements in …
2. Measure mass of each gummy bear and record mass in the data table.
3. Obtain two 100ml beakers. Label one “tap water”, and the other “salt water”.
4. Label both beakers with your group name and block number.
5. Add 80ml tap water to both two beakers. Make a salt solution by adding …..spoonfuls of salt into the water of the “salt water” beaker.
6. Place ONE Gummy Bear in EACH beaker. Set aside.

DAY 2

1. Observe each gummy bear in the beakers. Record your observations.
2. Carefully spoon out each bear and measure length and width. Record measurements in data table.
3. Calculate percent change in volume and mass of each gummy.
4. Clean up and put everything away.

**Day 1 Observations:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gummy | | Length x Width x Height (cm) | Volume | Mass (g) |
| 1 | Tap Water |  |  |  |
| 2 | Salt Water |  |  |  |

**Day 2 Observations:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Gummy | | Observations (Describe what you see) | Length x Width x Height (cm) | Volume | Mass (g) |
| 1 | Tap Water |  |  |  |  |
| 2 | Salt Water |  |  |  |  |

**Calculate Percent change in volume**:

|  |  |  |
| --- | --- | --- |
| Gummy | | (Day 2 volume – Day 1 volume) X 100 = % change in Volume  Day 1 volume |
| 1 | Tap Water |  |
| 2 | Salt Water |  |

**Calculate % Change in Mass**

|  |  |  |
| --- | --- | --- |
| Gummy | | (Day 2 Mass – Day 1 Mass) X 100 = % change in Mass  Day 1 Mass |
| 1 | Tap Water |  |
| 2 | Salt Water |  |

**Analysis:**

1. What happened to the Gummy that was soaked in tap water?
2. Using terms like concentration and concept of tonicity explain WHY this happened.
3. What happened to the Gummy Beak that was soaked in salt water?
4. Using terms like concentration and concept of tonicity explain WHY this happened.
5. What do you think would happen to the Salt Water Gummy bear if it were placed in tap water overnight? Explain your reasoning.
6. What do you think would happen to the tap water Gummy if you placed it in salt water?
7. Why was it necessary to record measurements of your Gummy Bears before beginning the experiment?
8. What challenges did you face in this experiment?
9. Summarize what you learned from this experiment.