**Diffusion Lab**

**Goal:** To create a hypertonic, hypotonic, and isotonic environment for our “cells” (gummy bears) and evaluate the amount of diffusion in each environment.

**Supplies**:

|  |  |  |
| --- | --- | --- |
| Gummy Bears | Sprite | Salt |
| Bowls | Water | Digital scales |
| Syrup | Sugar | Timers (on iPads and iPhones) |

**Set up:**

**BONUS:** figure out how to force the water to move back out of your cell. Your evidence will be a decrease in mass.

**Data:** Must have data in at least two of the following forms: bar graphs, line graphs, stem and leaf plots, circle graphs, histograms, box and whisker plots, scatter plots, cumulative frequency (ogive) graphs.

**Data Analysis:**

**Student Opinion:**

**Probing Questions:**

1. How do you think sports drink companies can use this type of experiment to improve their products?
2. How does this lab reflect cells’ needs for adaptations?
3. Evaluate how the structure of a cell’s plasma membrane allows the cell to control diffusion and osmosis rates?
4. Predict what would happen to a cell if left in a hypotonic environment for a prolonged period of time.
5. If you had to redo this lab with a different “cell” (not gummy bears), what item(s) would you use to represent a cell and why?

Rubric:

|  |  |  |
| --- | --- | --- |
| Topic | Pts Available | Pts Earned |
| Goals | 2 |  |
| Supplies | 2 |  |
| Set Up | 2 |  |
| Data table/ graph | 5 |  |
| Data Analysis | 5 |  |
| Final Thoughts | 5 |  |
| Probing ? | 5 |  |
| Total | 26 |  |