

LAB REPORT: OSMOSIS AND DIFFUSION

● Analysis of the effects of aqueous sucrose solutions with different molarities on the mass of potato cubes. How are the different concentrations of sucrose going to affect the masses of the potatoes? In this lab we're analyzing the effects of osmosis and diffusion. Osmosis is the process by which molecules of a solvent pass from a less concentrated solution to a more concentrated, to equalize the concentrations of both solutions. Diffusion is similar, only in this case molecules of the solute pass from a highly concentrated solution to a less concentrated solution to create equilibrium. Both osmosis and diffusion are active transport of ions or molecules across a cell membrane, which means that energy is required for both of these processes.

● If the hypothesis is correct, the masses of all potato cubes are going to decrease, except for the mass of the potato cube in distilled water, which is going to increase.

● Materials:

- sucrose
- distilled water
- potatoes
- knives
- beakers
- spoons
- forceps
- mass scale
- graduated cylinder
- thermometer
- paper towels

● Procedure: first, we calculated the mass of sucrose we need to add in 100ml of distilled water to create solutions with different molarities. For 0.2M that was 6.846g, for 0.4M it was 13.692g, for 0.6M it was 20.538g, for 0.8M it was 27.384g, and for 1M the mass of sucrose per 100ml distilled water was 34.23 grams. Then we took 6 beakers and labeled them (5 with the different molarities and 1 as distilled water), measuring the correct amounts of sucrose on a mass scale and adding them in the right beakers. After that, we used a graduated cylinder to measure 100ml distilled water for each beaker and mixed it with spoons until the sugar completely dissolved in the water. We cut potato cubes, each with a mass around 5 grams, and submerged them in the solutions. The room temperature was 27 degrees Celsius. We waited for 30 minutes, then took the potato cubes out of the