

# Demonstration of osmosis in potato essay



**ASSIGN  
BUSTER**

Demonstrating Osmosis in Potato Conclusion The data we had did not support the definition of Osmosis, Osmosis is the diffusion of water through a partially permeable membrane from a region of lower solute concentration to a region of higher solute concentration; the data we collected did not seem to fit into this. The potato chips were suppose to lose more mass in the higher concentrated solution as the water from the potato chip will flow out to the higher concentrated solution as the water inside the potato has a lower solute concentration but this did not happen in our experiment. The results did not seem to match with the meaning of Osmosis, so we had to use the data given to us by Mrs. Walters.

By using the new data and converting it into a graph we can see that the mass of the potato decreases when the concentration of the sucrose solution increases. By looking at Mrs. Walters result we can know that a hypertonic environment would have been created if the potatoes were left overnight on the test tubes because the water was flowing outside from the cell which resulted into its losing its mass. Evaluation I will begin by ranking the errors we had in this experiment. No repetition, Condition of the potatoes, Electronic balance, and Temperature.

No repetitions I think this was our major flaw in this experiment of not repeating the experiment. Repetition would have given us a more accurate and reliable data to support our argument on Osmosis. We could not repeat our experiment because of lack of time. Repetition is essential for scientist because if Mrs. Walters was not there then we would have used the wrong data; it was her who pointed out that our data was incorrect. So an

improvement to this is if we do a experiment next time we should at least repeat our experiment 3 times.

Condition of the potatoes Our experiment was not successful because of the potatoes we used in the experiment. The potatoes were frozen, so this could have an effect in our experiment. When something is frozen then it expands the size of the material. But in this case this might have ruptured the cell wall of the cell; this might have interfered with the process of Osmosis giving us unreliable data.

Also the potatoes were wet and squishy, we had to make all the chips same size and it was not possible to do that with a potato in that condition. So we used different potatoes to cut our chips, but still we didn't get the shapes and sizes accurate. An improvement to this would bet to use fresh and unfrozen potatoes so we get more reliable and accurate data. Electronic Balance The electronic balance we used was only to one decimal places but the values could have been bigger than this, which could have impacted the result we got. So next time we should use a balance which has a bigger value than this.

Temperature Temperature should have been controlled on the sucrose solution because it might have had an effect in the process of Osmosis. The process of Osmosis is quicker in a higher temperature compared to lower temperature. We left the potatoes in different temperature condition as well, when we were in class the AC was on but at night time the AC was switched off this might have an effect on our experiment. An improvement to this

would be using a thermometer before doing the experiment and also keeping the test tube somewhere where the temperature is controlled.

Improvement for further experiment Keep the temperature controlled Use fresh potatoes Right equipment A different experiment to this can be seeing if heat affects the process of osmosis. Or we can use salt solution instead of sugar solution and see the difference.