

Prediction: I think that the potato will absorb water making it heavier, because of diffusion this is where the movement of particles go from a region of high concentration to a region of low concentration along a concentration gradient.

The potato cannot gain as much water in a beaker with 80 % sugar solution and 20% water than a beaker with 20% water and 80% sugar solution. This all adds up to what the molarity is equal too, and that the water in the beaker is at a higher concentration and the space inside the potato is at a low concentration and the water is at a high concentration, via osmosis the potato moves from a low concentration to a high concentration along a concentration gradient. So the cells of the potato become turgid and press up against the cell wall (like a balloon inside a box!).

The diffusion of water goes from a dilute solution to a more concentrated solution through a partially permeable membrane.

Plan:

Fair testing: I will change the molarity in the eleven beakers from 0% sugar solution 100% water to 100% sugar solution 0% water. I won't change the total amount of solution and water in each beaker therefore the total mass cannot vary. I will measure the amount of sugar solution and water that goes into each beaker at eye level. (The molarity). I will measure these with a measuring cylinder in millilitres cubed. I will use the same weighing scales in case of deviance in weight. And I will repeat the experiment three times for each of the eleven molarities. We used two measuring cylinders one for the sugar solution and one for the water, to avoid adding unnecessary water into the beakers or sugar solution. We used a potato disk cutter to keep the shape of the potato slices the same.