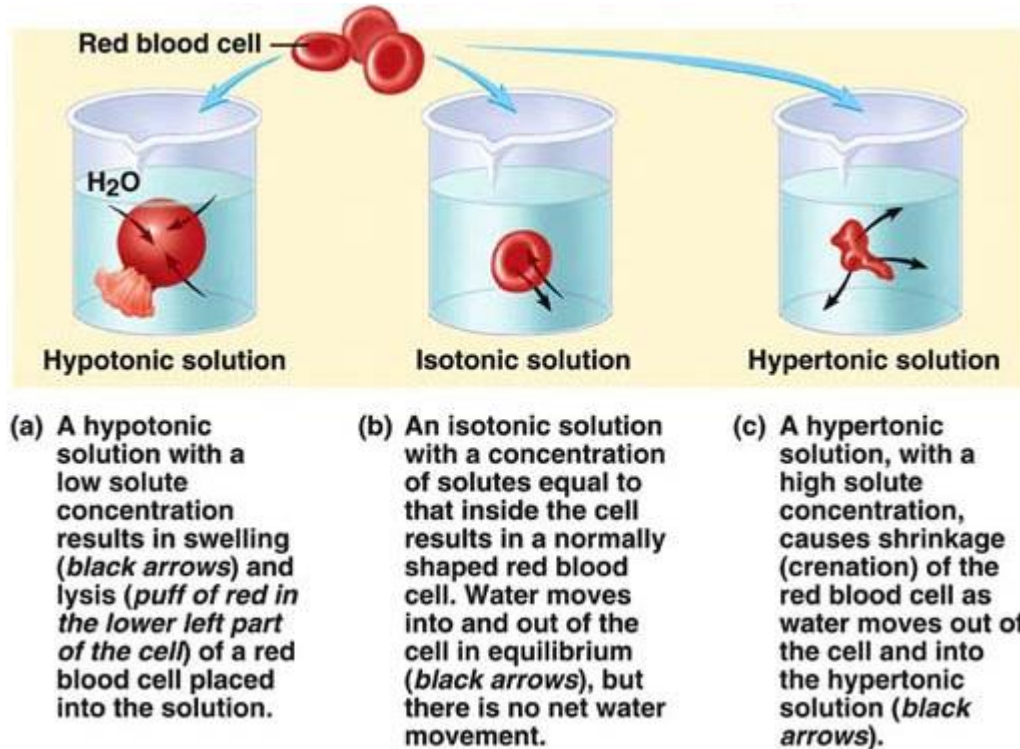


Background:

In our biology classes, we learned that the rate of solute diffusion is directly influenced by the concentration gradient of that solute across the membrane. During this activity, **we will examine if the rate of solvent diffusion is influenced by the concentration gradient of that solvent across a cell membrane.** As always in biology, the solvent will be water.

Recall what we have learned about **osmosis**:



Procedures: Day 1

1. Label your 100mL beaker with your assigned sucrose molarity using labelling tape.
2. Pour 80 – 100mL of your assigned solution into your beaker.
3. Using a borer, obtain 4 skinless potato cores.
4. Determine **the total mass of the 4 cores**. Record this initial mass in the data table on the next page.
5. Place the 4 potato cores into your labelled beaker that now contains your assigned sucrose solution.
6. Cover your beaker with Parafilm to prevent evaporation.
7. Let this stand overnight with the other beakers from our class.

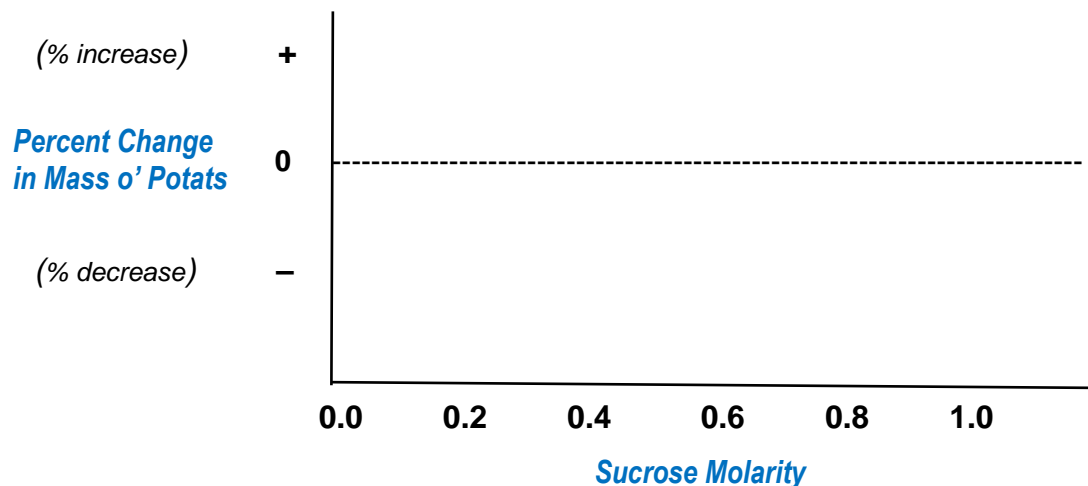
Procedures: Day 2

8. Remove the potato cores from your assigned beaker. Gently blot them dry using a paper towel.
9. Determine the total mass of the 4 cores. Record this final mass in the data table on the next page.
10. Calculate the **percent change in mass**: $\frac{\text{final mass} - \text{initial mass}}{\text{initial mass}} \times 100$
11. Record this in our class data table.

Data Table: ***The Percent Change in Mass as a Result of Osmosis with Potats***

<i>Molarity o' Sucrose Solution</i>	<i>Initial Mass o' Potat Cores</i>	<i>Final Mass o' Potat Cores</i>	<i>Percent Change in Mass o' Potat Cores (class data)</i>
0.0 Molar Sucrose			
0.2 Molar Sucrose			
0.4 Molar Sucrose			
0.6 Molar Sucrose			
0.8 Molar Sucrose			
1.0 Molar Sucrose			

Graph: ***The Percent Change in Mass of Potats as a Result of Osmosis***



Data Analysis Questions:

1. Label the portion of the graph that represents ***hypertonic potats in a hypotonic solution***. Summarize how this area is determined.
2. Label the portion of the graph that represents ***hypotonic potats in a hypertonic solution***. Summarize how this area is determined.
3. Label the point on the X axis that indicates the sucrose molarity that is ***isotonic*** with the potat cells. Summarize how this point is determined.