

POTATO LAB

Answer fully on separate paper and attach to this page.

Instructions:

1. Take a potato and bore out **3 thin strips**. Accurately measure the **initial length** of each strip and record it in the **table**.
2. Obtain 3 clean, dry test tubes and add an **equal volume** of the following solutions so that each strip is completely covered:
 - a) no salt
 - b) medium salt concentration
 - c) high salt concentration
3. Allow the strips to remain in solution for at least **20 minutes** and then remove them carefully and measure the length of each strip. Record the **final length** of each strip in the **table**. Also **feel** and try to **bend** the strips and record your observations in the **table**.

Observations: Please use computer for table and graph if possible

1. Prepare a **table** like the one below.

	Initial Length	Final Length	Feel / Bend
No Salt			
Medium Salt			
High Salt			

2. Prepare a **chart** (ie. a bar chart or other) to graphically illustrate the **initial and final length** vs. the **type of solution** used. Include all appropriate labels and a title.

Questions: Please use full sentences

1. Discuss the **net movement of water** into or out of each strip (assume salt cannot move), ie. did more water enter or exit and how this affected the **feel or bendability** of each strip.
2. Use the terms **hypotonic** and **hypertonic** to classify each solution and explain why the water moved as it did for each strip. (Depending on how much salt was added, one solution may have been **isotonic**. If so, answer as above. Otherwise classify it as **hypotonic** or **hypertonic** and answer as above.)
3. Using the term **osmosis** and a selection of either **hypotonic**, **isotonic**, or **hypertonic**, explain how you could revive a wilted flower.
4. What **kind of solution** must blood be if red blood cells are to remain healthy? Explain.
5. How would **increasing the temperature** of the **hypertonic** solution affect osmosis for the potato strip? Explain how this works.
6. Explain how rinsing your mouth with **salt water** may help to reduce swelling of the gums. Use appropriate terms including osmosis, hypo-, hyper-, or isotonic.