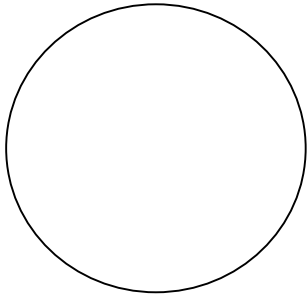


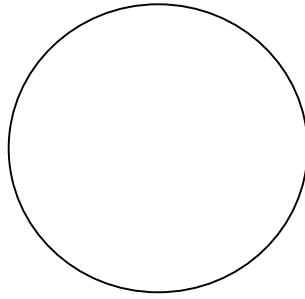
PLASMOLYSIS IN ELODEA CELLS

Osmosis is the diffusion of water across a membrane from an area of high water concentration to an area of low water concentration. This movement of water may be harmful to cells. A hypertonic solution can result in the plasmolysis of a cell when the water in a living cell osmoses out of the cell and the cell becomes dehydrated. Most cells live in an isotonic solution where the movement of water is constant into and out of the cell (equilibrium). When a cell is in a hypotonic solution, water osmoses into the cell. This can cause lysis of the cell as the cell will swell and sometimes burst. A plant cell possesses a cell wall which helps prevent lysis in the presence of a hypotonic solution, instead the turgor pressure increases and helps move water through the plant. In this investigation the aquarium water is about 1% salt and 99% water, an *Elodea* cell normally contains 1% salt and 99% water on the inside, the salt water solution is 6% salt and 94% water, and distilled water is 100% water.

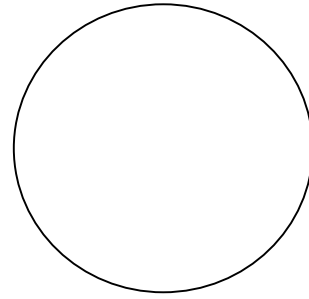
Record your observations and sketch the following:



Normal *Elodea* Cell



Plasmolyzed *Elodea*
(with 6% NaCl)



Rehydrated *Elodea*
(with Distilled Water)

Observations:

Normal *Elodea* Cell: _____

Plasmolyzed *Elodea* Cell: _____

Rehydrated *Elodea* Cell: _____

Questions:

1) Compare the location of chloroplasts in normal and plasmolyzed cells. _____

2) What was the cause for the change in the location of the chloroplasts in the two solutions? _____

3) Did the *Elodea* cell change shape? Why or why not? _____

4) Describe the location of the chloroplasts when the plasmolyzed cell was flooded with distilled water? _____

5) What was the cause for the change seen with distilled water? _____
