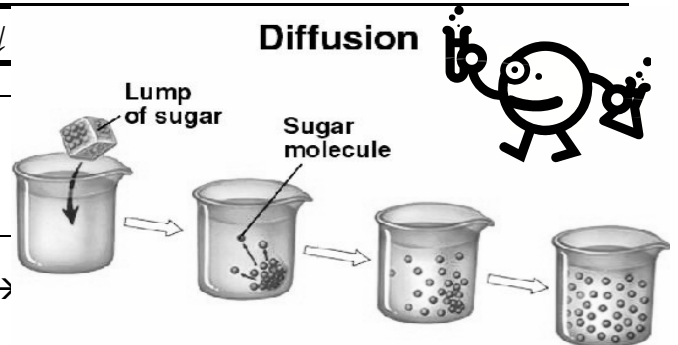


- A. Class Lab:** ____a) Those at table number 1-4 = salt; those at all other tables = water.
 ____b) A "cell membrane" divides room between tables 4-5-6 and 7-8-9.
 ____c) Check the board, or ask, "When?". MODEL **osmosis**; then **diffusion**.
 ____d) Have another student sign the you participated. _____

Work with another student. Agree as you go!

B. Diffusion is the movement of molecules from a region of **higher concentration** to a region of **lower conce** _____.

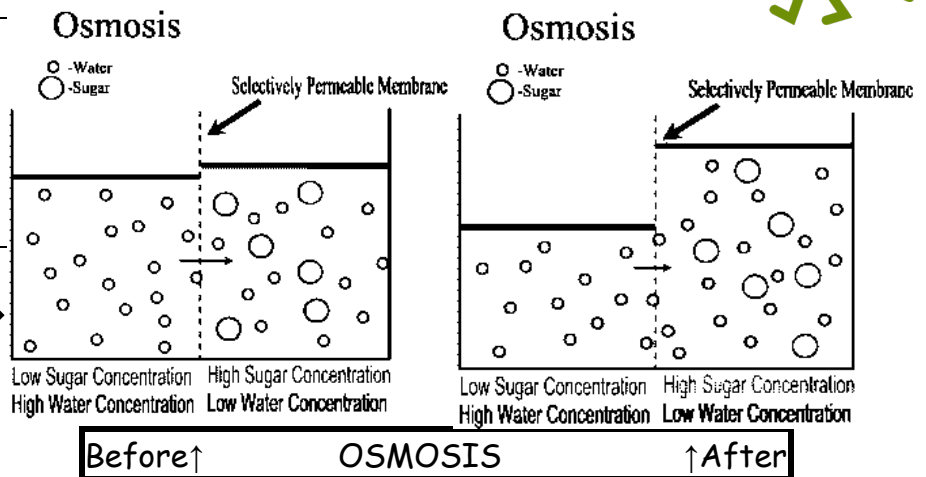


____1. Color the DIFFUSING molecules of sugar. →

____2. Diffusion happens because of random molecular motion. Molecules m____ around randomly until there is an even mixture throughout their container. Movement within a container (the container could be a cell or a room) occurs until the mixture is even throughout the container. An example is perfume _____ out in a room.

C. Osmosis is the movement of molecules from a **higher con** _____ to a **lo** _____ concentration AND across a membrane or skin.

____3. Color only the water → molecules in the drawing of OSMOSIS.



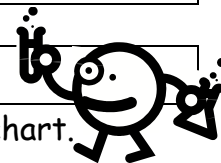
____4. Cell membranes do not allow ALL molecules to cross them. Membranes are said to be semipermeable, "selectively" or "differentially" permeable. Your filter paper was "selective" as it let water and s____ go through, but not the s____.

____5. For example, some semipermeable membranes allow water but not dissolved salt (sodium and chlorine ions) to pass through. If salt is more concentrated on one side than on the other, the **water will move across the membrane to the salt side to make things more even or equal**. The salt cannot get through, so salt has to stay. The movement process is called **osmosis**. In the above drawing the _____ moved through the m_____ to the right, and made the water level go ____.

____6. Food, water, Ox _____, Carbon D _____, and other wastes DIFFUSE around your body. When they cross a cell _____, it is OSMOSIS

Have signed by another student that agrees with your answers _____

Do your own labs.



D. Osmosis Lab: Osmosis through cell membranes.

- ___1. Obtain 3 test tubes & 3 plant pieces that will fit into the tubes. See chart.
- ___2. Obtain about $\frac{1}{2}$ tube of each liquid for osmosis. Label or keep in order in a holder.
- ___3. Measure mass(g) of each plant piece. Record in order.
- ___4. Add pieces, in order, as recorded in your chart. The liquid should cover each.
- ___5. Wait. **If** overnight, label. Include your name and period; place in correct tray.
- ___6. If time, do the Diffusion Lab below.
- ___7. After _____ minutes or overnight, measure mass again. Record any observations.
- ___8. Explain your results telling **what moved** and using the word **Osmosis**.
- ___9. Clean up. Plant material goes in the trash.

E. Diffusion Lab:

- ___10. Obtain 3 test tubes and a beaker or other holder. See Diffusion Chart below.
- ___11. Obtain close to the same amount of each of the three liquids for diffusion, leaving some room at the top of the test tube for color.
- ___12. Be ready to record the time and have all of your tubes together.
- ___13. Take all tubes to the pump and quickly add one "pump" of colored water to each. **Record time. Do not stir or shake.** Place in your beaker. Observe.
- ___14. Record time again, for each, when the color reaches the bottom of the tube. If out of time, record the time and the progress of the color.



Diffusion of Color	Cold Water	Hot Water	Salt Water		Osmosis: Plant Cells	City Water	Salt Water	Distilled Water
Start time					<u>Before:</u> mass(g)			
End Time					<u>After</u> mass(g)			
Progress					Changes			
Analysis: Use the word diffusion in a complete, descriptive, sentence that explains. :					Analysis Use the word osmosis in a complete, descriptive, sentence that explains. :			