Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_

Biology

**Cells and Cell Transport**

Go to: <http://www.glencoe.com/sites/common_assets/science/virtual_labs/E08/E08.html>

1. Click the up and down arrows in the structure/function box to find the description of the cell part you select (click on).
2. Repeat these steps to identify and label all parts of the cell.
3. Do all for plant and animal cell and then once you have finished PRINT your work.
4. Answer all journal questions and print out the journal once you are finished

Go to: <http://www.wisc-online.com/objects/ViewObject.aspx?ID=AP1903>

1. Is diffusion active or passive transport of particles across the cell membrane?
2. In the very beginning, how does the concentration of the blue particles on side A compare to that of side B?
3. What 3 things can molecules moving with kinetic energy do?
4. Net diffusion moves down the concentration gradient from areas of \_\_\_\_\_\_\_\_\_\_\_\_ concentration to areas of \_\_\_\_\_\_\_\_\_\_ concentration.
5. What is equilibrium?
6. What happens to the rate of diffusion if temp is raised?
7. What happens to the rate of diffusion if the temp is lowered?

**OSMOSIS**

**Go to- http://www.wisc-online.com/objects/index\_tj.asp?objID=AP11003**

1. What is osmosis?
2. What does the dashed line in the beaker separating the two sides represent?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Why are they assuming the large molecules will stay on their own side of the membrane?
4. Because molecules will move from one side to another to come to an equilibrium, or balance of concentration, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_moves from side B to side A, so the water level on side A goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. In living things, cells must be in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solution where water leaves and enters the cell at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. What happens to a cell in a concentrated, hypertonic environment? Click on the “View Movie” icon to find out.
7. What happens to a cell in a concentrated, hypotonic environment? Click on the “View Movie” icon to find out.

**DIFFUSION/OSMOSIS DIALYSIS BAG LAB**

**Go to- http://bioweb.wku.edu/courses/Biol114/Osmosis/Osmosis0.asp**

**\*\*Read the introductory information.**

**Click on the red circles whenever you see them in the lab, and keep clicking on each one until you have completed the information at that red circle**

1. Diffusion is the movement of particles from a region in which they are \_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a region in which they are \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Click on the red circle. In Biology, what keeps molecules concentrated, limiting disorder?
4. If for example, NaCl is dissolved in water so that the concentration is initially higher in one part of the water than the other, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ will occur so that there is a net
5. If for example, NaCl is dissolved in water so that the concentration is initially higher in one part of the water than the other, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ will occur so that there is a net equilibrium
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of NaCl from the area of \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the area of \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Why do you think the methylene blue dye molecules diffuse less than the KMnO4 purple dye?
8. Why do you think the #3 hole shows a larger ring of diffusion than the #4 hole?
9. What is active transport of molecules considered “active” and passive transport, like diffusion and osmosis, considered “passive?”
10. Click on the red circle. What is the difference between the way small and large molecules diffuse through the cell membrane?
11. Cell membranes are selectively permeable. What does this mean?
12. What is osmosis?
13. Why is special about dialysis tubing being that it is good to be used in this experiment about osmosis?

**Click on the red circle to proceed through the experiment and answer the questions below:**

1. Write out the steps of the experiment below. Be very detailed about what is being used:
2. Protein and starch are macromolecules. This means they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Draw a picture of the dialysis tubing and the beaker below with the original solutions that were put in them labeled beneath them:
4. Draw the four test tubes that have the solution from the BEAKER AFTER the experiment and label them with what they are being tested FOR:
5. Which test tubes had a positive result?
6. Draw the four test tubes that have the solution from the DIALYIS BAG AFTER the experiment and label them with what they are being tested FOR:
7. Which test tubes had a positive result?
8. Draw the two tables of results below:
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of NaCl from the area of \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the area of \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. Why do you think the methylene blue dye molecules diffuse less than the KMnO4 purple dye?
11. Why do you think the #3 hole shows a larger ring of diffusion than the #4 hole?
12. What is active transport of molecules considered “active” and passive transport, like diffusion and osmosis, considered “passive?”
13. Click on the red circle. What is the difference between the way small and large molecules diffuse through the cell membrane?
14. Cell membranes are selectively permeable. What does this mean?
15. What is osmosis?
16. Why is special about dialysis tubing being that it is good to be used in this experiment about osmosis?