Honors Biology

Cell Membrane Virtual Lab Activity Sheet

DIFFUSION

Click on the link below to see information on diffusion:

[http://www.wisc-online.com/objects/index\_tj.asp?objID=AP1903](http://www.wisc-online.com/objects/index_tj.asp?objID=AP1903%20)

\*\*\*Remember that solutes are things that are dissolved and solvents are things that do the dissolving.

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?

a.

b.

c.

1. Net diffusion moves down the concentration gradient from areas of \_\_\_\_\_\_\_\_\_\_\_\_ concentration to areas of \_\_\_\_\_\_\_\_\_\_ concentration.
2. Eventually the two sides will come to equilibrium. What is equilibrium?
3. What happens to the movement of molecules when their temperature is raised? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lowered? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Watch the video: <http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_diffusion_works.html>

After the video scroll down and take the quiz. Submit your answers. When you have the results of your quiz, signal Mrs. Mateola to verify your score - write down your score here:\_\_\_\_\_\_\_\_\_

OSMOSIS

Click on the link below to see information on osmosis: [http://www.wisc-online.com/objects/index\_tj.asp?objID=AP11003](http://www.wisc-online.com/objects/index_tj.asp?objID=AP11003%20)

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.

Watch the video:

[http://highered.mheducation.com/sites/0072495855/student\_view0/chapter2/animation\_\_how\_osmosis\_works.html](http://highered.mheducation.com/sites/0072495855/student_view0/chapter2/animation__how_osmosis_works.html%20)

After the video scroll down and take the quiz. Submit your answers. When you have the results of your quiz, signal Mr. Barnard to verify your score - write down your score here: \_\_\_\_\_\_\_\_\_

CELL HOMEOSTASIS VIRTUAL LAB

Click on <http://video.esc4.net/video/assets/Science/Biology/Gateway%20Resources/cell%20homeostasis%20virtual%20lab%20-%20activity/index.html>

\*\*Read the introductory information. Complete the lab as directed.

1. What items are you using to create the solutions needed for the experiment?
2. What do you have to do to the scale before you can pour the sugar?

Why is this important?

1. What is the first beaker used for and why?
2. What are the concentrations of beakers a – e?
3.
4.
5.
6.
7.
8. In a new tab, (if you use the same window you will have to restart the lab), google Dialysis tube, read the definition given and explain how this is able to represent a cell.
9. What is the concentration of the solution that has been placed in the dialysis tube?
10. Write the beginning and final masses of each bag in the chart below. Then calculate the change in mass, and the percent change in mass.

 **Example:**

Initial Mass= 3.2 g Final Mass = 3.4 g

Mass Difference= 3.4g – 3.2g = .2g

Percent Change in Mass = .2g = .06 x 100 = 6% increase in mass

**Practice:**

Initial Mass= 3.6 g

Final Mass = 3.2 g

Mass Difference= \_\_\_\_\_\_\_\_\_– \_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dialysis Tube | Initial Mass | Final Mass | Mass Difference | Percent Change in Mass |
| A. |  |  |  |  |
| B.  |  |  |  |  |
| C.  |  |  |  |  |
| D.  |  |  |  |  |
| E.  |  |  |  |  |

1. How long were the tubes kept in the solution?
2. Create a Graph based on the information present in this lab, either on a separate sheet of paper or using the program Excel.

Once you have completed this go to: <http://biomanbio.com/GamesandLabs/Cellgames/celldefense.html>

Complete the list of activities. When completed raise your hand so that I can see your results.