Cell Membrane and Cell Transport Webquest

Active and Passive

Part 1 – Cell Membranes

Website #1 http://www.wisc-online.com/objects/ViewObject.aspx?ID=AP1101

1. What is the basic unit of life?

2. What are two main components that make up the cell membrane?

*

*

3. What types of moleculescan EASILY go through your cell membrane or are PERMEABLE to the cell membrane?

*

*

*

4. What types of molecules CANNOT easily go through your cell membrane?

*

*

*

5. Draw the phospholipid bilayer of the cell membrane, **labeling** the hydrophylic heads and hydorphobic tails.

6. T or F: Carbohydrates also make up part of the cell membrane. What is their function? _____

_____.

Website #2 http://www.wiley.com/college/pratt/0471393878/student/animations/membrane_transport/index.html

1. T or F: Some of the metabolically important molecules your body needs in order to survive CANNOT pass through the lipid bylayer of the cell membrane.

2. The tails or interior of the cell membrane is made of a water loving(hydrophilic) or water hating(hydrophobic) molecule. _____

What is the name of this molecule? _____

3. Which part of the membrane might function to transport hydophilic or water loving substances into the cell?

_____

4. What are two reasons why a substance cannot make it through the lipid bilayer?

*

*

5. What is facilitated transport?

6. Facilitated transport always involves what part of the cell membrane?

7. In terms of energy, what is the difference between Active Transport vs. Passive Transport?

8. What is the energy used to faciliate active transport? _____

Part 2: Passive Transport

Website #1 http://programs.northlandcollege.edu/biology/Biology1111/animations/transport1.html

Part One: Choose Passive Transport

1. Define passive transport:

2. What are three types of passive transport?

*

*

*

3. Draw what a cell membrane looks like and label the two components of the cell membrane below:

4. What is the function of intergral proteins?

5. Cell membranes are said to be semi-permeable, what does that mean?

6. Define simple diffusion and ILLUSTRATE a “before” and “after” example:

7. Define a concentration gradient:

8. Identify three factors that can have an affect on the rate of diffusion:

*

*

*

9. What is meant by the term equilibrium:

10. Draw a PICTURE showing a cell that is in equilibrium:

11. Define faciliated diffusion:

12. Does facilitated diffusion take energy for the cell?

13. What molecules within the cell membrane paly a vital role in facilitated diffusion?

14. What does the word faciliate mean?

15. Define Osmosis:

16. Explain how osmosis is a unique form of diffusion:

17. Draw a situation in which a cell is in a hypotonic solution..... draw a before and after picutre to show the change in size of the cell.

Before After

18. Draw a situation in which a cell is in a hypotonic solution.... draw a before and after picture to show the change in size of a cell.

Before After

Website #2 http://www.vivo.colostate.edu/hbooks/cmb/cells/pmemb/osmosis.html Scroll down

1. What does a red blook cell look like in an isotonic solution? Draw it and explain why it would look this way.

2. What does a red blook cell look like in an hypertonic solution? Draw it and explain why it would look this way.

3. What does a red blook cell look like in an hypotonic solution? Draw it and explain why it would look this way.

Website #3 http://www.indiana.edu/~m131/lectures/fall%202013%20sixKx.pdf

1. Diffusion always goes from _____ concentration to _____ concentration and (does or does not) require energy (ATP).

2. At the beginning of the animation, where are there more particles? On which side of the membrane? _____

3. Are the particles moving in only one direction, or are they moving in both directions? _____

4. Watch the animation for 2 minutes, or unitl it reaches No Net Flow. How many particles are on each side of the membrane? _____

5. When there is No Net Flow the cell is said to reach what? _____

6. What is meant when the author states, "diffusion goes from the higher concentration to the lower concentration? Draw a picture to make your point!

Website #4 http://www.tvdsb.ca/webpages/brownt12/files/osmosis.htm

1. What happens to the cell in a hypertonic solution?

2. What happens to the cell in a hypotonic solution?

3. What happens to the cell in a isotonic solution?

Website #5 http://nhscience.lonestar.edu/biol/osotutor.html

1. Explain why food coloring particles are first condensed into a single drop, but after revisting the cup of water several minutes later, the entire cup of water is colored.

Click on ANIMAL CELL MEMBRANE TUTORIAL

Page 1 – normal functioning cell

1. The plasma is a(an) _____ solution to the solution in the red blood cell.

2. The diffusion of water (osmosis) into the cell is _____ the diffusion of water(osmosis) out of the cell.

3. The turgor pressure of the RBS is _____ zero.

4. The pressure of the inside of the cell is _____ the pressure on the outside.

Page 2 – 1.3% salt solution

1. The red blook cell can now be described as being _____.

2. The % concentration of water in the cell was _____ the % concentration of water in the salt solution.

3. Thus the net direction of osmosis was _____ the red blood cell.

4. The salt solution was _____ relative to the red blood cell.

Page 3 – Normal is distilled water

1. This red blood cell can now be described as being _____

2. The distilled water was _____ relative to the cell.

3. The cell was _____ realtive to the distilled water.

4. The direction of new osmosis wsa _____ the cell.

Part 3: ActiveTransport

Website #1 http://programs.northlandcollege.edu/biology/Biology1111/animations/transport1.html

1. Define active transport.

2. Why might a cell go through active transport?

3. What are 3 types of active transport.

*

*

*

4. What is ATP? What does ATP turn into after it is used?

5. What is an ion pump? Explain using the words consentration gradient, protein, and charge. Draw a picture in addition to your explaination!

6. What is endocytosis?

7. What are 3 types of endocytosis?

*

*

*

8. What is phagocytosis?

9. What are pseudopods?

10. What is pinocytosis?

Website #2 http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter6/animations.html

Click on Endocytosis/Exocytosis

1. Why does a cell go through endocytosis?

2. What is the difference between phagocytosis and pinocytosis?

Extra Credit

1. The website states that “single celled eukaryotic organisms” go through endocytosis. To what kingdomdo these organisms belong to? _____ (will have to research this)