

Cell Transport Web Activity

Click on each of the links in the following sections, and answer the questions. This will serve as part of your notes for this section.

After you are finished, complete the Cell Transport Assignment Check over this assignment.

A. Hypotonic, Isotonic, Hypertonic by June B. Steinberg

<http://www2.nl.edu/jste/osmosis.htm#Osmosis>

As you read through the material and play the animations, answer the following questions.

1. Define the concentration of water
2. Since water flows in the direction of its concentration gradient, that means that water will flow from _____, diffusion then is the movement of molecules from areas high concentration to areas of lower concentration.
3. What is a solution?
4. Suppose you have a cup of coffee with sugar in it. _____ is the solvent and _____ and _____ are the solutes.
5. What are the 6 factors that can influence the rate of diffusion?
6. How does temperature affect the rate of diffusion?
7. What is the order in terms of the speed of diffusion for solids, liquids and gasses?
8. The larger the molecule, the _____ it will diffuse.
9. The greater the steepness of the gradient causes
10. Define osmosis.
11. or osmosis to occur:
 - a.
 - b.
 - c.
12. What do the blue dots represent?
13. On what side of the tubes is the concentration of solute greater?
14. Water will move towards the side of the membrane where there is _____. This happens because where there is solute, there is _____.
15. There is no mechanism for the active transport of water as there is for many other substances such as
16. There are 3 possible relationships that cells can encounter when placed in a water solution:
 - a. The concentration of solute can be equal to the concentration of solute in the cells. The cell is in an
 - b. The concentration of solute can be greater than the concentration of solute in the cells. The cell is in an
 - c. The concentration of solute can be less than the concentration of solute in the cells. The cell is in an

Now push the buttons on the animations below (on the web page) and describe what is happening in each beaker by completing the following chart. You can replay this as you need to describe what is occurring.

Beaker Number	Tonicity (Hypertonic, Isotonic, or Hypotonic)	Explain what happened to the cell and why it happened
1		
2		
3		

Draw the situations that occur in solutions of differing concentrations in a **PLANT CELL** in the chart below and describe what is happening and why.

Isotonic Solution	Hypertonic Solution	Hypotonic Solution

17. What is plasmolysis?

18. Why doesn't the plant cell burst, like an animal cell?

B. Cell Membrane

<http://www.teachersdomain.org/resource/tdc02.sci.life.cell.membraneweb/>

(click on view)

19. What is the main function of the cell membrane?

20. How does the cell membrane maintain homeostasis for the cell?

21. What is another name for the cell membrane?

22. Describe the structure of the cell membrane?

23. What is the function of the ion channel?

24. What is the function of the protein pump?

C. Diffusion

http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/cells/cells3.shtml

25. What is the definition of diffusion?
26. What are two examples of diffusion in the human body?

D. Osmosis

http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/cells/cells4.shtml

27. What two things are required for osmosis to occur?
28. What does “partially permeable membrane” mean?

E. Facilitated Diffusion

<http://www.wisc-online.com/objects/ViewObject.aspx?ID=AP11103>

29. Is ATP required for facilitated diffusion?
30. What is required in order for facilitated diffusion to occur?

F. Active Transport

http://www.bbc.co.uk/schools/gcsebitesize/science/add_ocr/homeostasis/importancerev6.shtml

31. Define active transport.
32. What is the job of carrier proteins?
33. Describe an example of active transport in the human body?

G. Diffusion and Osmosis

http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/cells/osmosisact.shtml

Watch the simulation.

34. Summarize what you saw in 4-5 sentences.

H. Endocytosis

<http://www.wisc-online.com/objects/ViewObject.aspx?ID=AP11203>

35. Find and describe the three types of Endocytosis below:
 - A.
 - B.
 - C.