

Passive and Active transport Web Quest.

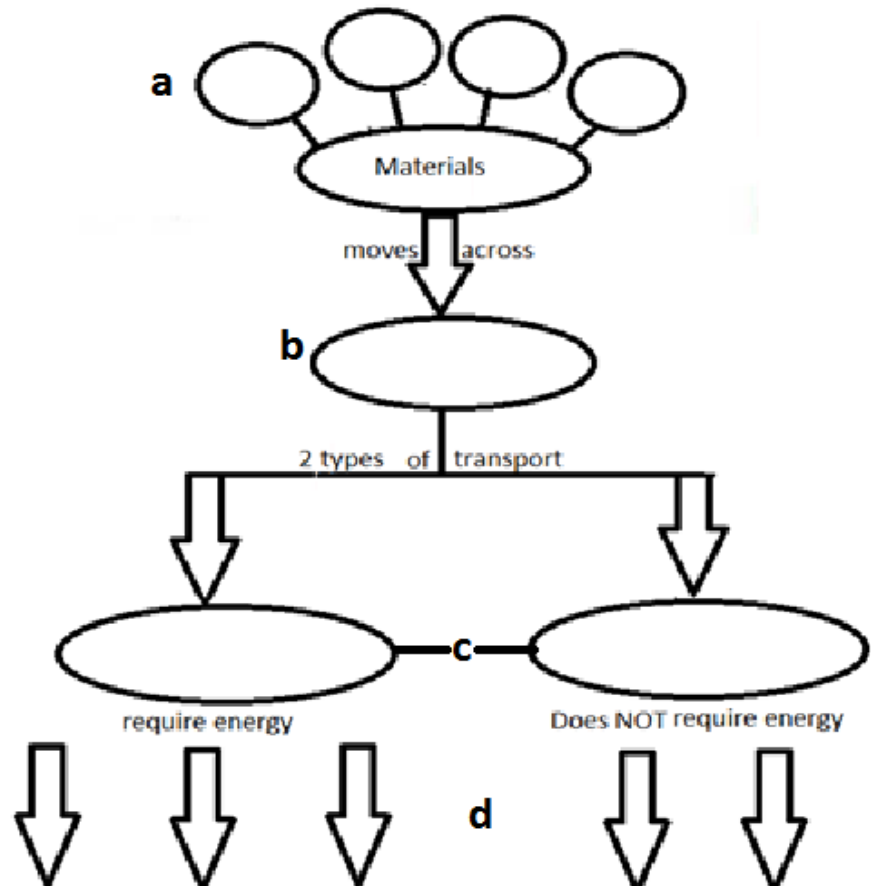
Complete the following assignment in your notebooks. All work will be completed on your own.

Define the following words and draw a quick representation of the word. You can use your online book. You can NOT use Google or any other search engine.

1. Solution
2. Diffusion
3. Selectively permeable
4. Concentration gradient
5. High concentration
6. Low concentration
7. Osmosis
8. Isotonic
9. Hypotonic
10. Hypertonic

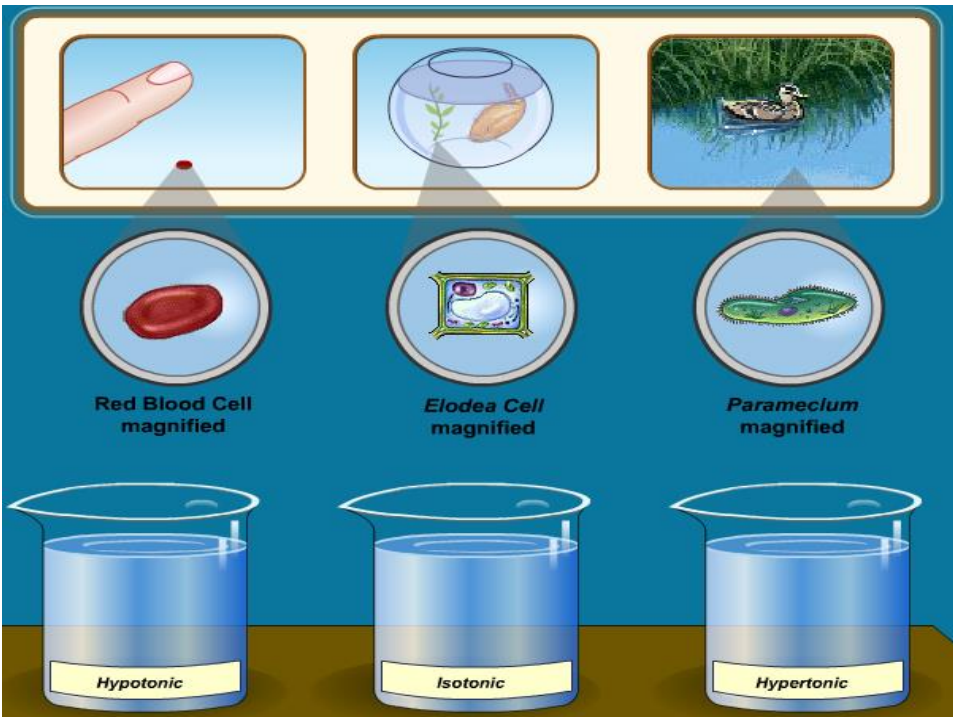
Answer the following questions. Use your book pgs. 85 – 92

11. Which cell structure protects the cell and helps it maintain homeostasis?
12. When placing a cell in solutions what is the “barrier” that solution or solutes have to cross?
13. Why is it important for materials to cross the plasma membrane?
14. Complete the following concept map



- a. List the 4 materials that move in and out of the cell.
 - b. Barrier the materials must cross.
 - c. Two types of transport. One is found on page 85 of your book and the second one is found on page 91 of your book.
 - d. Types of transport. List the 3 types of active transport and 2 types of passive transport.
15. What is the difference between passive and active transport?

Passive Transport



Instructions:

First fill out all of the hypothesis boxes, then you will complete the interactive and fill in the observations for what actually happened.

Follow the link to complete the interactive.

http://www.glencoe.com/sites/common_assets/science/virtual_labs/LS03/LS03.html

- A. You will complete an interactive to observe what happens to a red blood cell (animal), Elodea cells (plant), and a paramecium (Protista) in different solution.
- B. Draw the following table in your notebook. The table is number 16
- C. Before you complete the interactive you will fill in the hypothesis portion of the table.

Cells	Hypothesis Hypotonic	Actual results Hypotonic	Hypothesis Isotonic	Actual results Isotonic	Hypothesis Hypertonic	Actual results Hypertonic
Red blood cell (Animal)						
Elodea cell (plant)						
Paramecium (Protista)						

Based on the definitions what do you **hypothesize** will happen to the cells in the different solutions. Remember a hypothesis is an educated guess of what you believe will happen to the cell.

17. Was your hypothesis correct about the cell?
 - a. If yes, how were you able to hypothesize the correct cell response?
 - i. How did the vocabulary word (definition) help you?
 - b. If no, what part of the definition would you use to correct your hypothesis?
18. Did the all the cells have the same reactions to the solutions? Why do you believe they all had the same response? (Hint What do they have in common?)
19. What caused the cell to react this way? (How was the water moving?)
20. How did the isotonic solutions affect the cells? (In which direction was the water flowing?)

Digging deeper, Questions.

Use the link provide to answer the following questions.

http://www.abpischools.org.uk/page/modules/homeostasis_kidneys/kidneys_3.cfm?coSiteNavigation_allTopic=1

21. What causes diffusion?
22. At what conditions does diffusion take place faster?
23. Why is diffusion important? Give an example that takes place in the body.
24. When does osmosis take place?
25. What is an example of a partially permeable membrane (semipermeable membrane)?
26. Compare and contrast osmosis and diffusion (make a Venn diagram, 3 bubbles)
27. What are examples of particles or molecules that cannot pass freely through the membrane?
28. What is active transport? And why is it called “active”
29. In which direction does active transport move substances?
30. What does “against a concentration gradient mean?
31. What is active transport used for?
32. What process creates energy needed for active transport?
33. What is the energy called?

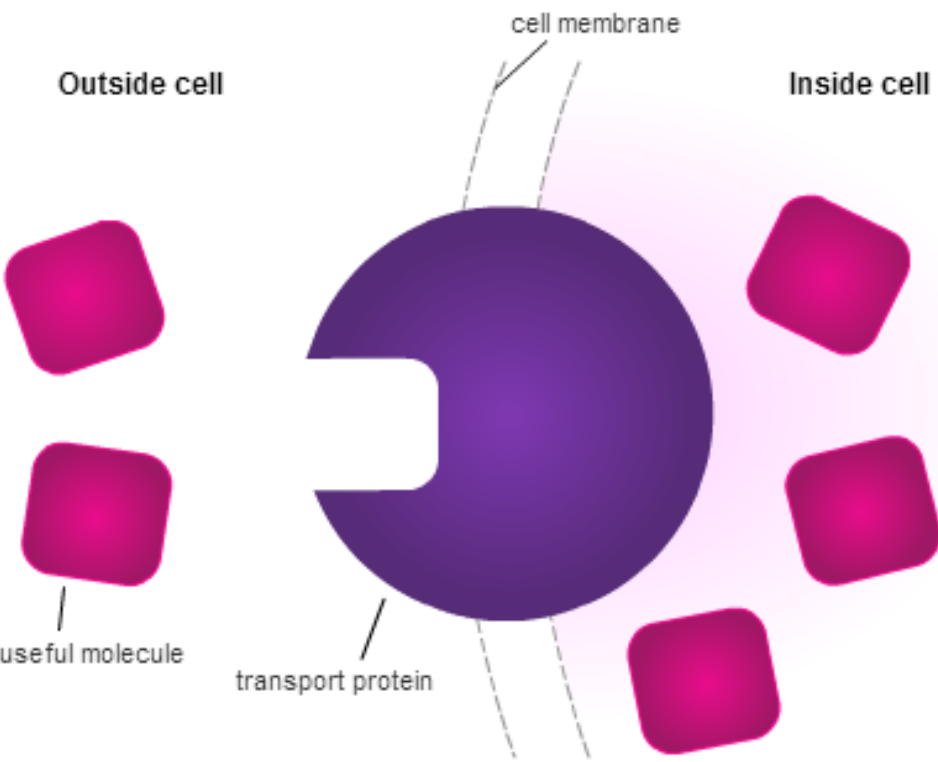
Complete the Active transport interactive that is found under the reading portion.

Diffusion Osmosis **Active Transport** Play all

Step 1

Step 2

Step 3



The diagram illustrates a cell membrane separating the 'Outside cell' from the 'Inside cell'. A 'transport protein' is embedded in the membrane. 'useful molecule's (represented by pink rounded squares) are shown being moved from the outside to the inside. The concentration of these molecules is higher inside the cell than outside. A red arrow points from the 'Active Transport' button to the diagram.

There is a higher concentration of useful molecules inside the cell than outside the cell. This means they cannot enter the cell by diffusion down a concentration gradient.

34. Click on each step so that you can read what is happening in the process.

35. In your notebook you will draw the transport protein and the molecules. Then write a summary of the process. Once you have completed your diagram you will answer the questions that follow.

36. How does the molecule enter the transport protein?

37. Before the molecules were transported into the cell, was the higher concentration of molecules inside the cell or outside?

38. How is the molecule moving? (In terms of the concentration gradient)

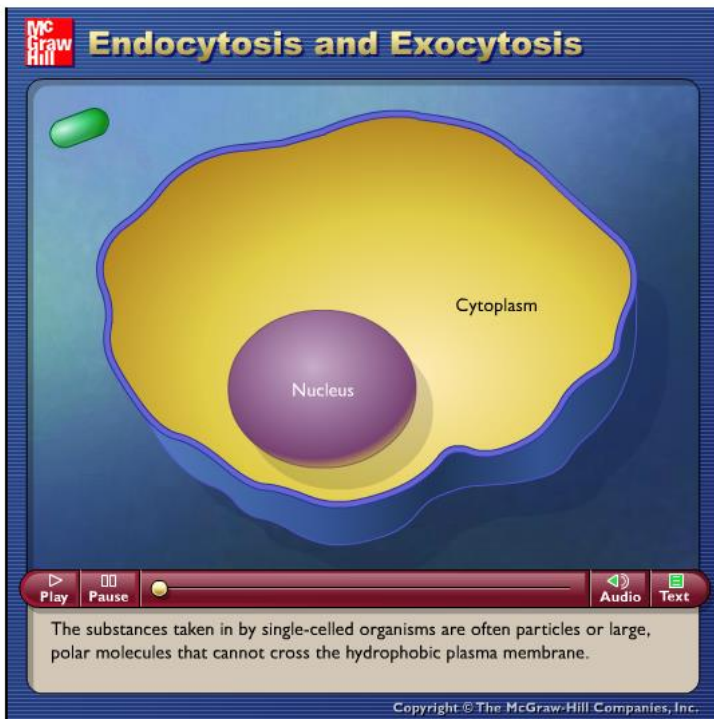
Endocytosis and Exocytosis

Use your book to define the following words and draw a picture. Do NOT use google or any other search engine.

39. Active transport
40. Endocytosis
41. Phagocytosis
42. exocytosis

Follow the link to view exocytosis and endocytosis and answer the following question.

<http://highered.mheducation.com/olcweb/cgi/pluginpop.cgi?it=swf::535::535::/site/s/dl/free/0072437316/120068/bio02.swf::Endocytosis%20and%20Exocytosis>



You should be on an interactive website that looks like the picture on the left.

You will watch the video and answer the questions that follow. You can pause, rewind, and fast word the video as needed.

43. What type of substances are moved during endocytosis and exocytosis?
44. List the 3 types of endocytosis and define them. (In which direction are the particles moving?)
 - c. Phagocytosis
 - d. Pinocytosis
 - e. Receptor-mediated endocytosis
45. What is exocytosis? (In which direction are the particles moving?)
46. What structure carries the substances in and out?

Summary of the processes.

Follow the link watch the animation and answer the questions.

<http://www.sumanasinc.com/webcontent/animations/content/diffusion.html>

Questions.

47. What type of molecules are allowed to pass freely through the membrane?
 - f. Is this active or passive transport?
 - g. IS there energy required?
48. What part of the cell membrane prevents large molecules from passing?
49. What is facilitated diffusion?
50. What facilitates (helps) the molecules pass through the membrane?
51. Does facilitated diffusion require energy?
 - h. IS this active or passive transport?
52. The molecules in active transport move from a lower concentration gradient to a higher concentration gradient, what did this interactive compare this movement to?
53. Complete the interactive on the webpage and draw the diagram into your notebook. Make sure to label the molecules and proteins.

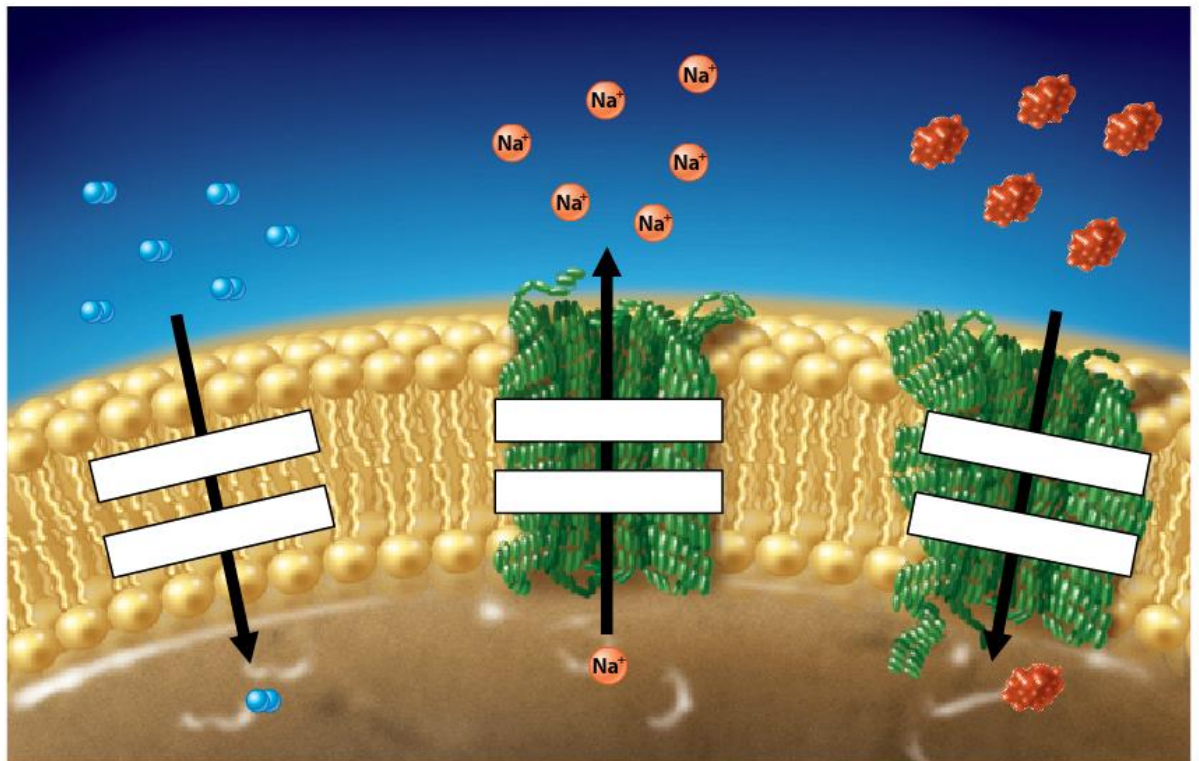
Simple diffusion

Facilitated diffusion

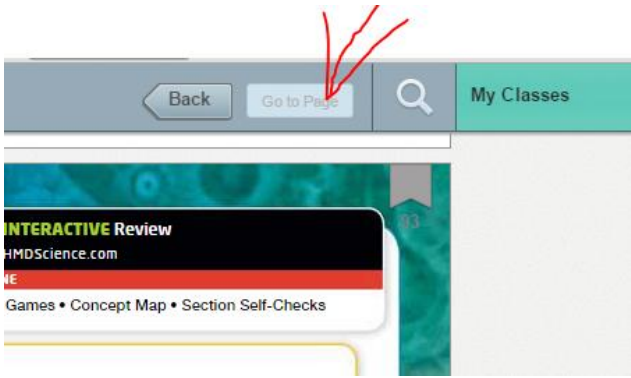
Active transport

Requires energy input

Does not require energy input

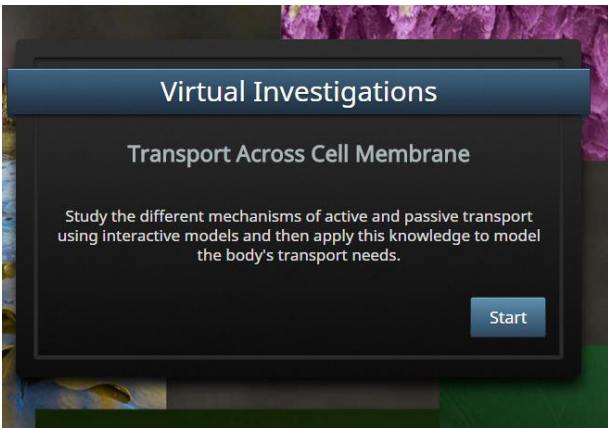


Once you have completed the questions you will open your book. (Must use the online version) **My.hrw.com,**



Open student version, on the top right side type in 91. This will take you to page 91 of your online book.

Open the Transport across cell membrane interactive. Right hand side of the page, a little lower than the middle.

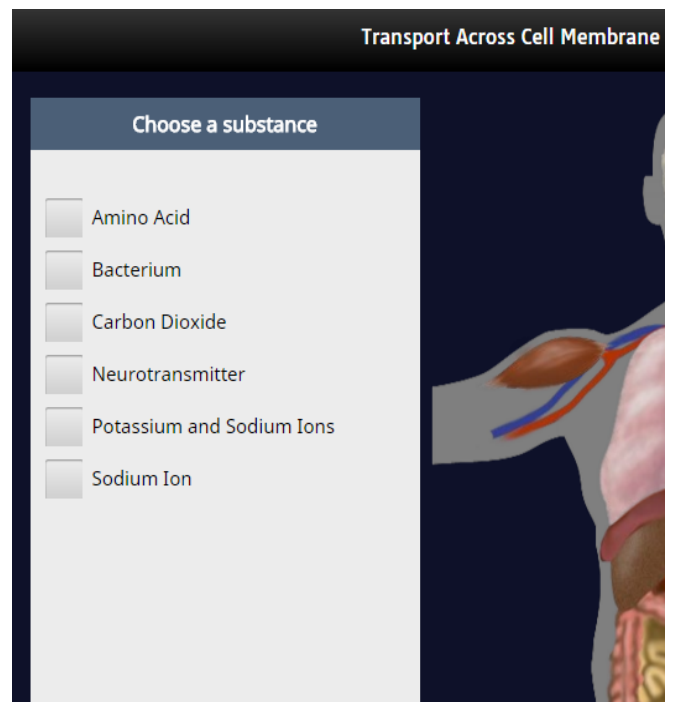


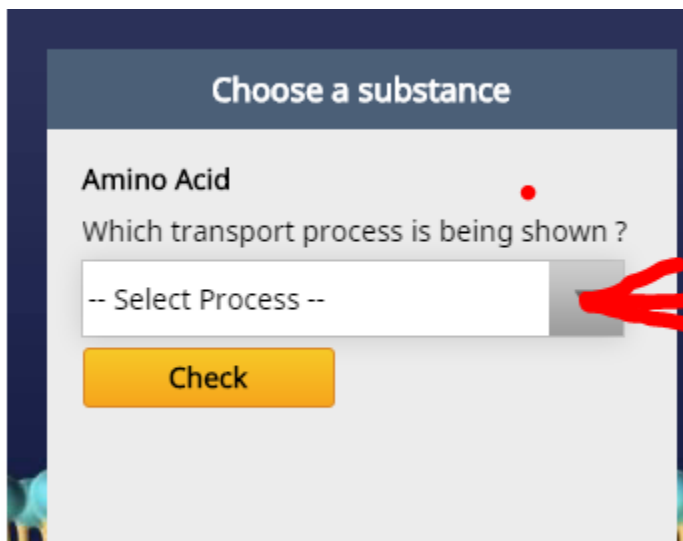
Start the virtual investigation

When you get to number 15 you will select one substance at a time.

You will write down each step that you select.

Start with Amino Acid. (Write down amino acids)





View the animation then select the transport process. (Write down the correct answer).

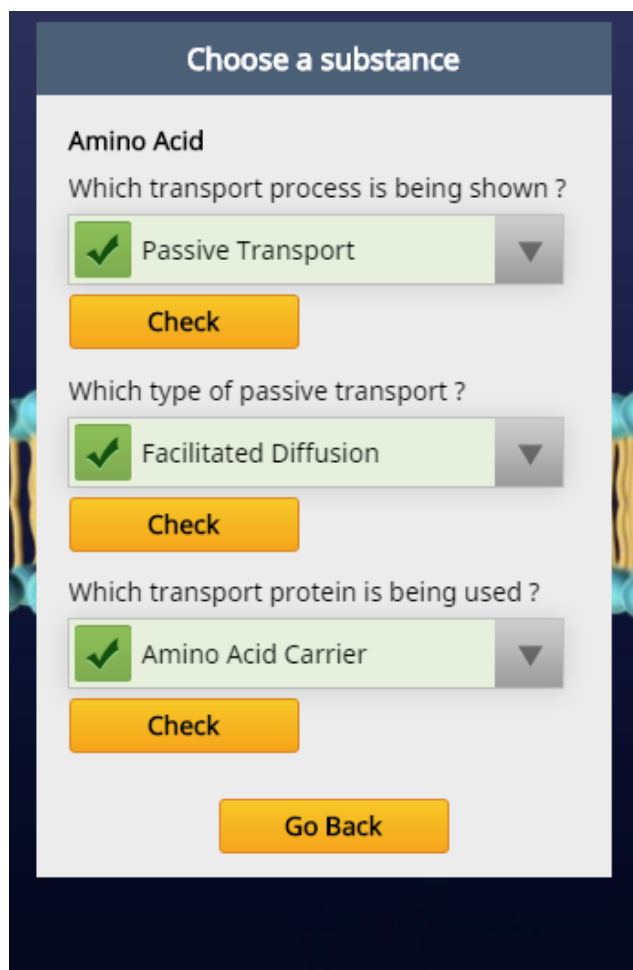
Continue to write all of the correct answers for each substance.

Once you have made all the selections you create a statement with all the answer choices in your notebook.

EXAMPLE- You should have:

Amino acids move through Passive Transport, facilitated diffusion, and are moved into the cell with an Amino Acid Carrier proteins.

Complete all 6 substances in your notebook. You should have 6 statements in your notebook when you finish.



Make sure to complete the skyward quiz before 1 on Friday. Your grades will be posted after 12 and I will NOT open the quizzes after that.