**Construction of the Cell Membrane**

Today we will be working on looking at the cell membrane on the web. Go to the following website:

http://www.wisc-online.com/objects/index_tj.asp?objID=AP1101

Be sure to type it exactly. You should see the title in blue. A small, green “next” button is in the right-hand corner.

Read and follow along. I will periodically have questions for you to answer.

1. **What is the cell membrane composed of?**
   A. ___Lipids_________________  B. ___Proteins_________________

2. **What are the two major types of proteins?**
   A. ___fibrous_________________

   B. ___integral______________ and _____peripheral_____________

3. **What types of molecules CAN go through the membrane?**
   *Lipid-soluble substances*

4. **What types of molecules CANNOT go through the membrane?**
   *Water-soluble substances*

5. **Draw a picture of the phospholipid bilayer:**

6. **What do you think hydrophobic means?**
   *Water insoluble (water-hating)*

7. **What do you think hydrophilic means?**
   *Water soluble (water-loving)*
8. What do the **fibrous** proteins do?

Serve as receptors

9. What is the difference between “pore” proteins and “channel” proteins?

Pores allows lipid insoluble things through, channels allow ions through.

10. What does **peripheral** mean?

Associated with the surface

11. What are glycoproteins?

Proteins with carbohydrate associations

12. Have you seen glycoproteins somewhere else? Where?

Cell-surface markers, in class

13. What does cholesterol do for the cell membrane?

Helps make the membrane impermeable to water, stabilizes the membrane

14. Complete Question 1 of 10. Write your answers down from left to right.

Pore protein, phospholipid, fibrous proteins, glycoprotein, channel protein

15. Question 2 of 10: Which part forms the basic frame of the cell membrane?

Phospholipid OR #2, OR “B” OR second from left OR

16. Question 3 of 10: Where are the hydrophilic heads located on the membrane below?
17. Question 4 of 10: Where are the hydrophobic tails located on the membrane below?

18. Question 5 of 10: Which one was the fibrous receptor protein?

Third from the left OR #3 OR “C” OR

19. Question 6 of 10: Which one was the pore protein?

First from the left, OR #1 OR “A” OR

20. Question 7 of 10: Which one was the channel protein?

Fifth or last from the left, OR #5, OR “E”, OR

21. Question 8 of 10: Which one was the glycoprotein?
Fourth from the left, OR #4, OR “D”, OR

22. Question 9 of 10: What is the function of the glycoprotein?

c) identification and recognition

23. Question 10 of 10: What molecules are found in the animal cell membranes, but not in plant cell membranes?

a) cholesterol

When you are finished go to the following websites:

http://bcs.whfreeman.com/thelifewire/content/chp05/0503001.html

Click on **5.1 The Fluid Mosaic Model**. Identify components of a cell membrane. Some things may be new to you. Write the new things in the space below. New words should be accompanied by definitions.

**Cholesterol**: Increases the fluidity of the membrane  
**Extracellular Region**: Outside the cell, shown by oligosaccharide components of glycolipids and glycoproteins  
**Hydrophobic Area of the Membrane**: fatty acid tails of phosphor lipids  
**Non-Transmembrane Integral Protein**: protein that penetrates the lipid bilayer but does not go all the way through  
**Oligosaccharide**: carbohydrate (15-units) that is attached to a protein (glycoprotein) or lipid (glycolipid)  
**Peripheral Protein**: proteins not attached to lipid bilayer, usually attached to integral proteins  
**Transmembrane Integral Protein**: protein that extens all the way through the lipid bilayer

THEN

http://www.susanahalpine.com/anim/Life/memb.htm

Write down in the space below how this animation illustrates why they call it the “fluid mosaic model”.
The 'Fluid' part represents how some parts of the membrane can move around freely, if they are not attached to other parts of the cell. The 'mosaic' part illustrates the 'patchwork' of proteins that is found in the Phospholipid Bilayer. (http://alevelnotes.com/The-Fluid-Mosaic-Model/129#/?id=102&tree=3o102)