

Online Activity: Cell Membranes and Cell Communication

Cell membranes are an important organelle for the cell. It not only protects the cell but is heavily involved in the communication around the human body. Go to the following website to learn about the structure and function of the cell membrane. <http://learn.genetics.utah.edu/content/begin/cells/>

Directions – Each heading corresponds with the link on the website containing information for the section questions. At the end of each section, go back to the top of the page and Click AMAZING CELLS to return to the main page. Complete the following question and charts on a separate piece of paper that you will turn in.

Directing Traffic: How Vesicles Transport Cargo

1. Why must cells use vesicles to transport cargo?
2. Where do vesicles form in the cell?
3. What is the purpose of the coat proteins?
4. How does the cell organize the thousands of traveling vesicles?
5. What is another method for vesicles to travel around the cell? **Explain.**

Membranes Organize Cellular Complexity

6. Looking at the first image, explain why cell membranes are known as a mosaic structure.
7. Explain why cell membranes form into a sphere.
8. Why are proteins considered gate keepers?
9. Describe three types of membrane proteins. (*FYI – there are more types of membrane proteins than what the website gives you.*)
10. What makes membranes fluid?

Dropping Signals : Fill out the following chart, noting which signal interacts with the cell and record the cell response.

Cell Type	Light	Nitric Oxide	Cytokine	Hormone
Muscle				
Photoreceptor				
Cancer				
Leaf Parenchyma				
Fibroblast				

When Cell Communication Goes Wrong

11. Explain what happens when insulin signal doesn't work?
12. Why does multiple sclerosis lead to nerve damage?
13. How is Type I and Type II diabetes different in terms of cell communication?
14. How can a stroke be more catastrophic after the stroke occurs?
15. What disease can be caused by multiple signaling breakdowns?

The Inside Story of Cell Communication

16. Why do some cells respond to certain signals while others lack a response? (*Watch the video*)
17. How do proteins work together in the cell communication process? How does this help an organism?

An Example of Cell Communication: The Fight or Flight Response

18. Watch the video and describe the role of the cell membrane in the response to the fight or flight response. Use the knowledge you just learned from this activity