**Author -** Sara Milillo, Director of Math and Science, Bay Path University

**General description -** Students can use the following vocabulary word “cards” to make and justify connections between important terms related to OpenStax Biology - Chapter 5 - Structure and Function of Plasma Membranes

**OpenStax book used -** Biology

<https://cnx.org/contents/GFy_h8cu@10.137:rZudN6XP@2/Introduction>

**Active learning technique used -** “Concept connection”

**Compatible technology tools -** any kind of photo sharing or webcam recorder mechanism, such as Mural (<https://mural.co/>) or padlet (<https://padlet.com/>)

**Activity instructions to the student -**

1. Select 5 (this number is just a suggestion) of the following vocabulary terms

2. Create a card for each term by writing them onto individual index cards or pieces of paper, or use print out the grid on the last page and cut out the rectangles

3. Arrange the cards on a flat surface to show how you relate the terms to one another

4. Prepare a short written (or oral) justification for your arrangement that explains how the terms are related. Approximately ½ page single spaced written explanation or ~1 min recorded explanation.

*\*Note: there is no one right answer to this assignment! Each student’s selection of terms and arrangement/justification will vary and that is ok.*

5. Take a picture of your arrangement and make sure it is of sufficient resolution so that I can zoom in to view if necessary

6. Submit your picture and justification to XX (collaborative platform of instructor’s choice)

**Vocabulary terms -**

Membrane

Permeability

Phospholipid

Cholesterol

Glycoslylation

Hydrophobic

Hydrophillic

Amphiphillic

Lipid bilayer

Peripheral proteins

Integral proteins

Fluidity

Porin

Channel protein

Concentration gradient

Diffusion

Facilitated transport

Hypertonic

Hypotonic

Isotonic

Osmosis

Plasmolysis

Passive transport

Transport protein

Solute

Active transport

Antiporter

Gradient

Symporter

Uniporter

Pinocytosis

Endocytosis

Exocytosis

Receptor-mediated

**References and Attributions**

Kneafsey, J. “Active Learning Across the Disciplines” Presentation at OpenStax CreatorFest 2018, Houston TX.

OpenStax, Biology. OpenStax CNX. Mar 21, 2018 <http://cnx.org/contents/185cbf87-c72e-48f5-b51e-f14f21b5eabd@10.137>

|  |  |  |  |
| --- | --- | --- | --- |
| Amphiphillic | Hydrophillic | Cholesterol | Phospholipid |
| Hydrophobic | Lipid bilayer | Peripheral proteins | Integral proteins |
| Porin | Channel protein | Concentration gradient | Diffusion |
| Hypotonic | Facilitated transport | Lipid bilayer | Fluidity |
| Hypertonic | Plasmolysis | Osmosis | Isotonic |
| Passive transport | Transport protein | Solute | Active transport |
| Antiporter | Gradient | Symporter | Uniporter |
| Endocytosis | Exocytosis | Pinocytosis | Receptor-mediated |
| Membrane | Permeability |  |  |