

NAME _____ DATE _____ PERIOD _____

Cell Membrane Worksheet

A. Composition of the Cell Membrane & Functions

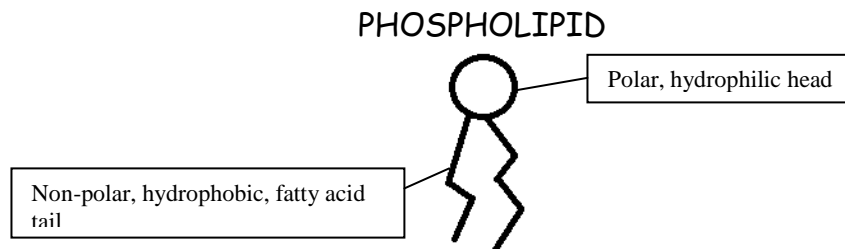
Word bank: bilayer head protective control P
Plasma fatty acids small tails freely

The function of the cell membrane or plasma membrane is to form a protective layer around the cell and to control the passage of materials in and out of the cell.

The plasma membrane is made of a phospholipid bilayer. The phospholipids have a hydrophilic (water attracting) head and two hydrophobic (water repelling) tails. The head of a phospholipid is made of an alcohol and P group, while the tails are chains of fatty acids. Phospholipids can move freely and allow water and other small molecules to pass through into or out of the cell.

SKETCH AND LABEL a phospholipid coloring the heads red and the tails blue.

Label: polar, hydrophilic head / non-polar, hydrophobic, fatty acid tail

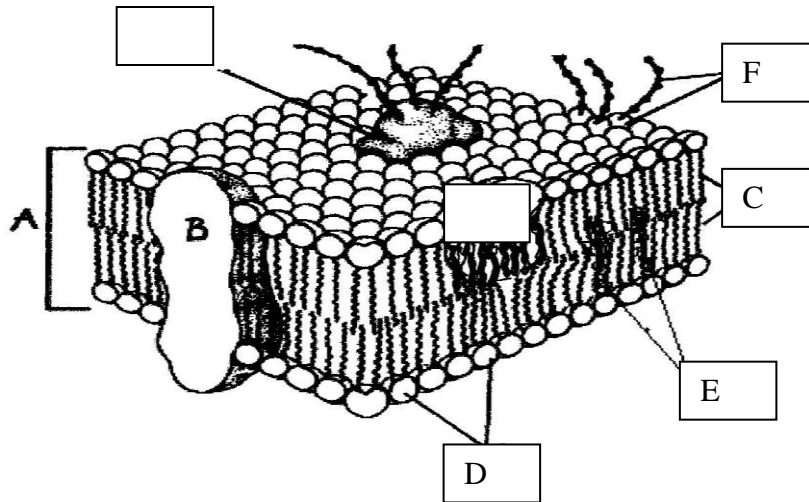


Word bank: intracellular lipids cholesterol receptors
proteins channel membrane pump

Another type of lipid in the cell membrane is cholesterol that makes the membrane more fluid. Embedded in the phospholipid bilayer are proteins that also aid in diffusion and in cell recognition. Proteins called membrane proteins go all the way through the bilayer, while intracellular proteins are only on one side. Membrane proteins are also called protein channel and pump. Large molecules like lipids or carbohydrates use proteins to help move across cell membranes. Some of the membrane proteins have carbohydrate chains attached to help cells in recognize each other and certain molecules.

B. Correctly identify the structure of the labelled letters. Color each part of the cell membrane.

Letter	Name/Color	Letter	Name/Color
<u> A </u>	Phospholipid bilayer (no color)	<u> D </u>	Phosphate heads (yellow)
<u> B </u>	Membrane protein (pink)	<u> E </u>	Cholesterol (blue)
<u> C </u>	Fatty acid tails (orange)	<u> F </u>	Carbohydrate chains



C. Match the cell membrane structure or its function with the correct letter from the cell membrane diagram.

Letter	Structure/Function	Letter	Structure/Function
<u> D </u>	Attracts water	<u> C </u>	Repels water
<u> E </u>	Helps maintain flexibility of membrane	<u> A </u>	Make up the bilayer
<u> B </u>	Involved in cell-to-cell recognition and help transport certain materials across the cell membrane		

D. Draw the structure of the cell membrane and then label:
 Phospholipid bilayer, protein channel, protein pump, cholesterol, carbohydrate chains, nucleus, mitochondrion (just one)

check with answers in class

