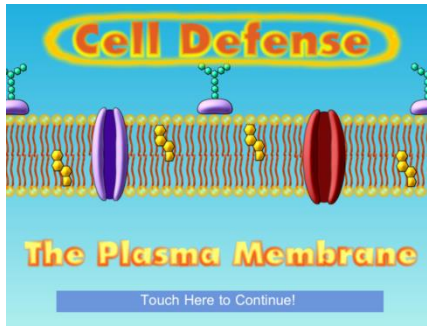


iPad app

Cell Defense The Plasma Membrane



Name: _____

Date: _____

Period: _____

Directions: Read the steps here and all the information on the iPad screen. Follow all the steps carefully filling in all the blanks.

Step 1: Click touch here to begin the app. You want to move to the “**Choose Your Challenge!**” menu. From the menu choose “**Build a Membrane!**” Dr. Vial has a vile weapon (note the play on words) that destroys plasma membranes. Without _____ cells of living things will die because they are unable to maintain _____.

Step 2: Zoom in on the plasma membrane. From the “**Urgent Message**” you learn that phospholipids are a _____ Head and _____ TAILS.

The heads are _____ which means _____.

The tails are _____ which means _____.

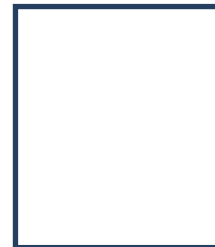
The heads face out towards the _____ and the tails facing _____.

Draw and label the phospholipid in the box:

Step 3: Repair the phospholipid membrane.

How many phospholipids did it take? _____

Step 4: What do you have to put into the membrane in order to help stabilize it?



_____ How many did you add? _____

Step 5: What is another word for selectively permeable? _____.

What does that mean? _____

Step 6: What 2 molecules easily pass through the membrane? Record why for each.

Molecule 1	Molecule 2

Step 7: What 3 molecules cannot easily pass through the membrane? Record why for each.

Molecule 1	Molecule 2	Molecule 3

What does polar mean?

Step 8: Insert channel proteins into the membrane. Transport substances across the membrane. Note: You can only transport substances using channel proteins until there were _____.

What is this process called?

Step 9: Moving from _____ to _____ concentration requires the use of energy to _____ substances. This is called _____ transport and uses: (place answer in table)

1. _____	2. _____ Which is cell _____
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Step 10: Carbohydrates are like identification badges. Cells that have different membrane carbohydrates do different _____. The immune system uses the carbohydrates to _____ that your cells belong to _____ and are not _____, _____, or other foreign cells.

What does the immune system do to foreign invaders?

What kind of cell does this?

Step 11: Next take the "Membrane Structure Challenge!"

Step 12: Take the "Diffusion Challenge!"

Step 13: Take the "Energy and Transport Challenge!"

How many ATP did you use? _____ What type(s) of protein(s) were used? _____
_____ Explain when each type was used. _____

Step 14: Take the "Osmosis Challenge!"

What is Osmosis? _____

What is the name of the special proteins that let water pass through? _____

Is this passive or active transport? _____

Step 15: From your Scores Sheet record:

Lab Score (% correct): _____

Number Correct: _____

Number Incorrect: _____