

Name \_\_\_\_\_

Date \_\_\_\_\_

## Cell Defense The Plasma Membrane

**Directions:** Read the steps here and all the information on the computer 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:** \_\_\_\_\_