**(Re-)Introduction to Cells**

Online Reading Name: \_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please get your Chromebook, login and go to my.ncedcloud.org and login
2. Click Canvas, Click on Biology I
3. Click Home (on the left), Click on ConnectEd (McGraw Hill)
   * Pop up blocker might stop this, you need to click “always allow…” from the pop up blocker, then reload the home screen
4. Click on “Launch” or the textbook
5. On the right hand side click on LS (Learn Smart). If there is no LS, then click on “resources”
6. Click on the blue Learn Smart box and then click on your class period.
   * If it asks for a name, you can click cancel. You might have to click through the tutorial before you start.
7. Whatever chapters we’re working on will show on the screen. If you have more than one chapter, let Mr. Bucka know.
8. Click on “7 Cellular Structure and Function” Click on “Practice” in the bottom left and answer the questions. Once you finish the assignment click “Turn in” and finish the rest of this paper.

Cell Organelles: Google sear or use your notes to help you find the correct answers

|  |  |  |  |
| --- | --- | --- | --- |
| **Organelle name** | **Organelle Function** | **Analogy** | **Picture of Organelle** |
| Nucleus | The function is to | The Nucleus is like a |  |
| Mitochondria | The function is to | The Mitochondria is like a |  |
| Chloroplast | The function is to | A chloroplast is like a |  |
| Endoplasmic Reticulum | The function is to | An Endoplasmic reticulum is like a |  |
| Golgi Body | The function is to | A golgi body is like a |  |
| Vacuole | The function is to | A Vacuole is like a |  |

Cell Organelles Game

Go to <http://www.sheppardsoftware.com/health/anatomy/cell/index.htm> For each of the three types of cells, click on “Quiz” and play until you complete the matching assignment with no mistakes. Have Mr. Bucka sign off once you finish.

**Animal Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Plant Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Bacteria Cell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Quizizz Cell Review**

Go to join.quizizz.com and play the game code **984994, 493305, and 852555**. Write down your high scores here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Part I: Cell Membranes

Go to the following website: www.biology4kids.com/files/cell\_membrane.html

1. How is the cell membrane similar to a plastic bag with tiny holes?

2. What two components make up the cell membrane?

a. What are their functions?

3. What is the fluid mosaic model?

Keep in mind that a phospholipid is a type of **lipid**. Think back to our unit on macromolecules. Lipids have long hydrocarbon tails (made of carbon and hydrogen). Water does not like to associate with these tails, so the tails in a phospholipid are *hydrophobic* (=water-fearing). The phospholipid heads have some charge, so they are polar. Water is also polar and likes to associate with other polar molecules. Thus, the heads are *hydrophilic* (=water-loving).

4. Given the information above, why does the arrangement of the phospholipid bilayer make sense? (The tails are facing inwards and the heads are facing the watery area surrounding the cell).

Part III: Membrane Transport

On the same website, go to the top and click on “Function.” (Right after it says Cell Structure & Function) > Click on “Passive Transport” on the right hand side. If you cannot find it, the URL is: www.biology4kids.com/files/cell2\_main.html

1. How does passive transport differ from active transport?

2. Two types of passive transport (movement of molecules across a membrane that does not require energy) include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. What do some proteins act as to aid in moving molecules across a membrane?

4. What do you think semi-permeable means? (*permeable* means to pass into or through).

5. What is facilitated diffusion? Does it require energy to occur?

a. What is an example of a molecule that cannot cross the membrane by simple diffusion?

6. Molecules that move from *high* to *low* concentration are said to be moving down

a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. Make a sketch showing molecules in high concentration on one side of the membrane, and in low concentration on the other side of the membrane and the movement of molecules down a concentration gradient.

8. How are small molecules able to freely cross the membrane without an input of energy?

9. What is osmosis?

10. In terms of ion concentration, what type of homeostasis needs to be established for a cell to survive?

11. What will happen if red blood cells are placed in water? Why does this happen? On the right side of the webpage under Cell Function, click on “Active Transport.”

12. What is active transport?

13. Why does the cell sometimes have to expend energy to move individual molecules across the cell membrane?

14. Which membrane molecules do most of the work in active transport?

15. Since these membrane proteins span the length of the lipid bilayer, what type of protein are they? (*hint*: see part II, question #3).

16. Membrane proteins are very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, meaning that they are designed to move only one or two types of molecules or ions across the membrane.

17. What does it mean by proteins working against a concentration gradient?

WEBSITE #1 <http://biology.tutorvista.com/cell/unicellular-and-multicellularorganisms.html>

1. What is a CELL?

2. What does it mean to be UNICELLULAR?

3. Identify an organism that is UNICELLULAR: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What does it mean to be MULTICELLULAR?

5. Identify an organism that is MULTICELLUAR: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Your body is made up of an estimated\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cells!

WEBSITE #2: <http://www.cellsalive.com/cells/3dcell.htm>

1. There are two types of cells. PROKARYOTIC= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Eukaryotic= Plants and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What types of cells do YOU have (PROKARYOTIC or EUKARYOTIC)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Which type of cell is more complex (complicated)?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Which type of cell is more simple? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_