

Biology: Unit III- Cells Introduction Activity

-Use the resources linked below to answer the following questions.

Part 1- [Discovery of Cells and The Cell Theory](#)

1. Who discovered cells? What instrument was used in this discovery?

2. What are the THREE PARTS of **The Cell Theory**?
 - a.

 - b.

 - c.

Part 2- [Cell Types](#)

3. What are the TWO main types of cells?

4. What is the MAIN difference between the two cell types?

5. How do **Eukaryotic** cells compare to **Prokaryotic** cells in terms of size and complexity?

6. Which type of organisms are Eukaryotic cells mostly found in? Circle one: (*unicellular* / *multicellular*)

7. What are **organelles**?

8. Where is the DNA found in **Prokaryotic** cells?

Part 3- The Cell Membrane

9. What is the **Cell Membrane** also known as?
10. What are the functions of the **Cell Membrane**?
11. What does the term **semipermeable** mean?

-Scroll down to the image/animation of the **Cell Membrane** and describe how each of the following substances enter/leave the cell membrane (*click on each substance* to read the process):

- a. H₂O - _____
- b. Gases - _____
- c. Steroids - _____
- d. Glucose - _____
- e. Ions - _____

12. What **molecules** make up the majority of the **Cell Membrane**? How are these molecules arranged?
13. What does **hydrophilic** mean? **Hydrophobic**?

- Scroll down to the image/animation of a **Phospholipid** and click on the sliding bar; slide it back and forth to see the structure of the membrane at different scales.

14. Please sketch a picture of the image of the **Phospholipid Bilayer (Membrane)** you see when you are on the far-right side of the sliding bar. Please label the **main parts**.

Part 4- [Plant Vs Animal Cells Link 1](#)

15. What kind of cells are **Animal** and **Plant** cells? Circle one (*Prokaryotic / Eukaryotic*)

16. What are THREE things that are found in **Plant Cells** but NOT in **Animal Cells**?
 - a.

 - b.

 - c.

17. What is a **Plant Cell Wall** made of?

18. What are the functions of the **Cell Wall**?

19. What is the main role of the large, central **Vacuole**?

20. What is the large, central **Vacuole** filled with?

21. What are **Chloroplasts**? How do they function?

Part 4- [Plant Vs Animal Cells Link 2](#)

22. What are **Mitochondria**?

23. What *process* are **Mitochondria** the site of?

24. Hover your cursor over the **green text** of the *process* you identified in question 22 and write the description given.

25. Please write the chemical reaction equation for this **process** you see at the bottom of the description you wrote down in question 23.

26. What is **ATP**? What does the acronym stand for?

27. What does the cell use **ATP** for?

28. Sketch the image of the **Mitochondria (Figure 4)** below; please label the **main parts**: