

B.A.T. Review

Cells

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NAME:

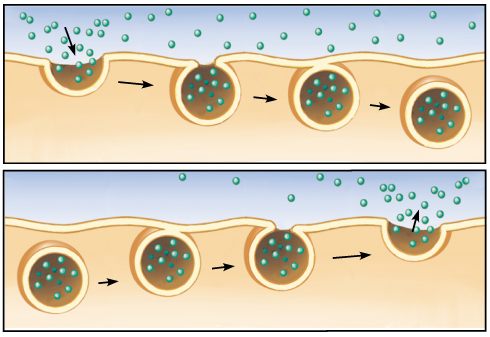
\_\_\_\_\_\_\_\_\_\_\_\_\_

PERIOD

**VOCABULARY**

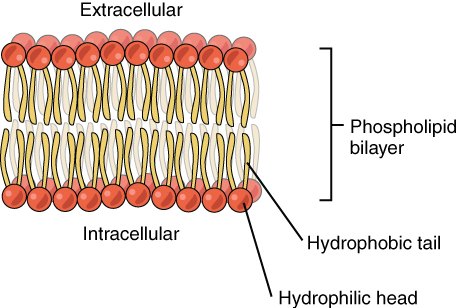
* Turgor Pressure
* Synthesis
* Solvent
* Solute
* Passive Transport
* Active Transport
* Osmosis
* Diffusion
* Facilitated Diffusion
* Hypotonic
* Hypertonic
* Isotonic
* Equilibrium
* Concentration Gradient
* ATP

**Endocytosis** – Active Transport taking molecule(s) into a cell



**Exocytosis** – Active Transport moving molecule(s) out of a cell

**CELLULAR MEMBRANE**



* Is **Semi-Permeable** (it only lets certain molecules through the membrane)
* Maintains **Homeostasis** (internal balance. Ex body temp.)
* Helps with **structure** and **support** along with **eliminating waste** and **taking in food** for the cell.
* Is made up of a **LIPID BILAYER and PROTEINS**

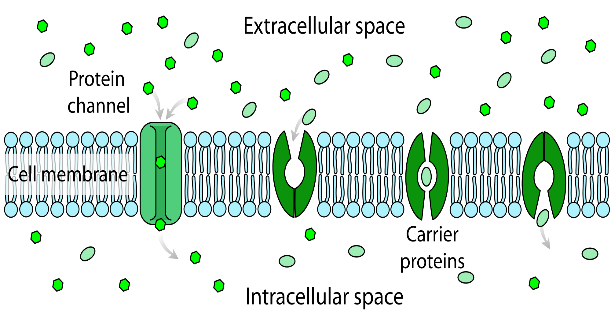
**CELLULAR TRANSPORT TYPES**

2 Types of Cellular Transport

PASSIVE TRANSPORT

ACTIVE TRANSPORT

* **Energy** Required called **ATP**
* Molecule Movement From **LOW to HIGH**  concentration
* Goes **AGAINST** the **concentration gradient**
* **Endocytosis** – into a cell
* **Exocytosis** – out of a cell
* **No Energy** Required
* Molecule Movement From **HIGH to LOW** concentration
* Goes **WITH** the **concentration gradient**



**THREE TYPES OF PASSIVE TRANPORT**

1. Diffusion (O2, CO2, anything!)
2. Osmosis

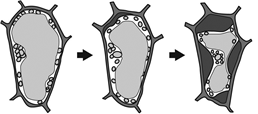
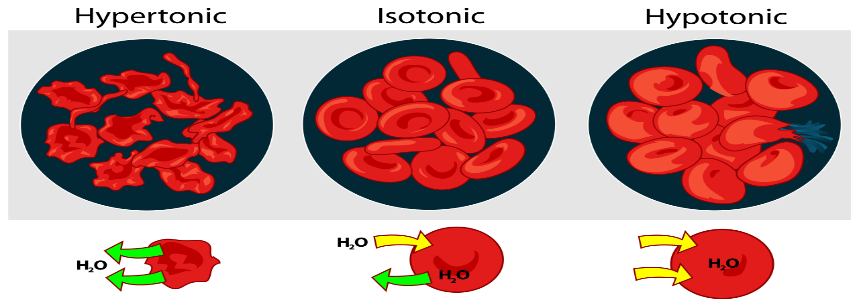
Diffusion only for **water**

1. Facilitated Diffusion

Diffusion with **protein channels** to help move molecules across the membrane

**Plasmolysis/Crenate**

**SOLUTION TYPES**

****

**EQUAL** amount of **Solute** on both sides of cell

**MORE** **Solute** on the outside of cell

**LESS** **Solute** on the outside of cell

No mass Change

Decrease in mass

Cell will decrease in mass

**Water moves** in direction of more solute (solute sucks).

**MORE** **Solute** on the outside of cell. What will happen?

Increase in mass

**CELL TYPES**

**VIRUSES**

LIVING

Ribosomes

Cell Walls

Cytoplasm

Biomolecules

Made of at least one Cell

Not Considered Living

Do not classify as a Eukaryotic or a Prokaryotic Cell

*Virus Structures*

*Look Like:*

**EUKARYOTIC CELLS**

One to Many Celled Organisms

\*\*\*\*\*\*\*\*NUCLEUS\*\*\*\*\*\*\*

HAS MEMBRANE-BOUND ORGANELLES

Animals

Plants

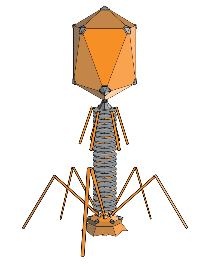
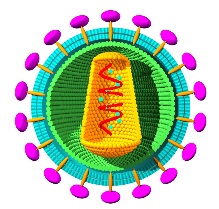
**PROKARYOTIC CELLS**

Only One Celled Organism

\*\*\*NO NUCLEUS\*\*\*

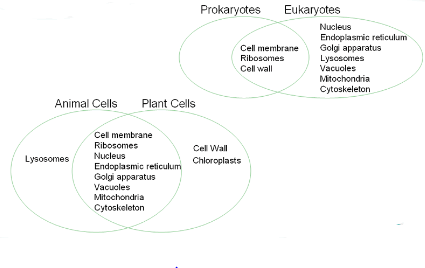
NO MEMBRANE-BOUND ORGANELLES

Bacteria



Protists & Fungus

**PROTEINS**



PACKAGE IT

MAKE IT

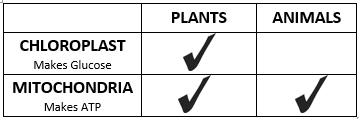
DELIVER IT

**GOLGI**

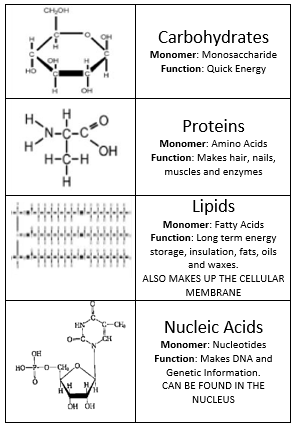
**RIBOSOMES**

**ER**

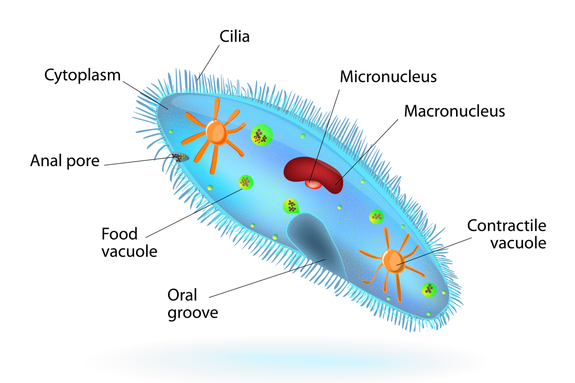
**ENERGY FOR CELLS**



**BIOMOLECULES**



**PARAMECIUM ORGANISM**



Paramecium Organisms live in the water. They are considered one of the few single celled Eukaryotic organisms. It contains two nucleuses (Nuclei). One big one and one small one.

**Endosymbiont Theory**

**How Eukaryotic cells arose**

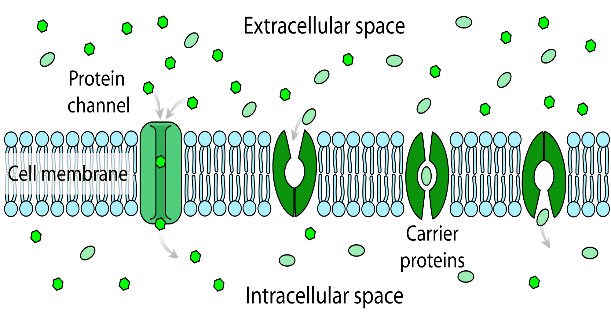
**Mitochondria and Chloroplasts are evidence because they:**

1. **Have ribosomes similar to prokaryotes**
2. **Have their own circular DNA like prokaryotes**
3. **Reproduce by binary fission like prokaryotes**

NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PERIOD: \_\_\_\_\_\_\_



B.A.T. Review Questions

1. What type of solution causes a cell to expand? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What type of solution causes a cell to shrink? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What types of solution causes a cell to be in a homeostatic state (meaning no change)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. (Circle one) In a **HYPOTONIC** solution the solute is **MORE / LESS / EQUAL** concentrated in the cell.
5. (Circle one) In a **HYPERTONIC** solution the solute is **MORE / LESS / EQUAL** concentrated in the cell.
6. What happens to the cell if it places in a **hypotonic** solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. What happens to the cell if it places in a **hypertonic** solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. The cell structure that allows substances in and out of the cell. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. What two biomolecules makes up majority of the cellular membrane? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. What does Semi-Permeable mean? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. How does a cell’s membrane help the cell to survive? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Describe the structure and alignment of the phospholipids in the cell membrane. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. What three structures are involved in protein synthesis and delivery? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. What are proteins made of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. What two cell structures eliminate waste? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. The **two types of cellular transport** are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ transport requires energy and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ does not require energy to move molecules through the cell’s membrane.
18. The **three types of passive transport** are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is only to describe diffusion for water.
20. **Facilitated Diffusion** needs the help of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to help push molecules through the cellular membrane.
21. **Active Transport** requires what type of energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
22. **Passive transport** are when molecules moving from \_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_ concentration.
23. **Active transport** are when molecules moving from \_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_ concentration.
24. Name the structure that is embedded into the cellular membrane in the diagram. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
25. (Circle one) Passive Transport goes **WITH / AGAINST** the concentration gradient while active transport **WITH / AGAINST** the concentration gradient.
26. What kind of organisms are prokaryotic cells?
27. What kind of organisms are eukaryotic cells?
28. What are 3 structures found in plant cells but not in animal cells? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
29. What macromolecule is found in cell walls of plants? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
30. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells have a nucleus while \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ do not have a nucleus.
31. What type of cells have membrane-bound organelles? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
32. Explain what similarities all Eukaryotic cells have in common? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
33. Viruses are considered \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and only share the characteristic of having \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside them with cells.
34. What type of energy is produced by a mitochondria? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
35. What types of energy is produced by a chloroplast? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
36. Animals have **MITOCHONDRIA / CHOLORPLAST / BOTH** organelles to give them energy.
37. Plants have **MITOCHONDRIA / CHOLORPLAST / BOTH** organelles to give them energy.
38. Proteins are made by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shipped by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and packaged by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
39. Do both cell types have ribosomes? \_\_\_\_\_\_ Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
40. Are paramecium single or multi-celled? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
41. What type of cell do paramecium classify as? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Do they have a nucleus? \_\_\_\_\_\_\_\_\_\_
42. Would paramecium be effected if you placed them in a hypotonic or hypertonic solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
43. What type of cell do Euglena classify as? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
44. Would Euglena be effected if you placed them in a hypotonic or hypertonic solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
45. Do they have a nucleus? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
46. What does the Endosymbiont Theory explain? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
47. What 3 things do mitochondria and chloroplasts have in common with prokaryotes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_