

Name \_\_\_\_\_

Period \_\_\_\_\_

## Cell Organelles Worksheet

Complete the following table by writing the name of the cell part or organelle in the right hand column that matches the structure/function in the left hand column. A cell part **may** be used more than once.

Structure/Function	Cell Part
1. Stores material within the cell	Vacuole
2. The sites of protein synthesis...in other words "builds protein"	Ribosomes
3. Helps fold and finish proteins, transports them through cell	Rough E.R.
4. The cellular fluid that fills cell outside of nucleus	Cytoplasm
5. Organelle that manages or controls all the cell functions in a eukaryotic cell	Nucleus
6. Contains chlorophyll, a green pigment that traps energy from sunlight and gives plants their green color	Chloroplast
7. Digests excess or worn-out cell parts, food particles and invading viruses or bacteria	Lysosome
8. Small bumps located on portions of the endoplasmic reticulum...Makes it rough E.R.	Ribosomes
9. Provides temporary storage of food, enzymes and waste products	Vacuole
10. Firm, protective structure that gives the cell its shape in plants, fungi, most bacteria	Cell Wall
11. Produces a usable form of energy (ATP) for the cell...both animal and plant cells	Mitochondria
12. Packages, labels, ships proteins out of the cell	Golgi Apparatus
13. Site where ribosomes are made	Nucleolus
14. The membrane surrounding the cell	Cell Membrane
15. Provides support for the cell. Made of fibers and proteins	Cytoskeleton
16. Name for the collection of DNA in the nucleus of eukaryotic cells	Chromosomes
17. Composed of a phospholipid bilayer	Cell Membrane
18. Controls what moves into and out of the cell	Cell Membrane

Explain how the following organelles work together to perform the life functions of the cell

1- Nucleus and ribosomes

Nucleus provides information to make protein...Ribosome uses information to make a protein

2- Endoplasmic reticulum and Golgi bodies

E.R. folds and finishes protein...Golgi then modifies, packages and ships the protein

3- Endoplasmic reticulum and ribosomes

Ribosomes build the protein...E.R. then folds and finishes the protein

4- Golgi bodies and lysosomes

Golgi packages protein Enzymes into a vesicle which becomes the lysosome

5- Nucleus and endoplasmic reticulum

Nucleus provides information to make protein...E.R. folds and finishes the protein once built

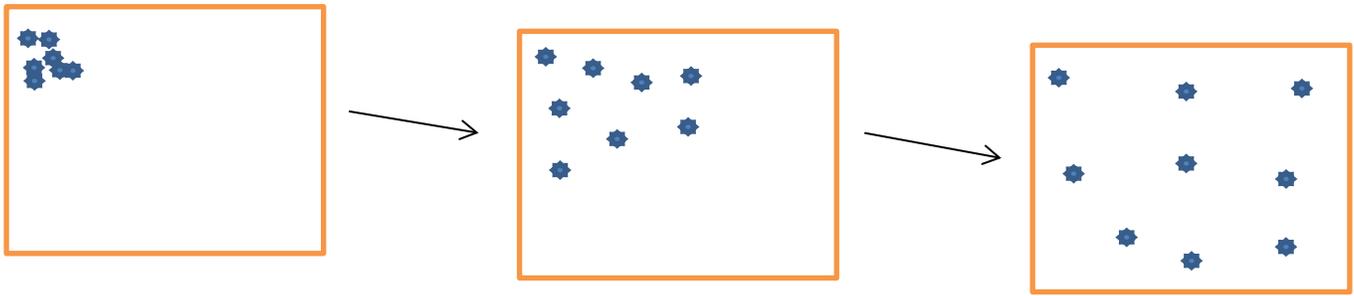
6- Endoplasmic reticulum and Golgi bodies and vesicles

Ribosomes build the protein...E.R. then folds and finishes the protein...Vesicles are the modes of transport between them and through the cell

7- Endoplasmic reticulum and cell membrane

E.R. produces new membrane for the cell. It ships the membrane which becomes part of the cell

Draw a series of pictures that shows that you understand the concept of Diffusion

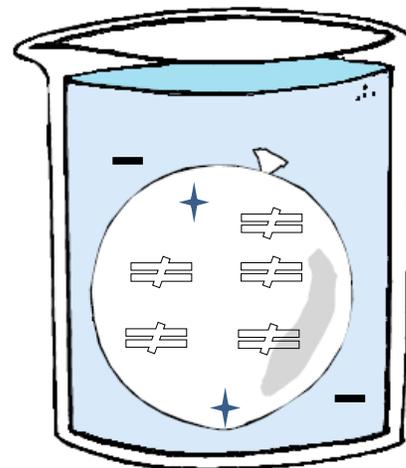


In the beaker below you have two substances.  $\text{—}$  &  $\star$  When the first comes in contact with the second they bond and turn into  $\equiv$  You need to draw a picture to the right of the beaker I gave you that includes the following information.

The bag in the beaker is semipermeable. It is permeable to  $\text{—}$  but not to  $\star$  or  $\equiv$



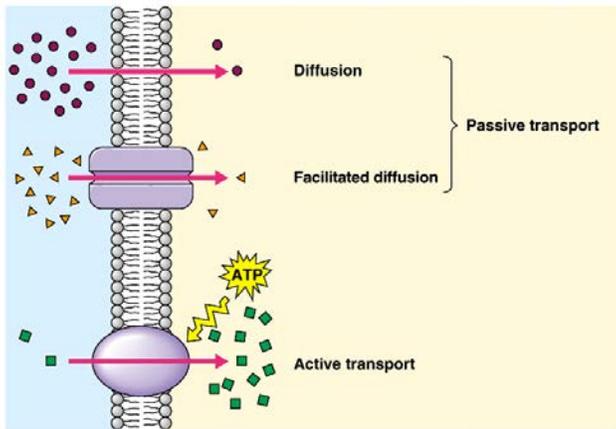
INITIAL STATE



INITIAL STATE

Obviously the solution in the beaker and bag above was made with water. Explain whether water would move into, or out of the bag in the experiment.

Water would keep moving into the bag, since the product  $\equiv$  can't move out. This make the overall system, or solution in the system HYPOTONIC, or there is more stuff in the bag than outside the bag in the end



Which process to the left uses energy?

Active transport

What type of energy does it use?

ATP

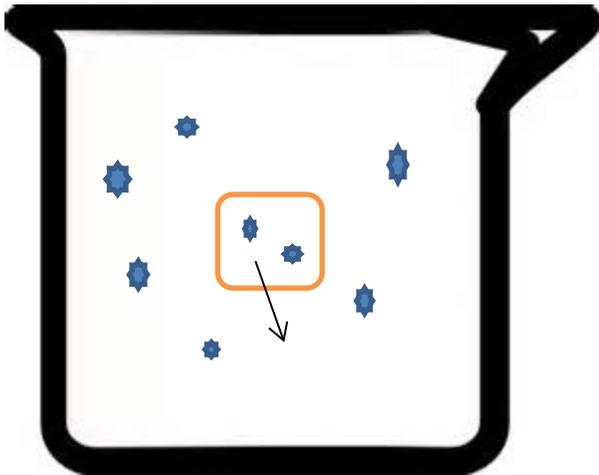
The squares are moving from \_\_\_Low\_\_\_ concentration to \_\_\_High\_\_\_ concentration.

What is the difference between diffusion and active transport?

Active uses energy to move substances from low to high concentration whereas diffusion always move substances from high to low concentration and requires no energy

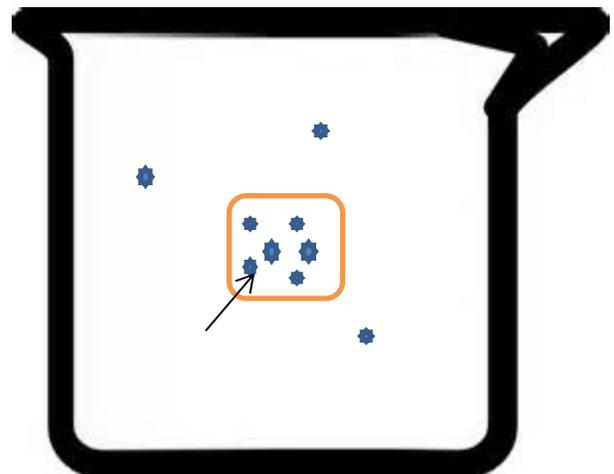
Why is facilitated diffusion different than simple diffusion

Facilitated needs a protein channel to move substances into the cell. They can't move through the membrane directly

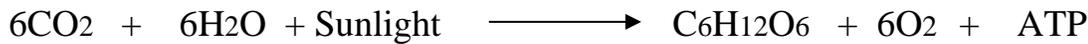


Draw a picture using the Beaker that shows the concept of a cell being placed into a hypertonic solution. Then draw arrows to show which way water would move in the system

Draw a picture to the right that shows you understand the concept of a cell being placed into a hypotonic solution and then draw arrows to show which way water will move in the system



## Chemical Equation for Photosynthesis



Words:

Carbon Dioxide + Water + Energy  $\rightarrow$  Sugar + Oxygen

5. Photosynthesis is the process in which sun's energy is trapped in the chemical bonds of sugar.

a. Requires \_\_\_\_\_ CO<sub>2</sub> \_\_\_\_\_, \_\_\_\_\_ Water \_\_\_\_\_, and \_\_\_\_\_ Energy \_\_\_\_\_.

b. Makes \_\_\_\_\_ Sugar \_\_\_\_\_, \_\_\_\_\_ Oxygen \_\_\_\_\_ which is used as food in the plant.

c. Waste product produced is \_\_\_\_\_ Oxygen \_\_\_\_\_.

d. Benefits:

Provides food for all plants and animals  $\rightarrow$   the whole food chain.

Provides \_\_\_\_\_ Oxygen \_\_\_\_\_ to breathe.

Removes \_\_\_\_\_ CO<sub>2</sub> \_\_\_\_\_ from atmosphere.

e. Plant adaptations:

**Chloroplast:** Cell organelle that performs photosynthesis

Chemical formula for Respiration



Words:

Sugar + Oxygen  $\rightarrow$  Carbon Dioxide + Water + Energy

7. Cellular Respiration is the process that takes **energy** from sugar molecules and places it in molecules of

\_\_\_\_\_ **ATP** \_\_\_\_\_.

a. \_\_\_\_\_ ATP \_\_\_\_\_ is the **molecule** all life uses for **energy**.

No organism can get energy from sunlight or sugar without first putting the energy into **ATP**.

b. Requires \_\_\_\_\_ Sugar \_\_\_\_\_ and \_\_\_\_\_ Oxygen \_\_\_\_\_.

c. Waste products produced are \_\_\_\_\_ Carbon Dioxide \_\_\_\_\_ and \_\_\_\_\_ Water \_\_\_\_\_.