

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## Biology Homework 1-4.1 Cell Transport

Use your **journal** as a reference tool in addition to the information provided below. Circle your answer choices and justify your answers.

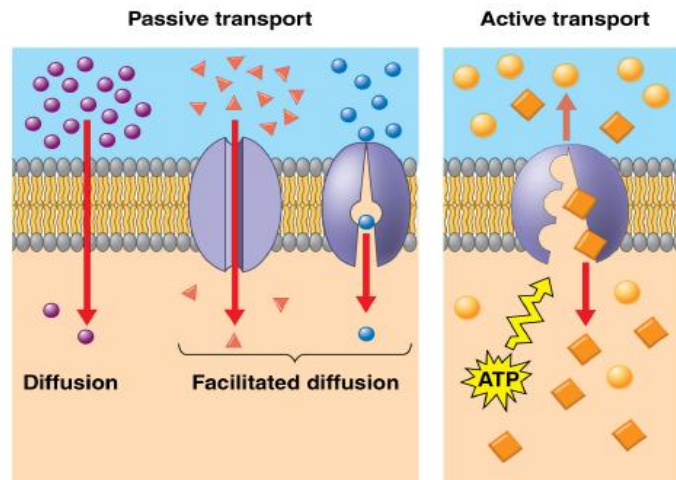
**Plasma (cell) membrane** – This is the boundary between the cell and its environment. It controls entry of nutrients and removal of wastes and maintains homeostasis.

**\*\*\*Homeostasis-** *balance; a stable, internal environment* \*\*\*

**Selective permeability** - The cell membrane is picky. Some molecules are allowed to enter a cell while others are kept out.

### **Passive Transport**

Some substances can move without using energy. This is called passive transport. The movement of solute (dissolved substance) from an area of greater concentration to an area of less concentration is called **diffusion**. Water molecules can also diffuse. They move from where there is more water to where there is less water. Diffusion of water is called **osmosis**.

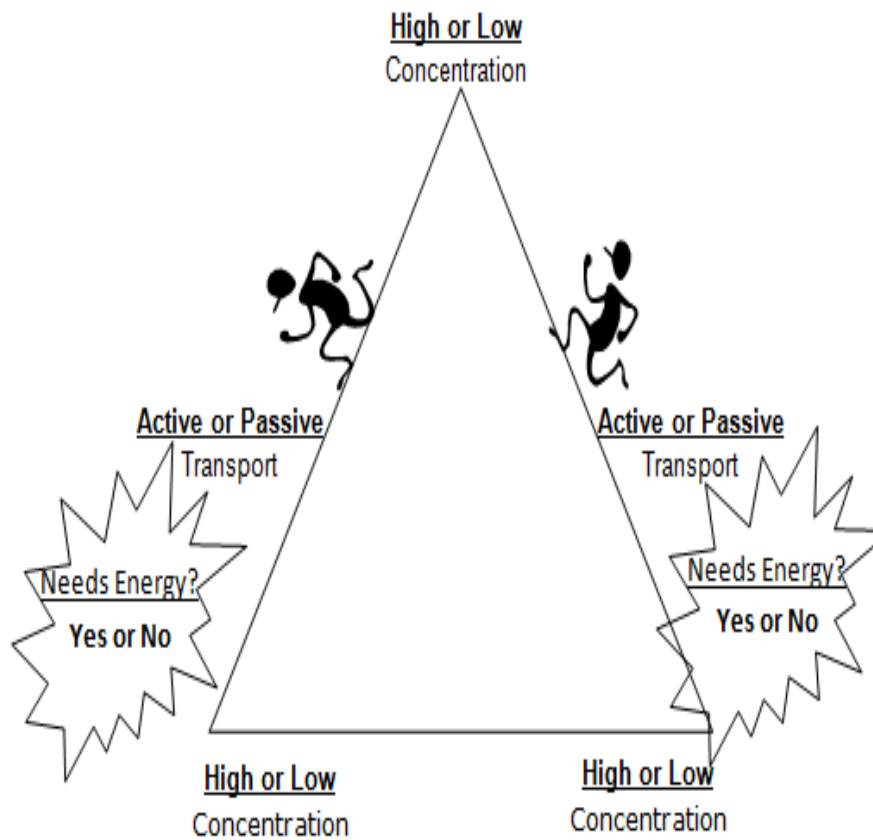


### **Active Transport**

Some molecules are too large to enter or exit the cell, or their charges prohibit them from passing through the plasma membrane. If this is the case, the cell can still move them, but it must use energy. Movement of substances that requires energy is called **active transport**. Sometimes proteins in the plasma membrane are used to pump materials out. Sometimes, materials enter and exit the cell using vesicles (pockets of the cell membrane). **Endocytosis** uses vesicles to bring materials (like nutrients) into the cell. **Exocytosis** uses vesicles to move materials (like waste products) out of the cell.

1. A student filled a plastic bag with a starch solution and placed the bag into a beaker filled with distilled water to soak overnight. The next day, the student observed that the plastic bag had gained mass. The student tested for starch in the beaker by adding a few drops of iodine. No color change occurred. The results of this experiment demonstrate that the plastic bag is
- permeable
  - impermeable
  - selectively permeable
  - a protein channel

2. Cells import large molecules through \_\_\_\_\_ and secrete large molecules by \_\_\_\_\_.
- exocytosis, endocytosis
  - endocytosis, osmosis
  - exocytosis, diffusion
  - endocytosis, exocytosis
3. The cell membrane is also known as the phospholipid bilayer. It selects what enters and leaves the cell. In comparison to a house, the phospholipid bilayer of the cell is like a(n)-
- brick wall
  - table
  - screen door
  - hot water heater
4. Complete the mountain analogy of transport below by circling the **(7)** correct choices.



5. Select active or passive transport for each of the statements provided.

Statement	Active Transport	Passive Transport
Molecules move from high concentration to low concentration.		
Molecules move from low concentration to high concentration.		
Transport that requires energy.		
Transport that does not require ATP.		