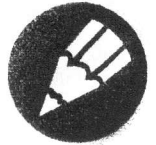


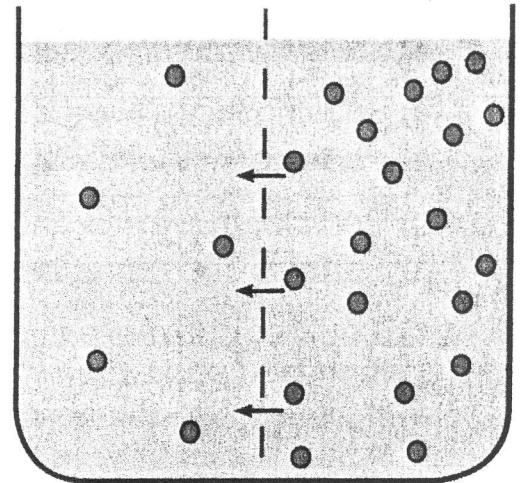
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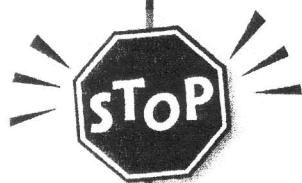
Diffusion and Osmosis

How do humans stay alive? We need to eat, drink, breathe, sleep, etc. All plants and animals have things they must do to stay alive. Also, all plant and animal cells must do certain things to stay alive. In order for a cell to live, tiny bits of matter, called **particles**, move into and out of the cell. They get in and out by passing through the **cell membrane**, the cell's outside "wall".

Particles can pass through a cell membrane in two ways: by active transport and passive transport. In **active transport**, energy from food is needed to move the particles across the cell membrane. **Passive transport** happens randomly. It does not need energy from food to help move the particles.



(Motion of Diffusion)



Describe what you think is the difference between someone who is ACTIVE and someone who is PASSIVE.

Imagine you are standing in a room of 100 people but you don't like crowded places. The room next door has only two people in it. What would you do? You would move to the room with fewer people! When this happens in cells, it is called **diffusion**. In diffusion, particles move from an area where there are many other particles to an area where there are fewer particles. Diffusion is a form of passive transport. It can occur across a cell membrane. The membrane allows small particles like water and oxygen to move into or out of the cell.

What happens if a particle is too large to pass through a cell membrane? Then it moves by **osmosis**, a special type of diffusion. The particle can move into or out of the cell because the cell has a **semi-permeable membrane**. This means that the cell lets some particles pass through and not others. Osmosis is a form of active transport that helps keep the cell alive.



Diffusion and Osmosis

1. **Circle** the word True if the statement is true. **Circle** the word False if it's false.

a) All living things have certain things they need to do to stay alive.

True **False**

b) Particles move into and out of cells by passing through the nucleus.

True **False**

c) Particles can move through the membrane in two ways: by **active transport** and by **passive transport**.

True **False**

d) **Passive transport** needs energy from food to move the particles. **Active transport** does not.

True **False**

e) A **semi-permeable membrane** allows only some particles to pass through it.

True **False**

2. Write each word besides its meaning. There is **ONE** word that does **NOT** have a matching definition! Use the reading passage to write a definition for the remaining word.

diffusion **osmosis** **active transport** **semi-permeable**

a) Describes something that allows some things through it, and not others

b) The movement of particles from an area with lots of other particles to an area where there are fewer particles

c) One way in which particles move back and forth across a membrane. It uses energy from food to move the particles.

d) _____