Diffusion

Task 1: Defining diffusion

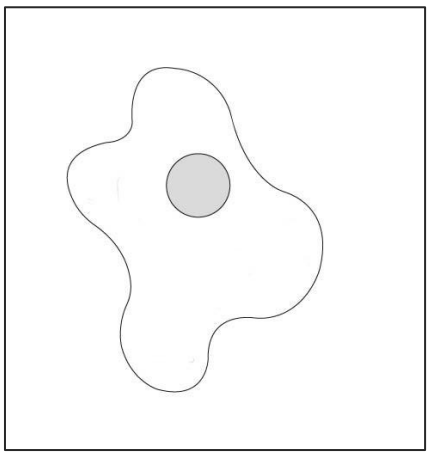
a) **Define** diffusion.

b) **Explain** what is meant by the term “equilibrium”.

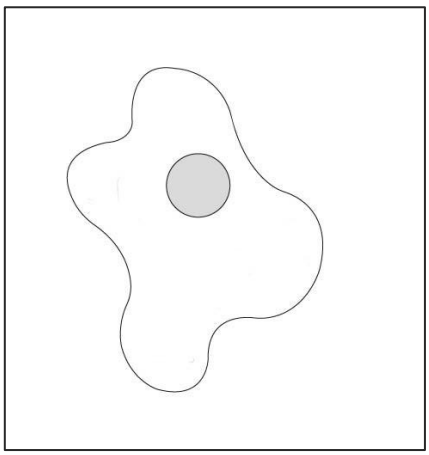
Task 2: Diffusion in cells

Add particles (circles) to the diagrams below to show diffusion taking place.

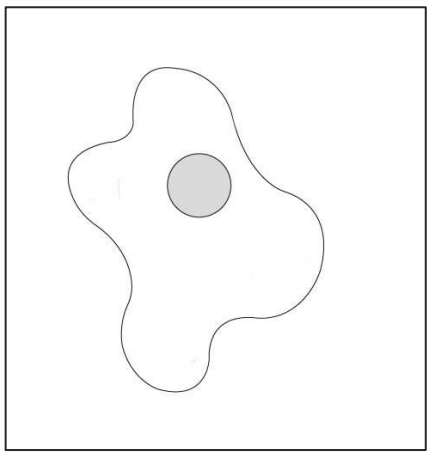
a) diffusion into the cell



b) diffusion out of the cell



c) equilibrium



Task 3: Factors that affect the rate of diffusion

a) **Fill** in the missing words.

Increasing the _____ of particles increases the rate of diffusion because the particles will have more _energy_____ and will move _____ quickly.

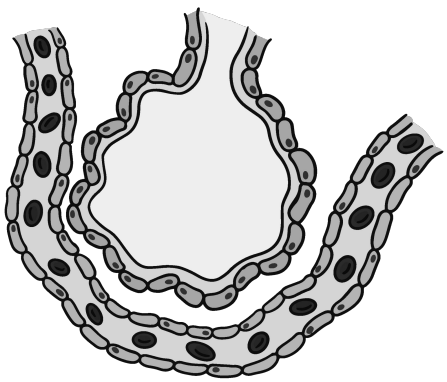
b) A higher temperature increases the rate of diffusion. **Name two** other factors that increase the rate of diffusion.

Task 4: Explaining diffusion in lungs

a) Using the keywords below, **describe** the process of diffusion of oxygen at the lungs.

alveoli oxygen concentration blood

b) **Explain** how the shape of the alveoli helps to increase the rate of diffusion.



Diffusion

Answers

Task 1: Defining diffusion

a) **Define** diffusion.

Diffusion is the net movement of particles from an area of high concentration to an area of low concentration.

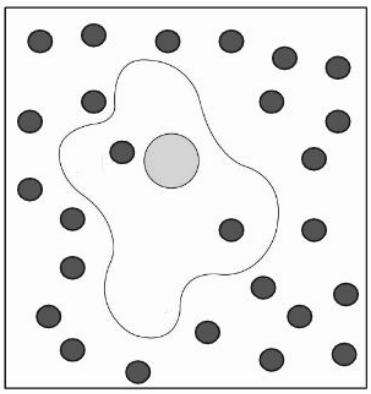
b) **Explain** what is meant by the term "equilibrium".

Equilibrium describes when the concentration of particles is equal in all areas.

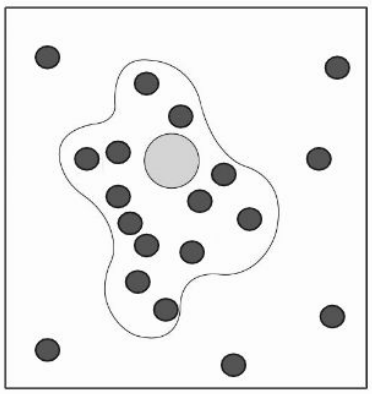
Task 2: Diffusion in cells

Add particles (circles) to the diagrams below to show diffusion taking place.

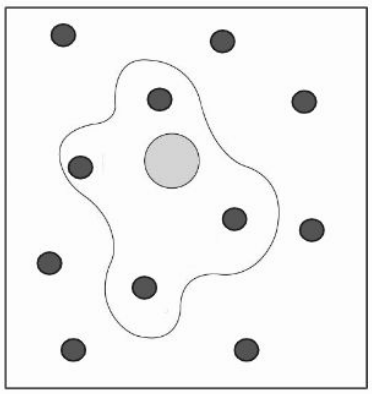
a) diffusion into the cell



b) diffusion out of the cell



c) equilibrium



Answers

Task 3: Factors that affect the rate of diffusion

a) **Fill** in the missing words.

Increasing the _temperature_ of particles increases the rate of diffusion because the particles will have more _energy_ and will move _more_ quickly.

b) A higher temperature increases the rate of diffusion. **Name two** other factors that increase the rate of diffusion.

- *steeper concentration gradient*
- *larger surface area*

Task 4: Explaining diffusion in lungs

a) Using the keywords below, **describe** the process of diffusion of oxygen at the lungs.

alveoli oxygen concentration blood

Oxygen is inhaled into the lungs and it travels to the alveoli.

Oxygen is at a high concentration in the alveoli.

Oxygen is at a low concentration in the blood.

Oxygen diffuses out of the alveoli and into the blood.

b) **Explain** how the shape of the alveoli helps to increase the rate of diffusion.

The alveoli have a folded wall, which increases the surface area available for diffusion.