



Photosynthesis	Leaf structure	Plant minerals	Uses of glucose	Aerobic respiration and energy uses	Anaerobic respiration
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Key Words	
Key Word	Definition
Aerobic cellular respiration	A type of respiration that requires oxygen and takes place in the mitochondria and cytoplasm of cells.
Anaerobic cellular respiration	A type of cellular respiration that does not use oxygen and takes place in the cytoplasm of cells.
Carbohydrate	A type of nutrient found in foods. Sugar and starch are examples of carbohydrates.
Ethanol	A product of anaerobic cellular respiration in microorganisms.
Fermentation	The process of anaerobic respiration in microorganisms is called fermentation.
Food	Any substance that an organism uses as a source of both energy and materials for growth and repair.
Glucose	A sugar (carbohydrate) produced by photosynthesis.
Lactic acid	A product of anaerobic cellular respiration in humans which causes muscle cramps.
Microorganism	A living organism made up of one or a small number of cells.
Minerals	Plants need chemicals called minerals to stay healthy and grow.
Photosynthesis	A chemical reaction by which producers make their own food.
Producer	An organism that makes its own food.

Misconceptions

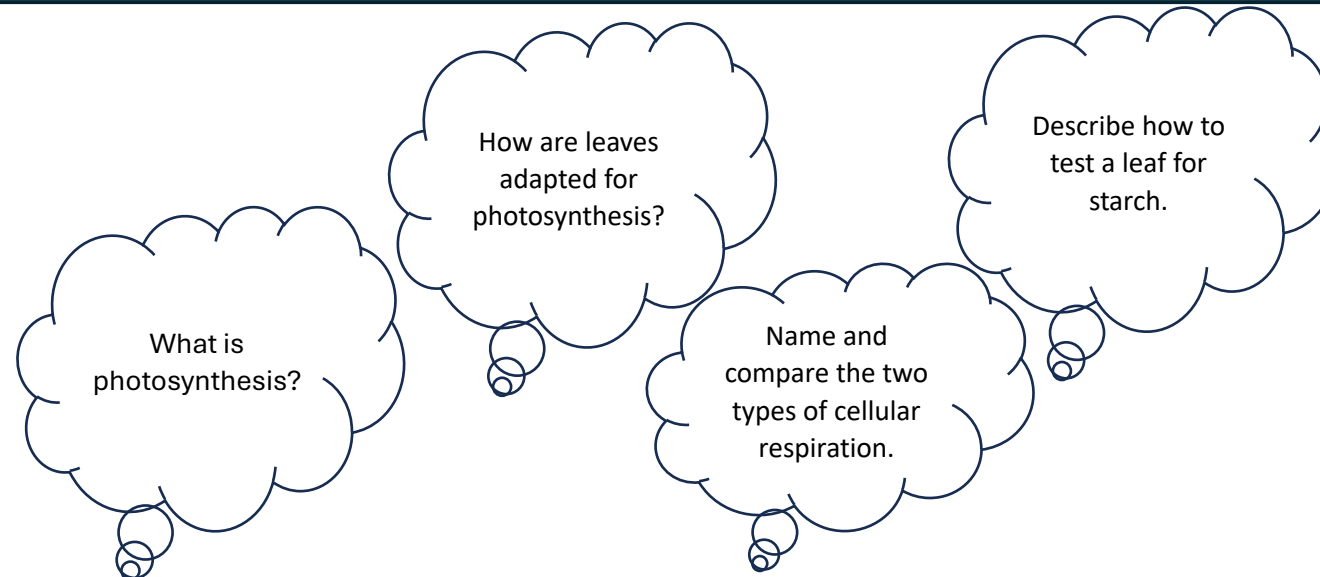
It is **not** only animals that respire, **both** plants and animals respire.

Plants do **not** only photosynthesise, they photosynthesise and respire.

Plants do **not** take in food from their surroundings, plants make the food they need to survive.

Light is **not** a chemical reactant in photosynthesis, photosynthesis is an endothermic reaction.

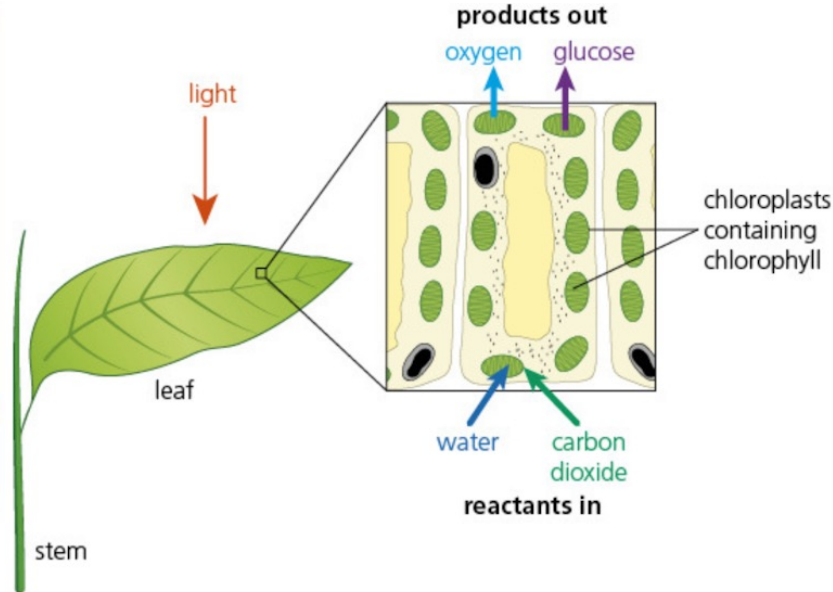
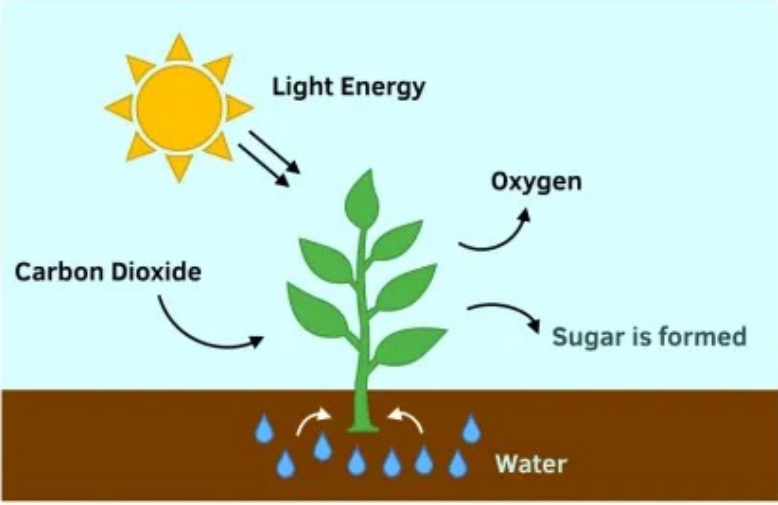
Key questions



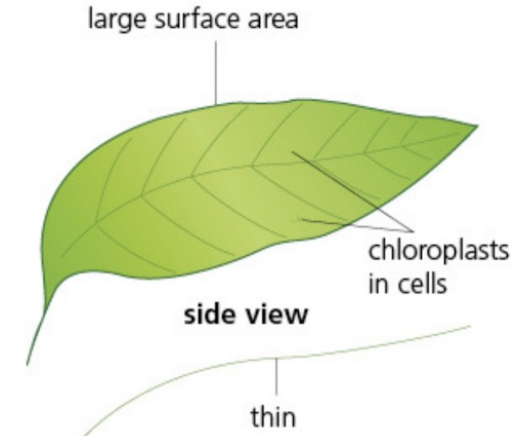
Photosynthesis

Leaf structure

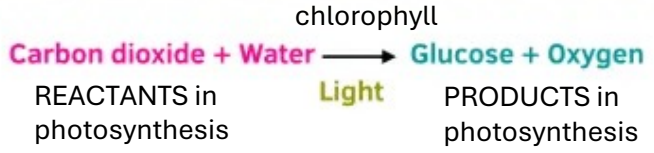
Photosynthesis is the endothermic chemical process, occurring in plant chloroplasts, that converts light energy into chemical energy to produce glucose and oxygen from carbon dioxide and water.



Leaf structure is highly adapted for photosynthesis, featuring a large surface area for light absorption and a thin shape for rapid gas diffusion.



The waxy cuticle prevents water loss, upper epidermis is a transparent protection, palisade mesophyll is packed with chloroplasts for light absorption, and spongy mesophyll contains air spaces for gas exchange via stomata.



Photosynthesis takes place inside chloroplasts in plant cells in leaves, chlorophyll (green pigment in chloroplasts) absorbs light energy to convert reactants into products.

Uses of glucose

- Plants use the glucose produced in photosynthesis:
- As an energy source – for respiration
 - To build new tissue – allows plant to grow
 - Store it for later use – glucose molecules are joined to form starch (insoluble)

