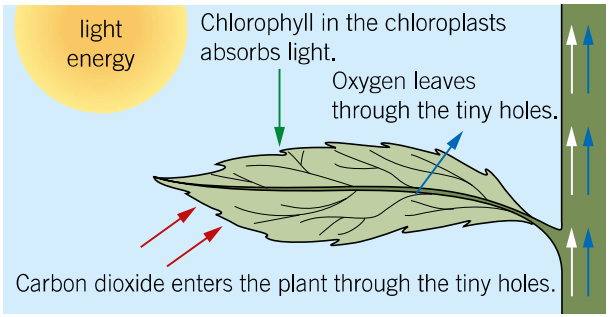
B2 Chapter 2: Ecosystem processes
Knowledge organiser

Photosynthesis

Photosynthesis is a chemical reaction that takes place in the **chloroplasts** to produce **glucose**.

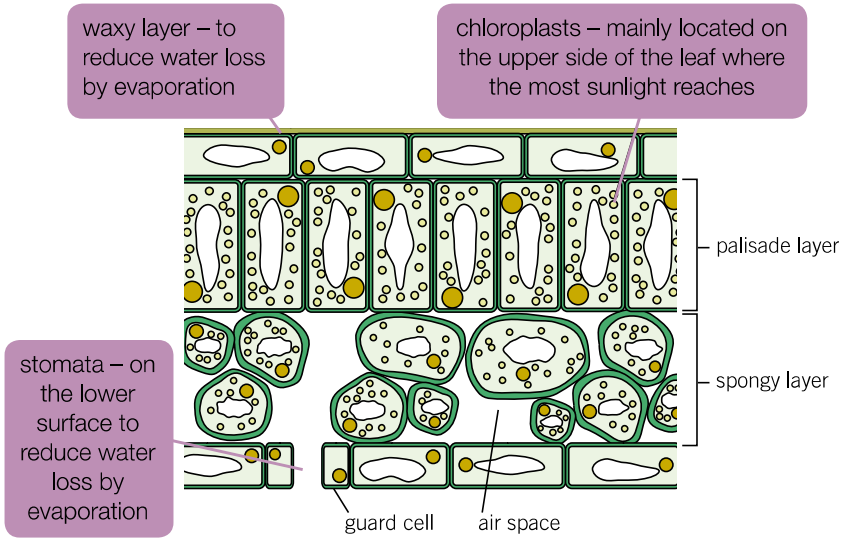
carbon dioxide + water → oxygen + glucose



The minerals plants need for growth are:

1. **nitrates** for growth
2. **phosphates** for healthy roots
3. potassium for healthy leaves and flowers
4. magnesium for making chlorophyll

If a plant does not have enough of a mineral, it may suffer from a mineral **deficiency**. Farmers can use **fertilisers** to add missing minerals to the soil.



Leaves are specially adapted for photosynthesis:

- have lots of green **chlorophyll** – absorb sunlight for photosynthesis
- are thin – allow gases to diffuse in and out of the leaf
- have a large surface area – absorb as much light as possible
- have veins – xylem and phloem transport water and glucose

Respiration

with oxygen

Aerobic respiration

glucose + oxygen → carbon dioxide + water (+ energy)

- Respiration occurs in the **mitochondria** of cells to **transfer** energy.
- Glucose is absorbed from the small intestine into the blood **plasma**. It is transported to the cells where it diffuses in

without oxygen

Anaerobic respiration (in animals)

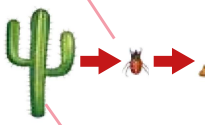
glucose → lactic acid (+ energy)

- This occurs when there is not enough oxygen for aerobic respiration, such as during strenuous exercise.
- It transfers less energy than aerobic respiration.

Food chains show
represent the direc
Food webs show

Food

herbivore – type of
that eats the pro



producer – green
plant/algae that
makes its own food

Prey: an organism
Predator: an orga
Bioaccumulation

The number of orga
of organisms are co

Interdependence
and reproduce.
Ecosystem: all the
Community: the o
Niche: the particul
This reduces comp