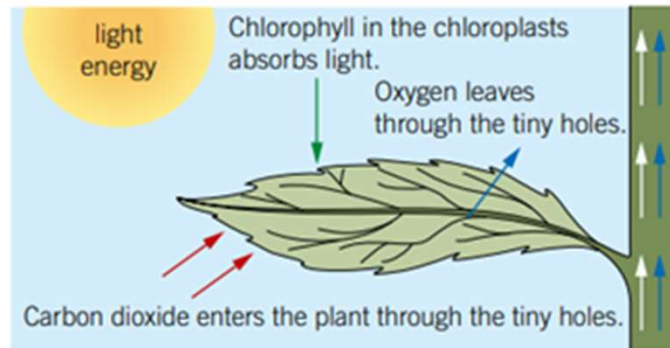


Photosynthesis

Photosynthesis

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



The minerals plants need for growth are:

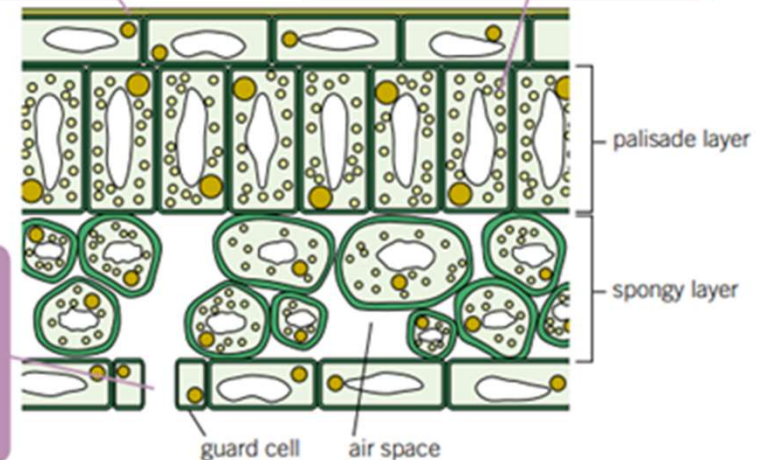
- 1 **nitrates** for growth
- 2 **phosphates** for healthy roots
- 3 potassium for healthy leaves and flowers
- 4 magnesium for making chlorophyll

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.

waxy layer – to reduce water loss by evaporation

chloroplasts – mainly located on the upper side of the leaf where the most sunlight reaches

stomata – on the lower surface to reduce water loss by evaporation



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



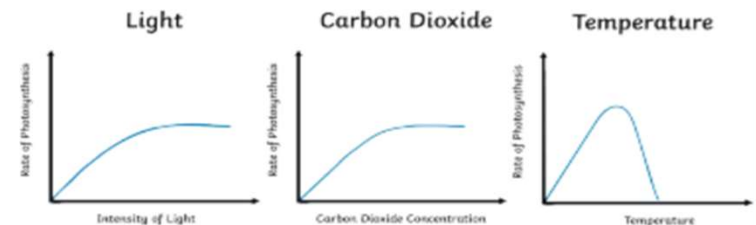
The limiting factor for the reaction will depend on the environmental conditions.

For example:

At night, light intensity is the limiting factor.

In winter, temperature is the limiting factor.

In other conditions, carbon dioxide is usually the limiting factor.

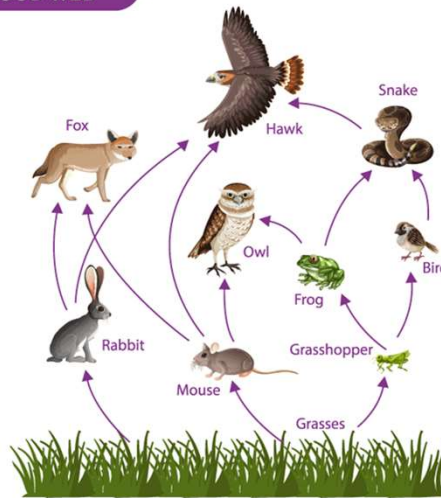


Testing a leaf for starch

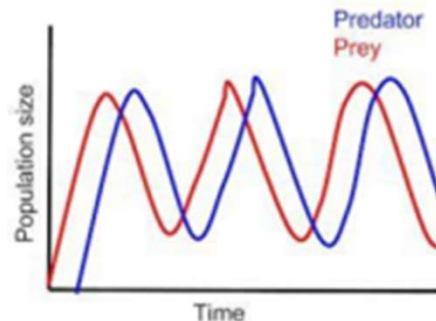
Interdependence

FOOD WEB

BYJU'S
The Learning App



This is a **food web**. It shows lots of interlinked food chains. The species are organised in layers or **tropic levels**. This allows us to recognise how changes to one group of animals or plants impacts the others.

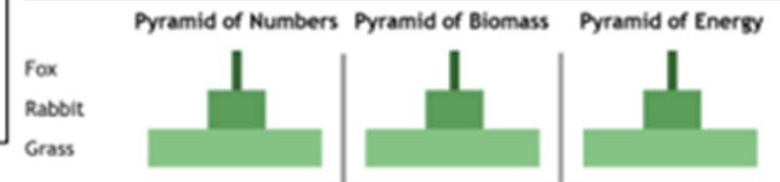


This image shows **bioaccumulation**, the build up of a toxin (such as pesticide) in a food chain. It can be fatal to the species at the top of the food chain.



This is a **food chain**. The arrows show the flow of energy through the chain. The arrows go from the organism being eaten to the organism eating it.

Below are some pyramids. These can demonstrate several things about a food chain. **Pyramids of number** tell us how many organisms there are at each stage of the food chain, **pyramids of biomass** show how much living matter there is at each stage. **Pyramids of energy** illustrate how much energy there is at each stage



This graph shows the relationship between predators and prey. They are inter-related

Bees are crucial for human survival as they pollinate our plants. They are currently threatened by parasites, pesticides, loss of habitat, diseases and climate change. It is important to protect bees in the future. How could we do this?

Websites that might be useful:

[BBC Bitesize - Ecosystems](#)

[Doc Brown Quiz](#)

Extension ideas to research:

[BBC Bitesize - Ecology](#)

[Mutual relationships in animals](#)

[Food Webs Revision](#)