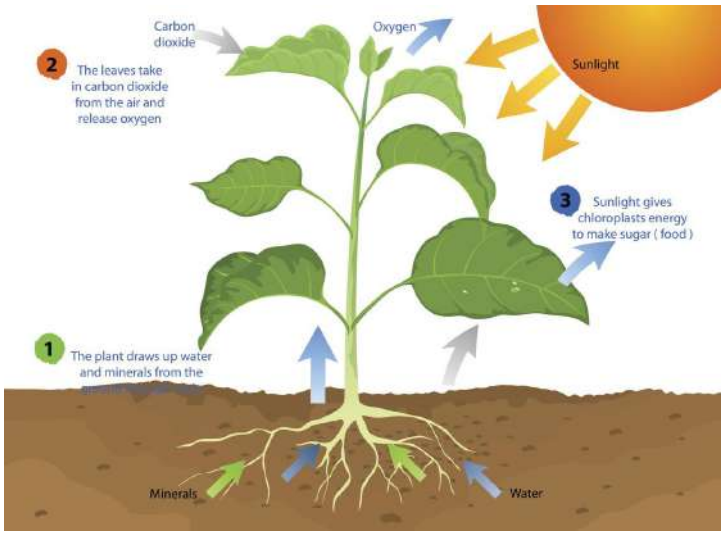
What is photosynthesis?



- Photosynthesis is a chemical reaction that makes food for plants in the form of sugars and starches
- Carbon dioxide, water and light are all needed for photosynthesis.
- Photosynthesis happens in plant leaves.

Tell Me More…
Unlike us and other animals, plants can make their own food with photosynthesis. How clever they are!
Plants convert the suns energy with CO2 and water to create food needed for their growth and reproduction. (Respiration)

Photosynthesis takes place in the part of the plant cell containing **chloroplasts**.
Chloroplasts are small structures that contain **chlorophyll.**

For photosynthesis to take place, plants need to take in **carbon dioxide** (from the air), **water** (from the ground) and **light** (usually from the sun).

Carbon dioxide enters through the **stomata** on the underside of the leaf.
Water is absorbed by the **root hair cells** and is transported to the leaf by the **xylem vessels.**
Sunlight provides the energy needed for photosynthesis to take place. In this process carbon dioxide and water are converted into **oxygen** (a waste product that is released back into the air) and **glucose** (the source of energy for the plant).
Oxygen is released through the stomata on the underside of the leaf; glucose is transported around the plant in the **phloem vessels.**

How are leaves adapted for photosynthesis?

- They are **green** because they contain lots of chlorophyll to absorb sunlight
- They have a **large surface area** to maximise the amount of sunlight they can absorb
- They are **thin**, allowing easy diffusion of gases into and out of the leaf
- They have **veins** (xylem and phloem) to allow the transport of water, mineral ions and glucose (food)

NB *Indoor Plants – if leaves get too dusty they will have trouble photosynthesising so you can wash them gently in the shower or summer rain…*