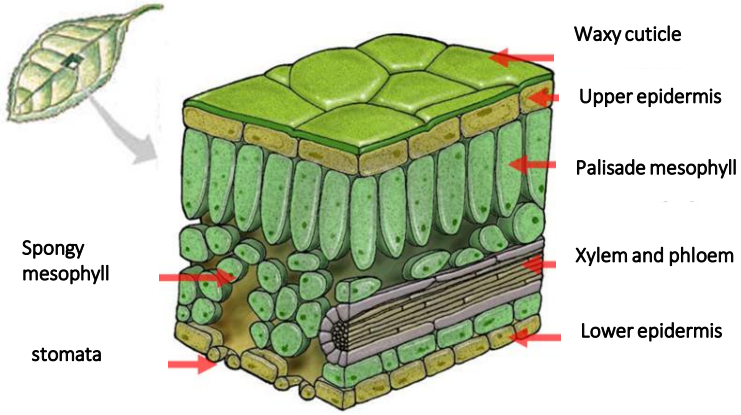
Biology: Plants as Organisms

Key word	Definition
Cells	The basic building blocks of all living organisms
Tissues	A group of cells with a similar structure and function
Organs	A group of tissues working together to perform a specific function
Aerobic Respiration	Chemical reaction where glucose reacts with oxygen to release energy, carbon dioxide and water
Photosynthesis	A reaction in carbon dioxide and water react with energy from light to form oxygen and glucose
Chloroplast	The structure of a plant cell which absorbs sunlight for photosynthesis
Cross section	A cut through the centre of a structure
Transpiration	The process by which water is pulled through the leaf and out of the stomata
Potometer	A tool to measure the rate of transpiration



Leaf tissues	Function
Waxy cuticle	Waterproof layer which prevents water loss
Upper epidermis	Covers the upper side of the leaf
Palisade mesophyll	Packed at the surface to absorb sunlight for photosynthesis
Spongy mesophyll	Has air spaces to allow gasses to diffuse in and out for photosynthesis
Xylem	Transport system for water and minerals
Phloem	Transport system for glucose
Lower epidermis	Covers the lower side of the leaf and contains stomata (small holes which allow gasses to diffuse in and out of the leaf)

Word equation

Carbon dioxide + Water $\xrightarrow[\text{Chlorophyll}]{\text{Light}}$ Glucose + Oxygen

Chlorophyll absorbs light energy which is transferred into chemical energy to make the products of photosynthesis. Carbon dioxide from the air reacts with water from the soil, taken up through the roots to make the products glucose and oxygen.

All living things on Earth rely on organisms which photosynthesise for energy. All energy comes from the sun. Photosynthesis converts light energy into chemical energy.