



9B Plant Growth

1. Reactions in Plants	
Photosynthesis	A process that plants use to make their own food.
Photosynthesis Word Equation	
	carbon dioxide + water → glucose + oxygen
Chloroplasts	Where photosynthesis occurs inside plant cells.
Chlorophyll	A substance inside chloroplasts that captures the light energy needed for photosynthesis.
Limiting Factor	A variable that slows down the rate of photosynthesis.
Aerobic Respiration	The process by which living organisms release energy stored in glucose.
Aerobic Respiration Word Equation	
	glucose + oxygen → carbon dioxide + water
Phloem	The vessels inside plants that transport glucose.

2. Plant Adaptations	
Adaptations	Features that something has to enable it to do a certain job.
Root Adaptations	They are branched and spread out, helping them to get a large volume of water.
Root Hair Cells	Increase the surface area of roots so that more water can be absorbed.
Xylem	The vessels inside plants that transport water.
Palisade Cells	Cells in a leaf adapted to carry out photosynthesis by having lots of chloroplasts.
Cuticle	A waxy layer on the outside of a leaf that stops them from losing too much water.
Stomata	Small holes in a leaf that open and close to allow gas exchange.
Guard Cells	The cells that open and close the stomata.
Gas Exchange	The swapping of different gases from inside the leaf and the atmosphere.

3. Plant Products	
Lipids	Insoluble substances that include fats and oils.
Polymer	A substance made up of a long chain of repeating groups of atoms (monomers).
Starch	A polymer formed by linking together glucose molecules.
Testing for Starch	Iodine solution will turn blue-black if starch is present.
Proteins	Polymer formed by joining long chains of amino acids.
Nitrates	Needed to make amino acids.

Fungicides	Kill fungi that cause plant disease
Herbicides	Kill weeds (weedkillers) that compete with crops for resources- they are selective so only kill the weeds
Variety	Group of plants bred for a certain characteristic.
Cross-Breeding	Breeding different varieties together to produce offspring with characteristics of both.
Selective Breeding	Choosing organisms to breed based on the characteristics that you want in the offspring.

4. Growing Crops	
Yield	The amount of useful product you get from a crop.
Fertilisers	Contain mineral salts that plants need to grow.
Decomposers	Microorganisms that break down manure and release mineral salts.
Pesticides	Kill pests
Insecticides	Kill insect pests

5. Farming Problems	
Fertiliser Problems	Can wash into rivers causing fast growth of algae which blocks out the light causing plants to die. Decomposers break down dead material using up oxygen.