

## CB6a – Photosynthesis

Word	Pronunciation	Meaning
biomass		The total mass in living organisms, usually shown as the mass after drying.
cellulose	<i>sell-you-IOWs</i>	Plant cell walls are made of tough cellulose, which support the cell and allow it to keep its shape.
chloroplast	<i>klor-O-plast</i>	A green disc containing chlorophyll, found in plant cells. This is where the plant makes glucose through photosynthesis.
endothermic reaction		A type of reaction in which energy from the surroundings is transferred to the products, e.g. photosynthesis.
food chain		A diagram that uses arrows to show the flow of energy through organisms that depend on each other for food.
gas exchange		A process in which one gas diffuses across a membrane and another gas diffuses in the opposite direction.
glucose	<i>glue-cO's</i>	The sugar produced by photosynthesis and needed for respiration.
guard cell	<i>gard sell</i>	A pair of guard cells open and close plant stomata.
lipid		A substance in a large group of compounds that includes fats and oils.
palisade cell	<i>pal-iss-ayd sell</i>	Tall, column-shaped cell near the upper surface of a plant leaf.
photosynthesis	<i>fOw-tow-sinth-e-sis</i>	A series of enzyme-catalysed reactions carried out in the green parts of plants. Carbon dioxide and water combine to form glucose. This process requires energy transferred by light.
polymer		A long-chain molecule made by joining many smaller molecules (monomers) together.
producer	<i>prod-you-ser</i>	An organism such as a plant that makes its own food using photosynthesis.
protein	<i>prO-teen</i>	A polymer made up of amino acids.
protist	<i>prO-tist</i>	An organism that belongs to a kingdom of eukaryotic and mainly single-celled organisms (also called a protoctist).
respiration	<i>res-per-ay-shun</i>	A series of reactions occurring in all living cells, in which glucose is broken down to release energy.
starch		A polymer carbohydrate that is made by the joining together of glucose molecules.
stoma	<i>stO-ma</i>	A tiny pore in the lower surface of a leaf, which, when open, allows gases to diffuse into and out of the leaf. Plural is stomata.
storage organ		A plant organ used to store energy-rich substances such as starch – for example, a potato.
sucrose	<i>soo-crO's</i>	The type of sugar found in the phloem of plants and used as table sugar.

## CB6b – Factors that affect photosynthesis

Word	Pronunciation	Meaning
concentration	<i>con-sen-tray-shun</i>	The amount of something found in a certain volume of another substance. For example, the amount of a solute dissolved in a certain volume of solvent.
direct proportion		A linear relationship in which the percentage change in a variable occurs with an equal percentage change in another variable. A direct proportion is seen as a straight line through the origin when the two variables are plotted on a graph.
inverse proportion		A non-linear relationship where one variable decreases in size at the same rate as another increases.
inverse square law		A mathematical relationship in which a quantity varies in inverse proportion to the square of the distance from the source of the quantity.
limiting factor		A single factor that, when in short supply, can limit the rate of a process such as photosynthesis.
linear relationship		A relationship between two variables (quantities) shown by a straight line on a graph.
rate	<i>rayt</i>	How quickly something happens.

## CB6c – Absorbing water and mineral ions

Word	Pronunciation	Meaning
active transport		The movement of particles across a cell membrane from a region of lower concentration to a region of higher concentration ( <i>against</i> the concentration gradient). This process requires energy.
concentration gradient	<i>con-sen-tray-shun</i> <i>gray-dee-ent</i>	The difference between two concentrations.
diffusion	<i>diff-you-shun</i>	The random movement and spreading of particles. There is a net (overall) diffusion of particles from regions of higher concentration to regions of lower concentration.
fluid		A liquid or a gas.
mineral ion		Ion from a naturally occurring salt.
nitrate	<i>ny-trayt</i>	A compound that contains nitrogen in the form of a nitrate ion.
osmosis	<i>os-mO-sis</i>	The overall movement of <i>solvent</i> molecules in a solution across a partially permeable membrane, from a dilute solution to a more concentrated one.
partially permeable membrane		Describes a membrane that will allow certain particles to pass through it but not others. Another term for semi-permeable membrane.
protein	<i>prO-teen</i>	A polymer made up of amino acids.
root hair cell		A cell found on the surface of plant roots that has a large surface area to absorb water and dissolved mineral salts quickly from the soil.
wilt		Drooping of parts of a plant caused by a lack of water.

## CB6d – Transpiration and translocation

Word	Pronunciation	Meaning
companion cell		A specialised cell located in the phloem tissue of plants. They pump sucrose into sieve cells.
lignin		A type of polymer that is combined with cellulose in some plant cell walls to make the cells woody, e.g. in xylem cells.
phloem tissue	<i>flow-em</i>	Living tissue formed of sieve tubes and companion cells that transports sugars and other soluble compounds around a plant.
potometer	<i>pot-om-et-er</i>	A device used for measuring the rate of water uptake by a plant.
sieve tube/cell	<i>siv</i>	Tubes formed of phloem sieve cells (so called because the cells have holes in their ends). The tubes carry sugars and other soluble compounds around the plant.
translocation	<i>trans-low-kay-shun</i>	The transport of sugars (mainly sucrose) and other soluble compounds in the phloem tissue of a plant.
transpiration	<i>trans-per-ay-shun</i>	The flow of water into a root, up the stem and out of the leaves.
xylem vessel/cell	<i>zy-lem</i>	A long, thick-walled tube found in plants, formed from many dead xylem cells. The vessels carry water and dissolved mineral salts through the plant.