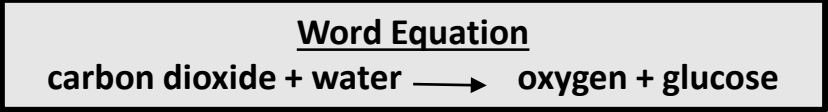


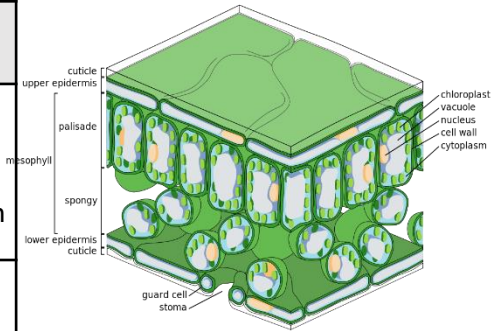
Photosynthesis



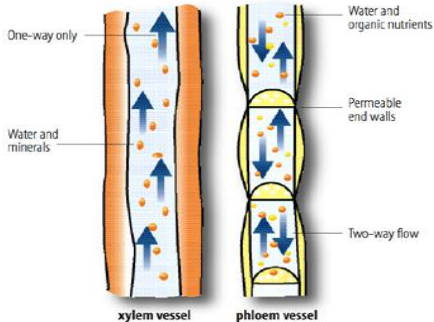
Section 1- Process of Photosynthesis	
Key Word	Definition
1 Photosynthesis	A chemical, endothermic , reaction which takes place in plants and algae, which produces a source of food.
2 Chloroplasts	An organelle inside the cell- where photosynthesis takes place.
3 Chlorophyll	The green substance inside chloroplasts which absorbs light .
4 Glucose	A water-soluble sugar , which contains six carbons, used in respiration and can be made by photosynthesis.
5 Endothermic Reaction	Photosynthesis requires an input of energy from the environment.

Section 2- Leaf Adaptations	
Structure	Adaptation for Photosynthesis
6 Leaf surface	The leaf itself is broad and thin, to give a large surface area for light to fall on and short diffusion distances for gases.
7 Veins	Carry water from xylem in the plant, to the cells of the leaves and remove products of photosynthesis in the phloem .
8 Air Spaces	Allow carbon dioxide to get into the cells and oxygen to leave the cells, by diffusion.
9 Guard Cells	These cells open and close the stomata (holes in the leaf), to regulate gas exchange.

10 Leaf Structure

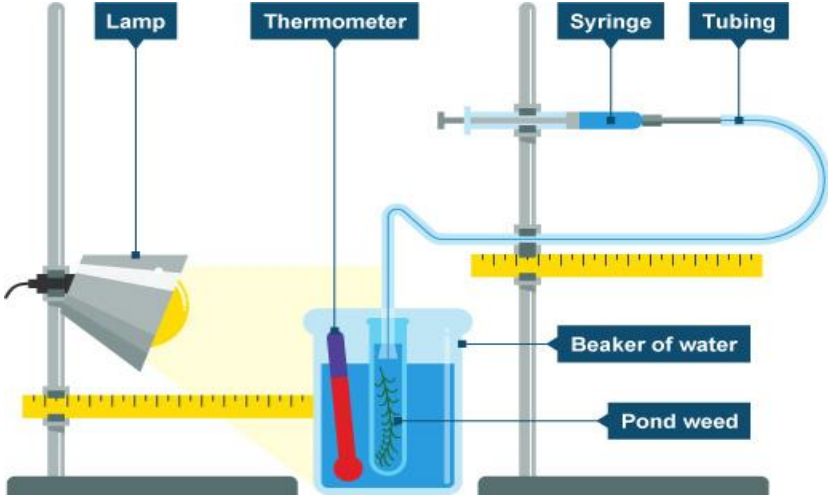


11 Xylem & Phloem



Section 3- Rate of Photosynthesis	
Limiting Factor	
12	Light
13	Temperature
14	Carbon dioxide concentration
15	Chlorophyll levels

Glucose is a type of sugar used for respiration/ making other substances that act as stores of energy (starch) and making new materials for growth. Glucose is turned into cellulose (for cell walls), fats and proteins. To make proteins mineral salts called nitrates are needed



Light Intensity & Rate of Photosynthesis. The number of bubbles is measured by a syringe or upturned test tube.

Section 4- Plant Materials & Glucose		
Material	Use in Plant	Test?
16 Cellulose	A storage molecule made of glucose, strengthens cell walls.	
17 Starch	An insoluble molecule used for energy storage in plants.	Iodine- boil leaves in ethanol, look for blue-black colour.
18 Nitrates	Plants combine nitrates with glucose & other minerals to make amino acids .	Biuret Test for Proteins- purple colour change.
19 Lipids	Glucose is used to build up fats & oils, which are used as an energy store, often in seeds .	