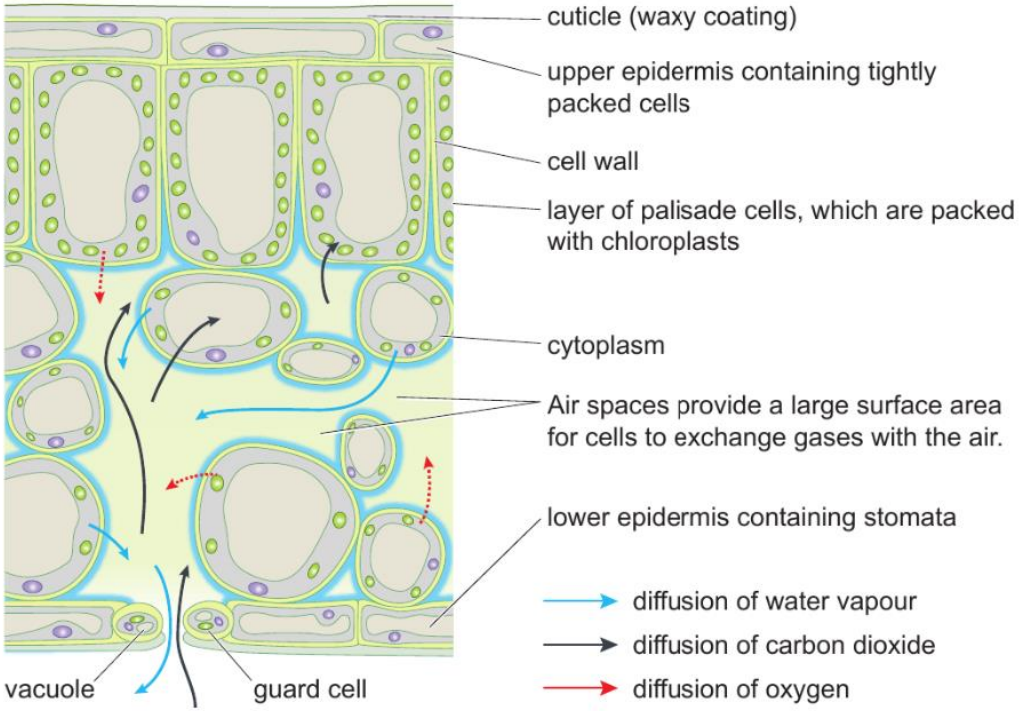
St Michael's CE High

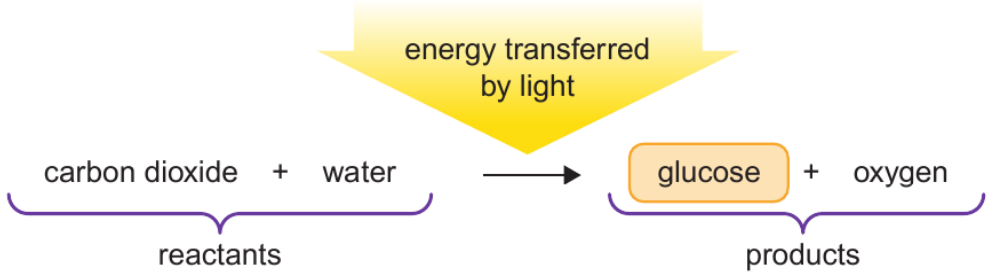
Knowledge Organiser: Biology, CB6

Jesus grew in wisdom and stature" Luke 2:52

1	Plants manufacture glucose from carbon dioxide and water using energy transferred from the environment (endothermic) to the chloroplasts by light
2	Plants use glucose for respiration. It can be stored an insoluble starch, used for making cellulose for cell walls or combined with nitrates from the soil to form amino acids and proteins.
3	The rate of photosynthesis is affected by temperature, light intensity and carbon dioxide concentration.
4	The rate of photosynthesis is proportional to light intensity. It obeys the inverse square law which means if you double the distance between the plant and light source you quarter the light intensity
5	As the temperature of the environment the plant is in increases, the rate of photosynthesis increases (up to a point) as there is more energy for the chemical reaction
6	As light intensity increases the rate of photosynthesis increases (up to a point) as more energy is available for the chemical reaction
7	As carbon dioxide concentration increases, the rate of photosynthesis increases (up to a point) as carbon dioxide is needed for plants to make glucose.
8	Transpiration is the rate at which water is lost from the leaves of a plant. The transpiration stream is the column of water moving through the roots, stem and leaves
9	Temperature, humidity, air movement and light intensity affect the rate of transpiration

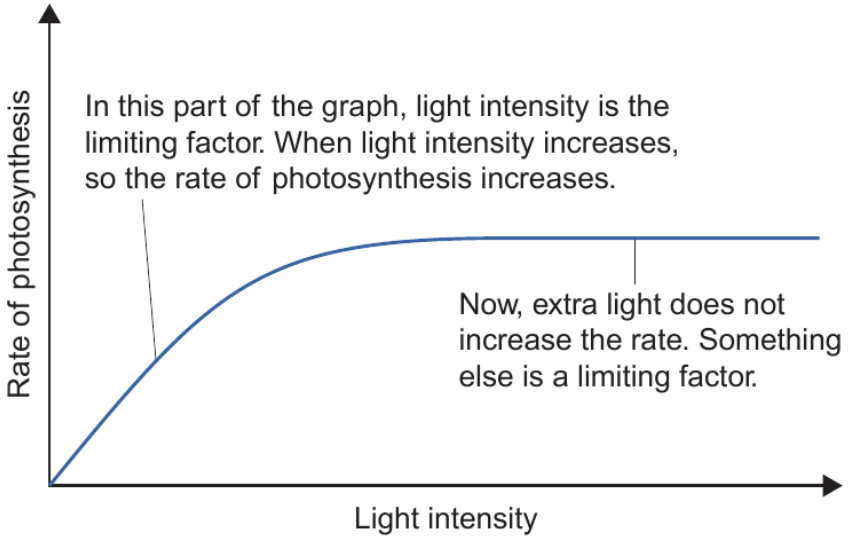


C cross-section through a leaf

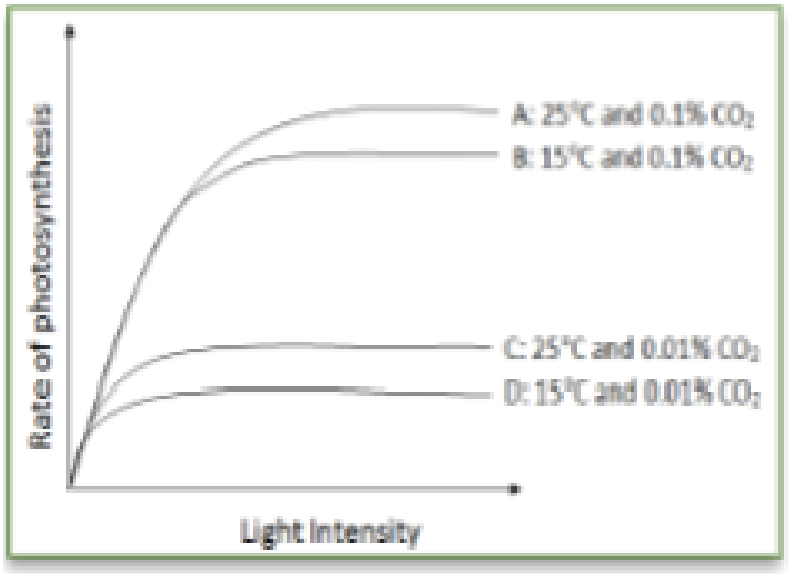


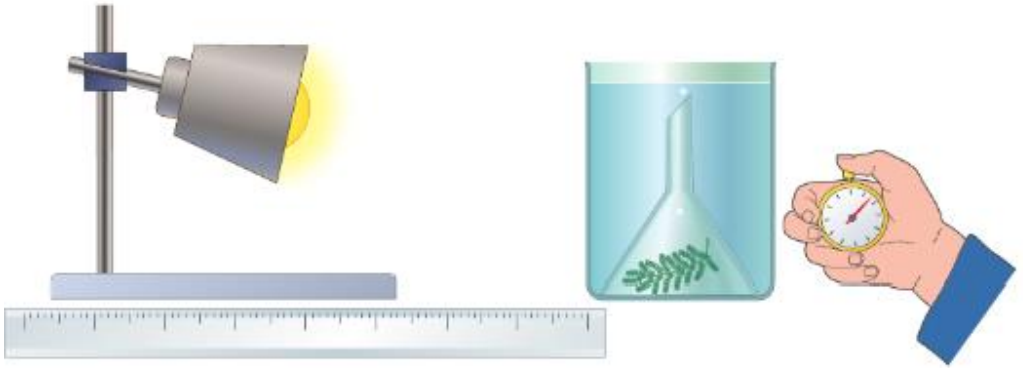
Knowledge Organiser: Biology, CB6b

Jesus grew in wisdom and stature" Luke 2:52



C An increase in light intensity increases the rate of photosynthesis until a limiting factor stops further increases.





C measuring the rate of photosynthesis in pondweed