

Plant structures and their functions

Photosynthesis

Producers make biomass

Plants and algae Start of food chains

Endothermic reaction

Light energy in $\text{CO}_2 + \text{water} \rightarrow \text{glucose} + \text{oxygen}$

Limiting factors

Temperature Light intensity CO_2 concentration

Interacting factors **Higher tier**

Shortest supply limits Plateaus on graphs

Core practical

Pondweed and lamp Bubbles per minute

Control temperature

Inverse square law **Higher tier**

$\text{Intensity} \propto 1 \div d^2$ $\text{Rate} \propto \text{intensity}$

Transport

Root hair cells

Large surface area Mitochondria Active transport

Xylem

Dead, lignified cells Water and mineral ions

Phloem

Living cells Sucrose Uses energy

Transpiration

Evaporation in leaf Diffusion through stomata

Transpiration stream

Stomata

Guard cells Open and close

Translocation

Leaves to growing regions Stores

Leaves and water

Water uptake factors

Light intensity Air movement Temperature

Potometer

Bubble movement $\text{Rate} = \text{distance} \div \text{time}$

Rate calculations

Mean of repeats Percentage change in mass