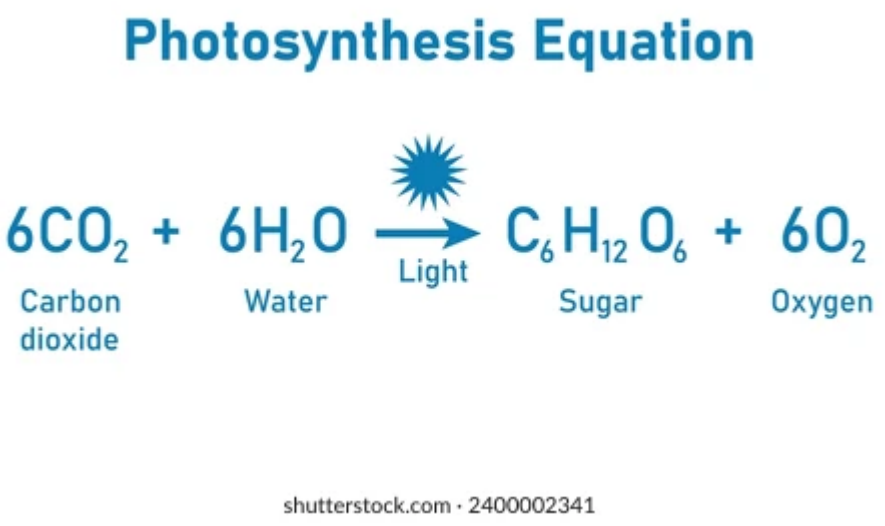
Biology

Photosynthesis

- Plants and algae make their own food using photosynthesis
- Energy from sunlight is used to convert carbon dioxide and water to form glucose and oxygen
- Photosynthesis is endothermic it requires energy

Where it happens

- It happens in chloroplast
- In chloroplast there is Chlorophyll absorbs light energy



- Glucose is used to make Biomass starch cellulose and protein
- Producers support the food chain by providing energy to consumers

Factors affecting photosynthesis

Limiting factors

- Light intensity, Photosynthesis rate increases with light until carbon dioxide or temperature limits it
- Carbon dioxide concentration , rate increases and a light or temperature limits it
- If the temperature is too low then it will slow the enzymes and if it is to high so it will de nature be enzyme

Inverse Square Law

L = 1/ d2

Where I is the light intensity D is the distance

Investigating photosynthesis

Using pondweed or algae ball

- Measure oxygen production, rate of photosynthesis is high
- Variables to control our temperature carbon dioxide concentration
- Change light distance to see affect on photosynthesis rate

Oxygen measurement

- Gas syringe for accurate volume
- Bubble counting is less accurate

Transport in plants

Xylem

- Dead cells, lignin reinforced ,no end walls
- Transports water and Minerals upward from the roots to the leaves
- Water movement is basically called transpiration stream

Phleom

- Living cells with pores in end walls
- Transport food both direction for immediate use or storage
- This process is called translocation

Transpiration

Loss of water from leaves mainly through stomata is called transpiration

Stomata

- Tiny pores on leaf surface for gas exchange
- Guard cells control opening
- Turget, stomata opens
- Flaccid, stomata is closed

Factors affecting the rate

- Light intensity

Brighter light so there will be more transpiration

- Temperature, Warner the temperature faster the evaporation
- air flow, Strong air flow that will lead to faster diffusion

Measuring transpiration

Polometer measures water uptake and it is proportional to transpiration