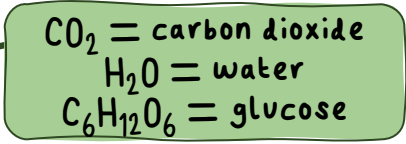
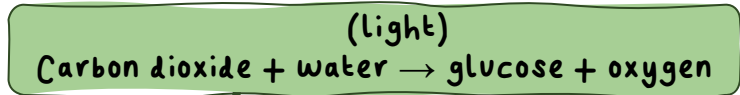




4.1 PHOTOSYNTHESIS

Photosynthetic reaction



Endothermic

Produces glucose

Glucose has a variety of different uses in a plant

Uses of glucose

Used to produce amino acids which are combined with nitrates (from soil) to produce proteins

Used in respiration

Used to produce cellulose for cell walls

Stored as starch (insoluble)

Used to produce fats/oils for storage

Rate of photosynthesis

Limiting factors

Determined by temperature, light intensity, carbon dioxide concentration and the amount of chlorophyll present

One of these factors will be limiting

Factors can interact, e.g. a higher light intensity can lead to a higher temperature

Light intensity ∝ 1/distance²

Light intensity obeys the inverse square law

Higher light intensity → more energy for photosynthesis

Increasing the supply of a limiting factor increases the rate of photosynthesis

Can be controlled using a greenhouse

Knowledge of these can help improve crop yield and make farming more efficient

KEY
‘Higher tier only’ written in orange.

AQA

