

### PHOTOSYNTHESIS

Photosynthesis - the process where some organisms are able to turn light energy into chemical energy

Organisms that use photosynthesis - producers

reaction of photosynthesis - endothermic reaction

Where does it take place? - in chloroplasts

word equation - Carbon Dioxide + water --> Glucose + Oxygen

Symbol equation -  $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

Effect of temperature on rate of photosynthesis - As temperature increases, the rate of photosynthesis. Once temperature exceeds the optimum, the rate of photosynthesis decreases as enzymes start to denature

Effect of light intensity on rate of photosynthesis - as light intensity increases, so does rate of photosynthesis (**Inverse square law: as distance from light source doubles, light intensity quarters**)

Effect of CO<sub>2</sub> concentration on rate of photosynthesis - as CO<sub>2</sub> concentration increases, so does rate of photosynthesis

LIMITING FACTOR - a factor that limits the rate of a reaction when there is not enough of it.

### PLANTS

Ways leaves are adapted for photosynthesis - thin which provides a short diffusion distance -spongy mesophyll layer has air pockets for efficient gas exchange -Palisade mesophyll layer has many chloroplasts for photosynthesis

what are mineral ions used for in plants? - growth

two common ions in plants - magnesium (Mg<sup>2+</sup>) and Nitrate (NO<sub>3</sub><sup>-</sup>)

why magnesium is used - used in chlorophyll

why nitrate is used - used in amino acids



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Not published yet.

Last updated 5th September, 2022.

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