

Photosynthesis - Quick Revision Notes

Definition:

- Process by which green plants, algae, and some bacteria convert light energy into chemical energy (glucose) using CO₂ and H₂O

Equation:



Key Organelles:

- Chloroplasts: Contain chlorophyll, the main pigment absorbing light.
- Thylakoids: Site of light-dependent reactions.
- Stroma: Site of Calvin cycle (light-independent reactions).

Stages:

1. Light-dependent reactions (in thylakoids):

- Absorb sunlight using chlorophyll.
- Split water → O₂ released.
- Produce ATP & NADPH.

2. Calvin cycle / Light-independent reactions (in stroma):

- Use CO₂, ATP, and NADPH to make glucose.
- Enzyme RuBisCO fixes CO₂.

Important Points:

- Oxygen is a byproduct of photosynthesis.
- Rate depends on light intensity, CO₂ concentration, temperature, and water availability.
- Two types of pigments: chlorophyll a (primary) and chlorophyll b (accessory).
- Some plants use C₄ or CAM pathways to reduce photorespiration.

Quick Mnemonics:

- CO₂ → Calvin cycle
- H₂O → O₂ released