

BIOLOGY PROJECT

Photosynthesis

How plants turn light into food

Student Name · Biology · Class XI





Agenda

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Concepts

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Summary



What is photosynthesis?

Photosynthesis is the process by which green plants use sunlight, water and carbon dioxide to make glucose and release oxygen.

It takes place mainly in the leaves, inside chloroplasts that contain the green pigment chlorophyll. Almost all life on Earth depends on it.



Diagram



Key concepts

1

Chlorophyll

Green pigment that absorbs light energy.

2

Light reactions

Water is split and energy is captured.

3

Calvin cycle

Carbon dioxide is fixed into glucose.



The process

1 Absorb

Chlorophyll absorbs sunlight

2 Split

Water splits, oxygen released

3 Store

Energy stored as ATP and NADPH

4 Build

CO₂ turned into glucose



Experiment

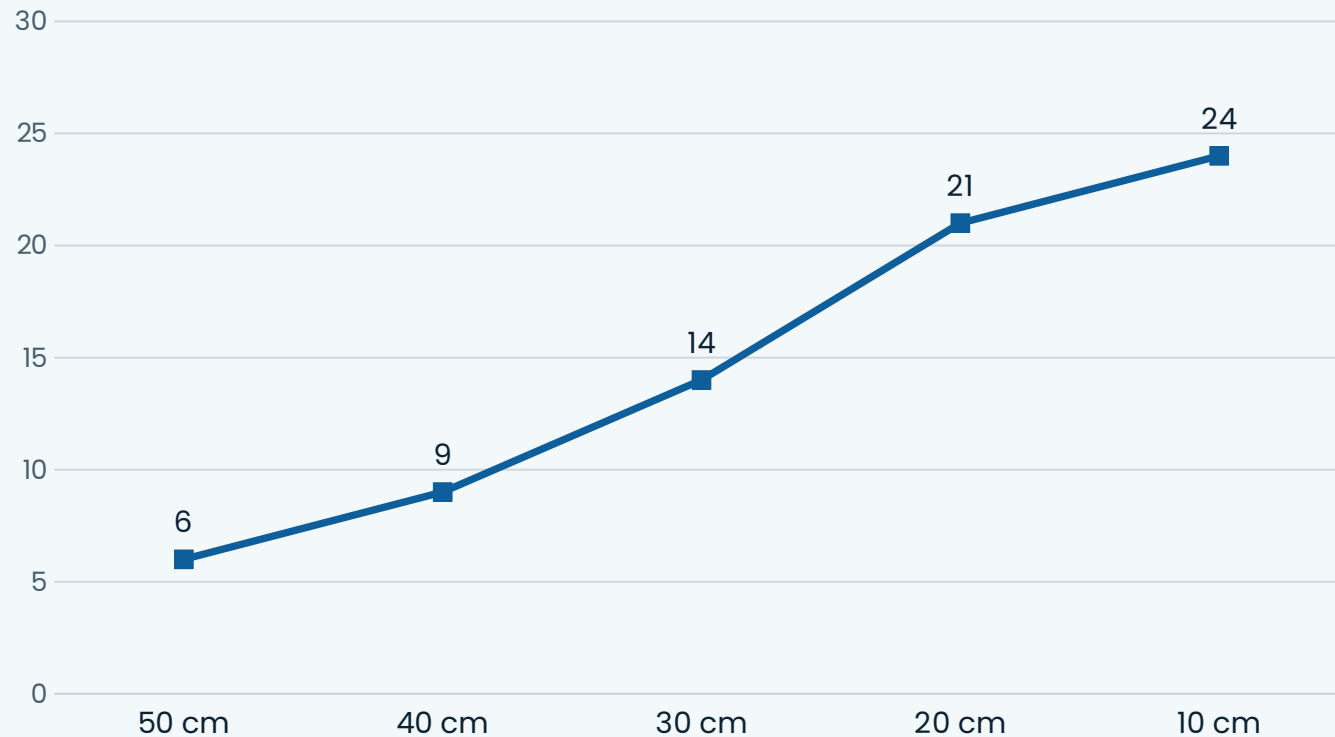
- Place a water plant in a beaker under a lamp
- Count oxygen bubbles per minute
- Move the lamp closer in steps
- Record and plot the bubble rate

SAFETY

Keep water away from the lamp and wires.



Bubble rate vs light distance



More light gives faster photosynthesis until another factor limits it (sample data).

Sample data for illustration — replace with your own figures.



Real-world applications



Image 1

Agriculture

Greenhouses boost light and CO₂



Image 2

Climate

Forests absorb carbon dioxide



Image 3

Energy research

Artificial photosynthesis



Quick facts

6CO_2

$+ 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

~50%

of Earth's oxygen from
ocean algae

1%

of sunlight used by
most plants



Summary

- Plants make food using light, water and CO₂
- Chlorophyll in chloroplasts captures light
- Oxygen is released as a by-product
- Light, CO₂ and temperature control the rate

Thank you

Questions?

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