

BIOLOGY PROJECT

Photosynthesis



How plants turn light into food

Student Name • Biology • Class XI

Agenda

01

Introduction

02

Concepts

03

Experiment

04

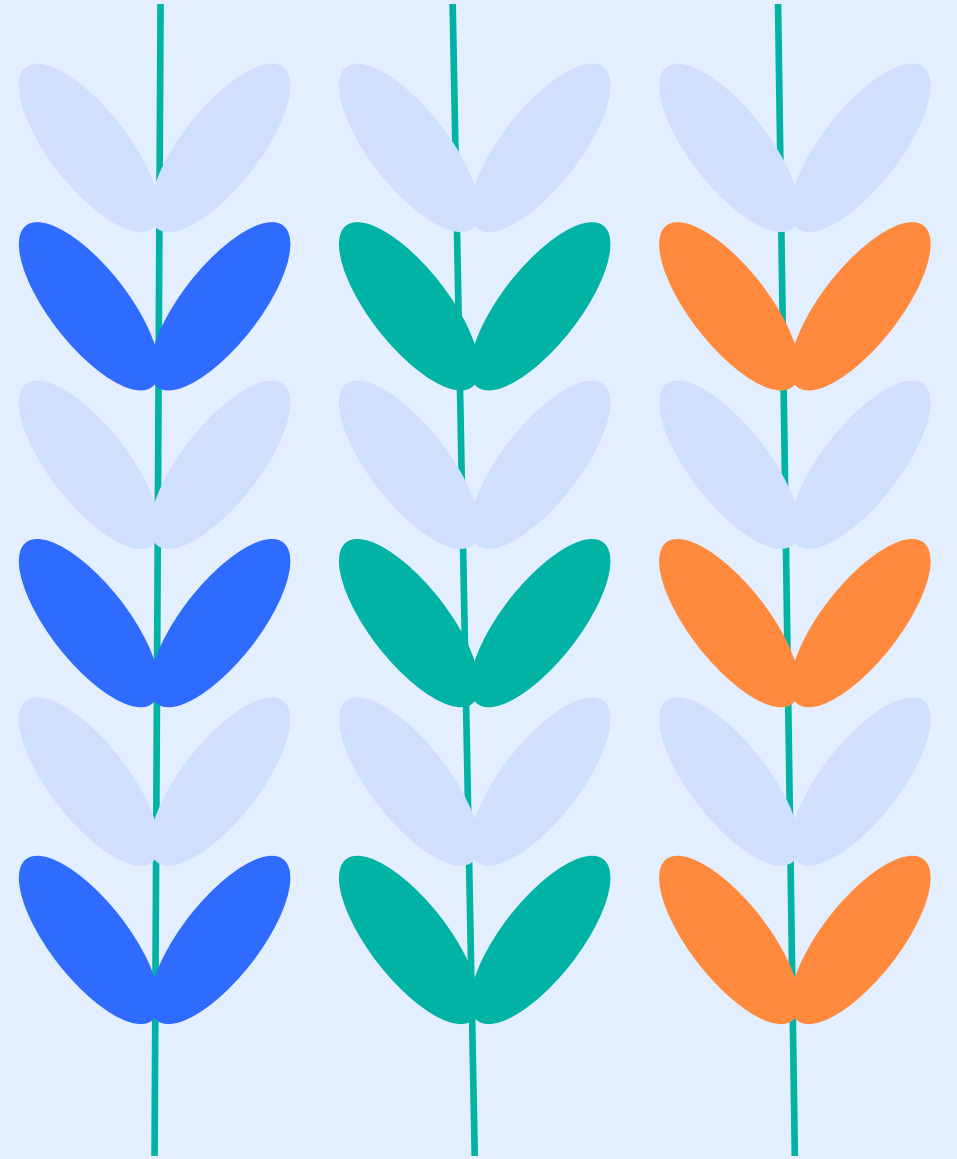
Applications

05

Summary

01

INTRODUC TION



What is photosynthesis?



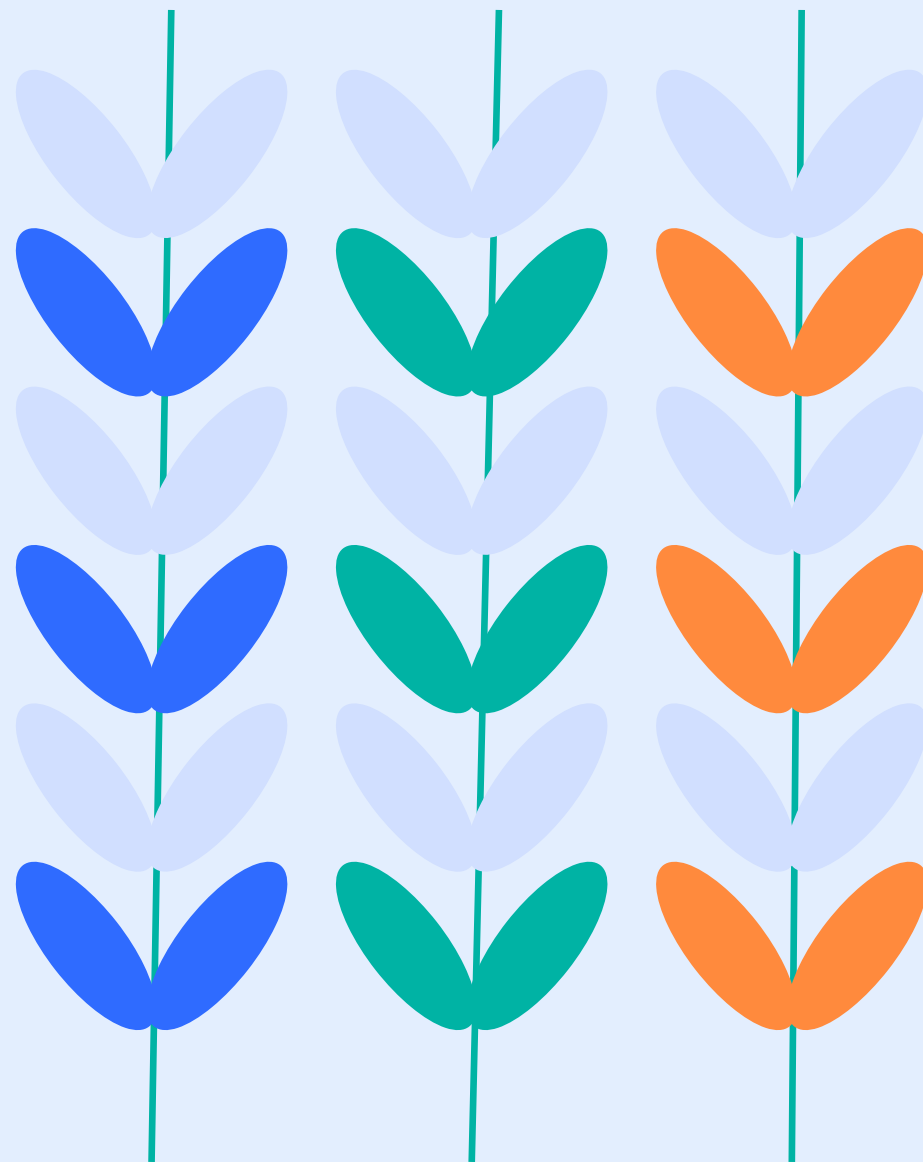
Diagram

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.

02

CONCEPTS



Key concepts

01

Chlorophyll

Green pigment that absorbs light energy.

02

Light reactions

Water is split and energy is captured.

03

Calvin cycle

Carbon dioxide is fixed into glucose.

The process



Absorb

Chlorophyll absorbs
sunlight



Split

Water splits, oxygen
released



Store

Energy stored as ATP and
NADPH



Build

CO₂ turned into glucose

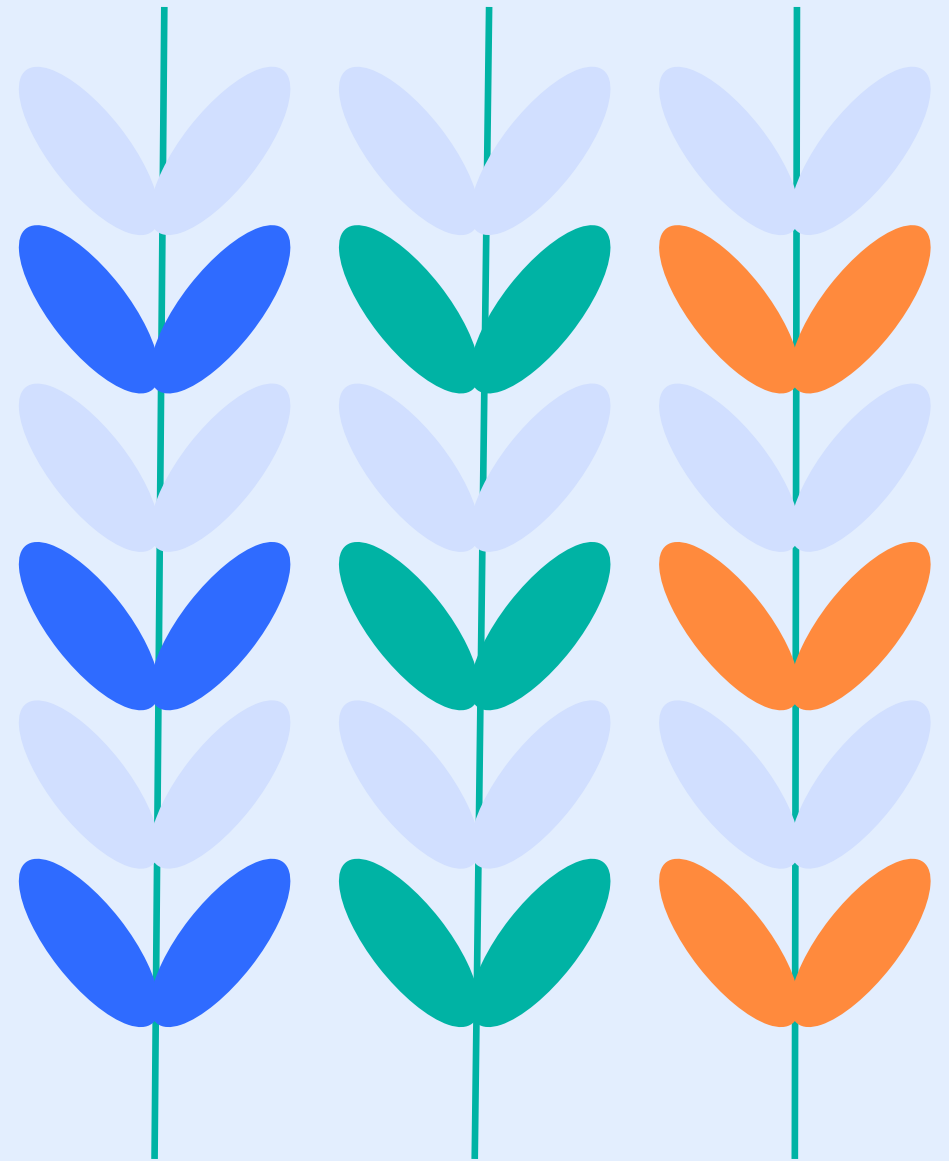
Factors affecting the rate

Factor	Effect	Limit
Light intensity	Rate rises	Levels off when saturated
CO ₂ level	Rate rises	Levels off at high CO ₂
Temperature	Rises then falls	Enzymes denature above ~40 °C

Reference values for illustration.

03

EXPERIMENT



TRY IT

Experiment

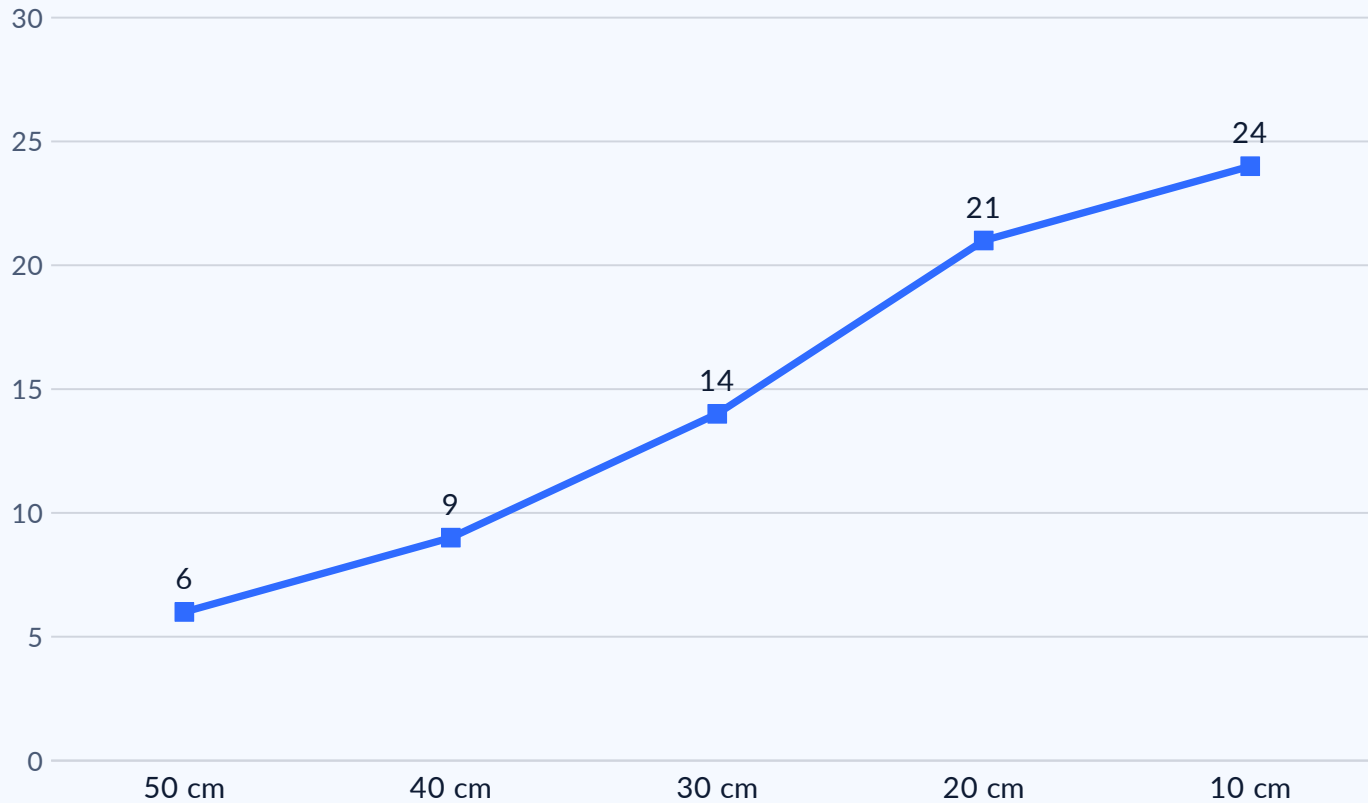
- Place a water plant in a beaker under a lamp
- Count oxygen bubbles per minute
- Move the lamp closer in steps
- Record and plot the bubble rate

SAFETY

**Keep water away
from the lamp and
wires.**

RESULTS

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



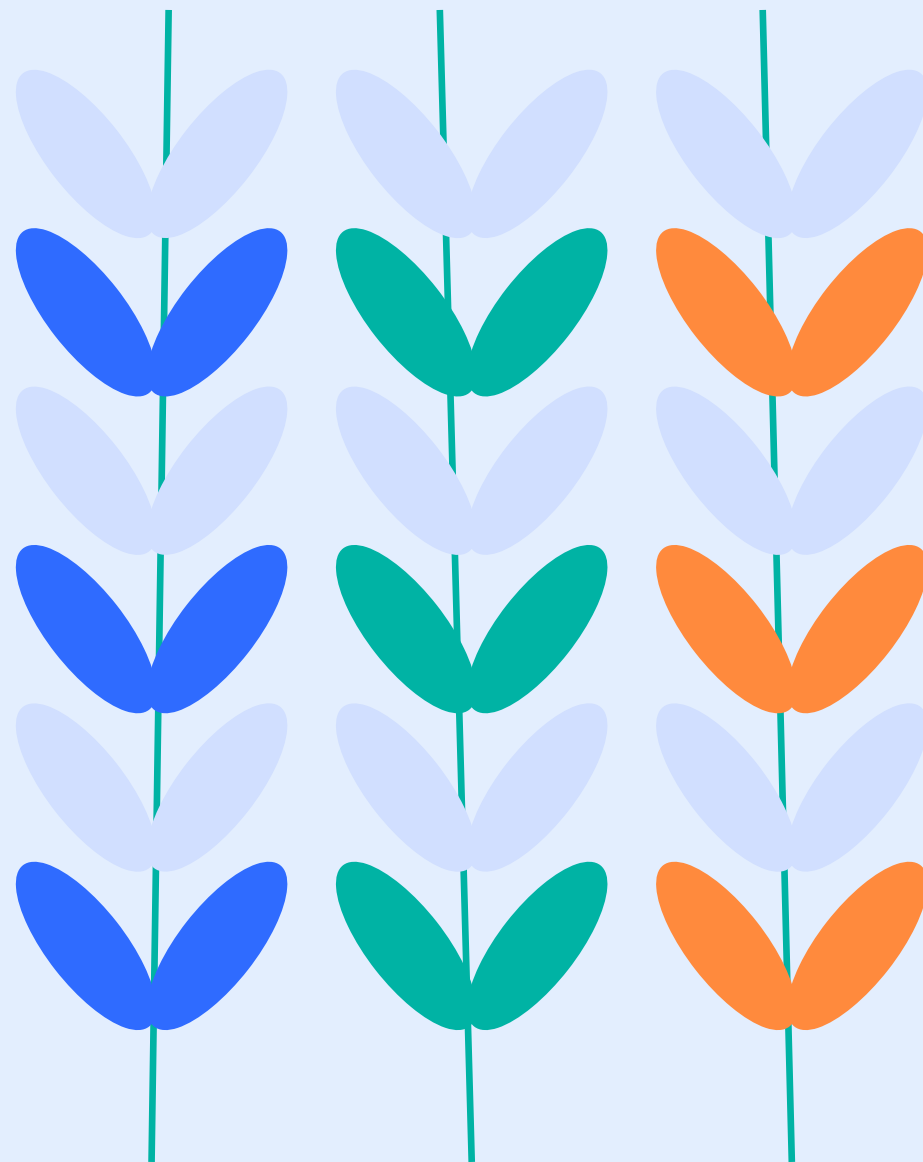
Image 3

Energy research

Artificial photosynthesis

04

SUMMARY



REMEMBER

Quick facts



~50%

of Earth's oxygen from
ocean algae

1%

of sunlight used by most
plants

Summary

- Plants make food using light, water and CO_2
- Chlorophyll in chloroplasts captures light
- Oxygen is released as a by-product
- Light, CO_2 and temperature control the rate



Image

Thank you

Questions?

Student Name • Biology

