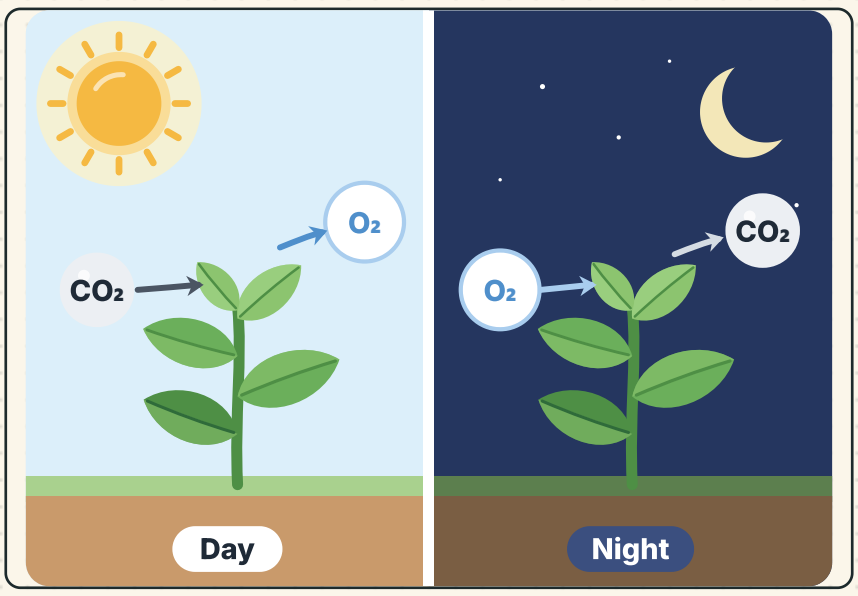
PHOTOSYNTHESIS · PART 4 OF 9 · AGES 11–16

Photosynthesis vs Respiration

One stores energy in sugar, the other releases it. Plants do both, and the products of one are the ingredients of the other.



	Photosynthesis	Respiration
WHERE	In chloroplasts, so only in green cells of plants and algae	Mainly in mitochondria, in every living cell of plants and animals
WHEN	Only when there is light	All the time, day and night
TAKES IN	Carbon dioxide and water, plus light energy	Glucose and oxygen
GIVES OUT	Glucose and oxygen	Carbon dioxide and water, plus energy for the cell
ENERGY	Endothermic: stores light energy as chemical energy in glucose	Exothermic: releases the energy stored in glucose
EQUATION	$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$	$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

The compensation point

In dim light, a plant photosynthesises exactly as fast as it respires, so there is no overall exchange of carbon dioxide or oxygen.

NEXT IN THE SERIES
5. Photosynthesis Key Terms and Equations

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