

Photosynthesis State the overall equation of photosynthesis.	Photosynthesis Where does the oxygen released in photosynthesis come from?
Photosynthesis What is photophosphorylation?	Photosynthesis Why is ATP an immediate source of energy?
Photosynthesis Where do the light-dependent reactions take place?	Photosynthesis What is photolysis?
Photosynthesis What are the products of non-cyclic photophosphorylation?	Photosynthesis What is made in cyclic photophosphorylation?

From water, by photolysis in the light-dependent reactions.

$6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$, using light energy and chlorophyll.

Its terminal phosphate is hydrolysed in a single step, quickly releasing a small, usable amount of energy.

The addition of phosphate to ADP to make ATP, using light energy.

The light-driven splitting of water: $2\text{H}_2\text{O} \rightarrow 4\text{H}^+ + 4\text{e}^- + \text{O}_2$. The electrons replace those lost from chlorophyll.

On the thylakoid membranes (in the grana) of the chloroplast.

ATP only. Electrons return to photosystem I; no reduced NADP and no oxygen are made.

ATP, reduced NADP and oxygen.

Photosynthesis

Where does the Calvin cycle take place?

Photosynthesis

Name the enzyme and the 5C compound in carbon fixation.

Photosynthesis

What does GP become, and what is needed?

Photosynthesis

Name the biological molecules made from the products of photosynthesis.

Photosynthesis

What are grana?

Photosynthesis

What does the stroma contain?

Photosynthesis

What is the chloroplast envelope?

Photosynthesis

What is an absorption spectrum?

Rubisco catalyses the combination of carbon dioxide with RuBP (a 5C compound) to give two molecules of GP.

In the stroma of the chloroplast.

Polysaccharides, amino acids and proteins, lipids and nucleic acids.

GP is reduced to GALP using ATP and reduced NADP.

Enzymes of the Calvin cycle (including rubisco), starch grains, lipid droplets, DNA and ribosomes.

Stacks of thylakoids that give a large surface area for photosynthetic pigments.

A graph of how much light of different wavelengths a pigment absorbs.

Two membranes around the chloroplast that control what enters and leaves.

Photosynthesis

What is an action spectrum?

Photosynthesis

How is Rf calculated?

Photosynthesis

Why is pencil used for the origin line in chromatography?

Photosynthesis

How is the rate of photosynthesis measured with an aquatic plant?

Photosynthesis

Why is a heat shield used between a lamp and the plant?

Photosynthesis

How is carbon dioxide availability varied in core practical 10?

Distance moved by the pigment $\div$ distance moved by the solvent front. It has no units.

A graph of the rate of photosynthesis at different wavelengths of light.

Count bubbles of oxygen, or measure the volume of oxygen released, per unit time.

Pencil does not dissolve in the solvent or move with it, unlike ink.

By using different concentrations of sodium hydrogencarbonate solution.

To prevent the lamp raising the temperature, so that temperature is controlled when light intensity is varied.