

Photosynthesis

Define photosynthesis.

Photosynthesis

State the word equation for photosynthesis.

Photosynthesis **Supplement**

What is chlorophyll and what does it do?

Photosynthesis **Supplement**

State the balanced chemical equation for photosynthesis.

Photosynthesis

Why is a plant destarched before a starch test investigation?

Photosynthesis

Why is a leaf heated in ethanol before adding iodine?

Photosynthesis

How does soda lime help to show that carbon dioxide is needed?

Photosynthesis **Supplement**

Name three variables you could change to investigate the rate of photosynthesis.

Carbon dioxide + water → glucose + oxygen, in the presence of light and chlorophyll.

The process by which plants synthesise carbohydrates from raw materials using energy from light.



A green pigment found in chloroplasts. It transfers energy from light into energy in chemicals, for the synthesis of carbohydrates.

To remove chlorophyll, so the colour change with iodine can be seen.

To remove existing starch, so any starch found was made during the experiment.
Keep it in the dark for 24 to 48 hours.

Light intensity (lamp distance), carbon dioxide concentration (sodium hydrogencarbonate), temperature (water bath).

It absorbs carbon dioxide. The leaf without carbon dioxide makes no starch and stays orange-brown.

Photosynthesis **Supplement**

How can you measure the rate of photosynthesis in pondweed?

Photosynthesis **Supplement**

What are the colours of hydrogencarbonate indicator?

Photosynthesis **Supplement**

What colour does the indicator turn with a plant in the dark, and why?

Photosynthesis **Supplement**

What colour does the indicator turn with a plant in bright light, and why?

Leaf structure

What do stomata and guard cells do?

Leaf structure

What do xylem and phloem do in a leaf?

Yellow (high CO₂), red (atmospheric CO₂),
purple (low CO₂).

Count the bubbles of oxygen from the cut
stem per minute, or measure the volume of
gas collected.

Purple. Photosynthesis takes up carbon
dioxide faster than respiration releases it.

Yellow. The plant respire, releasing carbon
dioxide, and there is no photosynthesis.

Xylem brings water to the leaf. Phloem
carries sucrose away.

Stomata are pores that let gases diffuse in
and out. Guard cells open and close them.