

Photosynthesis

KS3 Biology · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Write the word summary for photosynthesis.

Step 1 · Reactants (what goes in)

Carbon dioxide (from the air, through stomata) and water (from the soil, through roots).

Step 2 · Energy source

Light energy, absorbed by chlorophyll in chloroplasts. Write it over the arrow — it is not a substance.

Step 3 · Products (what is made)

Glucose (a sugar) and oxygen.

Answer: carbon dioxide + water → glucose + oxygen (light energy, chlorophyll)

Check: Count the reactants (2) and products (2).

2. Now try one with the steps

Explain why almost all life on Earth depends on photosynthesis.

Step 1 · Food

Step 2 · Oxygen

Step 3 · Fuels

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Name the two reactants of photosynthesis. [2]

2. Name the two products of photosynthesis. [2]

3. Which green substance absorbs light for photosynthesis? [1]

4. In which part of the cell does photosynthesis happen? [1]
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5. Write the word summary for photosynthesis. [2]
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6. How does carbon dioxide get into a leaf? [1]
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7. What do plants store glucose as? [1]
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8. Why is light written above the arrow and not reactant? [1]
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9. Why is ethanol used in the starch test? [1]
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10. Pondweed gave 48, 30, 17, 10 and 6 bubbles per minute with the lamp at 10, 20, 30, 40 and 50 cm. How many bubbles per minute were produced at 30 cm? [1]
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11. Describe the pattern in the pondweed results. [2]
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12. Moving the lamp from 20 cm to 10 cm changed the rate from 30 to 48 bubbles per minute. By how many bubbles did it increase? [1]
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13. Give ONE control variable in the pondweed experiment. [1]
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14. Explain why counting bubbles is not a perfectly accurate way to measure the rate of photosynthesis. [2]
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4. Before you hand it in

"Plants get their food from the soil."

Plants MAKE glucose by photosynthesis in their leaves.

Writing 'sunlight' or 'chlorophyll'

Write light energy and chlorophyll above or below the arrow.

"Plants make oxygen instead of respiring."

Plants photosynthesise in light AND respire all the time. In bright light, they make more oxygen than they use.

Heating ethanol over a Bunsen flame.

Stand the tube of ethanol in a beaker of hot water from a kettle, with all flames turned off.