

Ecosystems Cycles

GCSE Biology · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Describe how carbon in the atmosphere can become part of an animal, and return to the atmosphere. (4 marks)

Step 1 · Photosynthesis

Plants take in CO₂ and make glucose.

Step 2 · Feeding

An animal eats the plant; carbon compounds become part of its body.

Step 3 · Respiration

The animal respires, releasing CO₂.

Step 4 · Death and decay

When it dies, decomposers break it down and release CO₂ through respiration.

Answer: Photosynthesis → feeding → respiration / decomposition → CO₂

Check: Name the process at each step.

2. Now try one with the steps

Explain why decomposers are important in the carbon cycle. (2 marks)

Step 1 · Break down

Step 2 · Return

Answer:

3. Practice

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

1. Name the process by which plants remove carbon dioxide from the atmosphere. [1]

2. Name two processes that return carbon dioxide to the atmosphere. [2]

3. Name two types of decomposer. [2]

4. What does the water cycle provide for plants and animals on land? [1]
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5. Name the process by which water vapour leaves plant leaves. [1]
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6. Explain why materials must be recycled in an ecosystem. [2]
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7. Describe the water cycle. [4]
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8. Explain how fossil fuels contain carbon from millions of years ago. [2]
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9. CO₂ rose from 315 ppm to 420 ppm. Calculate the percentage increase to 1 decimal place. [2]
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10. Explain why CO₂ levels fall slightly in summer in the Northern Hemisphere. [2]
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11. Explain how decomposers return mineral ions to the soil. [2]
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12. Explain why the carbon cycle is out of balance today. [2]
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13. A tree stores 20 kg of carbon per year. How many kilograms do 150 trees store in a year? [1]
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14. Explain how the water cycle and the carbon cycle are linked through plants. [2]
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4. Before you hand it in

"Plants don't respire, they only photosynthesise."

Plants respire, releasing CO₂; in daylight photosynthesis usually takes in more than respiration releases.

"Decomposers are a type of consumer that eats dead things."

Decomposers secrete enzymes onto dead material and absorb the soluble products.

"The water cycle starts with rain."

Describe it loop: evaporation and transpiration → condensation → precipitation → run-off.