AQA GCSE Biology | 8461

SPECIFICATION POINT 4.7.2.2

How materials are cycled

Past-paper questions

Tier	**Foundation**
Question groups	**4**
Available paper years	**2008–2015**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

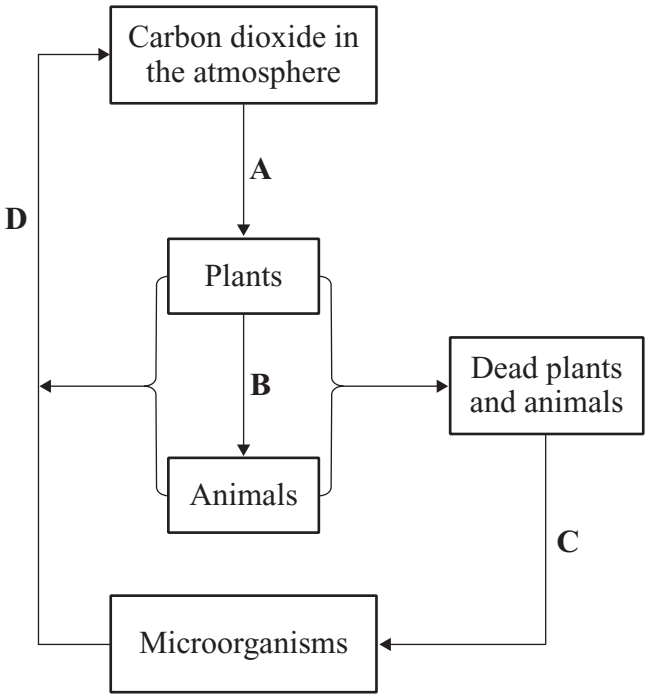
Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

4.7.2.2 How materials are cycled

Question 01

January 2008 | BLY2F | Original Q7 | Legacy

7 The diagram shows part of the carbon cycle.



(a) Which letter, **A**, **B**, **C** or **D**, represents:

(i) respiration .....

(1 mark)

(ii) photosynthesis? .....

(1 mark)

4.7.2.2 How materials are cycled

Question 01 · continued

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(b) Local authorities are encouraging people to recycle vegetable waste by converting it into compost.

Compost is made by mixing the vegetable waste with soil in a large container.

(i) Decay occurs more quickly if the container has holes in the sides.

Explain why.

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(2 marks)

(ii) Spreading compost on the soil between plants leads to better growth of the plants.

Explain why.

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(1 mark)

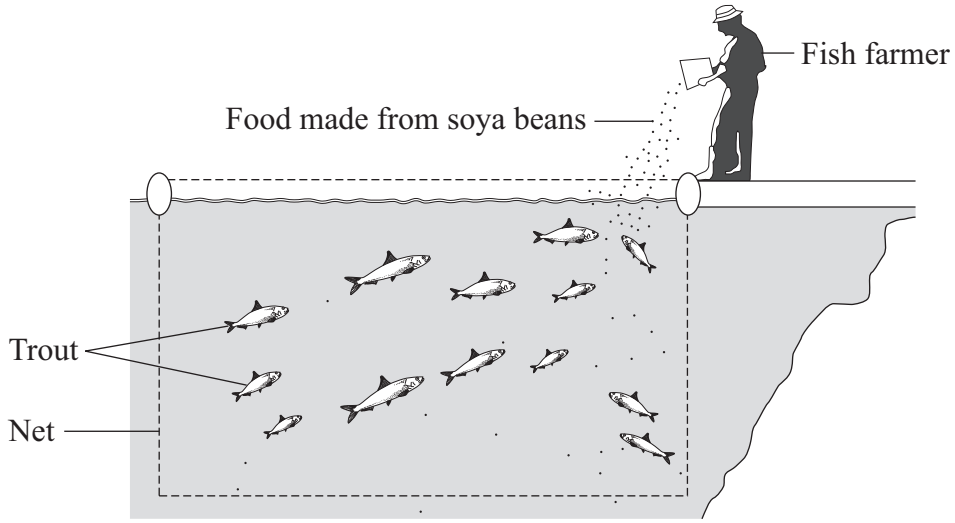
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4.7.2.2 How materials are cycled

Question 02

January 2019 | BLY2F | Original Q6 | Legacy

6 A fish farmer keeps trout in a large net in a lake.



The fish farmer feeds the trout on food made from soya beans.

When the trout are large enough the farmer sells them for food for people.

6 (a) Draw a pyramid of biomass for the three organisms in this food chain.

Label the pyramid.

(2 marks)

4.7.2.2 How materials are cycled

Question 02 · continued

for mark

6 (b) It would be more energy efficient if people ate the soya beans rather than eating the trout.

Which **two** of the following are reasons for this?

Tick (✓) **two** boxes.

Some people do not like eating animals such as trout. ☐

The trout release energy when they respire. ☐

Soya bean plants release energy when they respire. ☐

Some energy will be lost in waste from the trout. ☐

Soya bean plants absorb energy during photosynthesis. ☐

(2 marks)

6 (c) Suggest **one** advantage to the fish farmer of keeping the trout in a large net instead of letting them swim freely in the lake.

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(1 mark)

6 (d) Some trout die before they are large enough to be sold.
The dead trout contain carbon.

Use your knowledge of the carbon cycle to describe how this carbon is returned to the atmosphere after the trout die.

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(2 marks)

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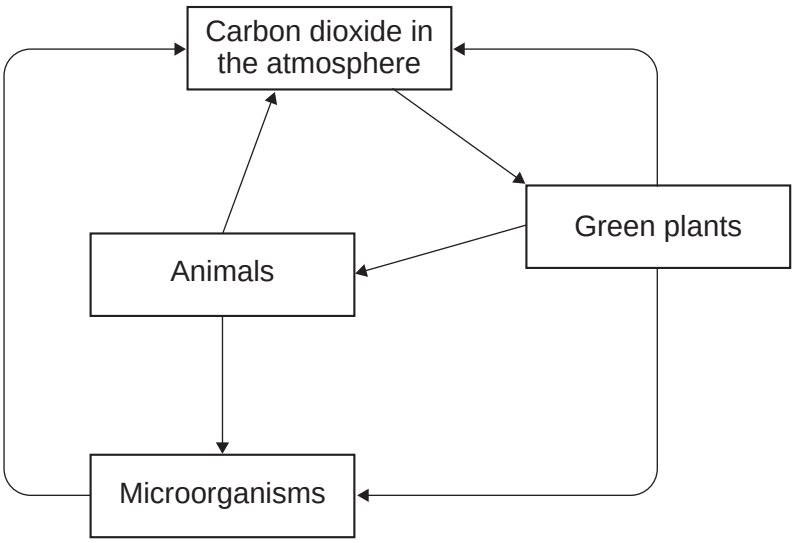
4.7.2.2 How materials are cycled

Question 03

June 2013 | BL1FP | Original Q9 | Legacy

9 *In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.*

The diagram shows part of the carbon cycle.



Describe how living things are involved in the constant cycling of carbon.

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4.7.2.2 How materials are cycled

Question 04

June 2015 | BL3FP | Original Q2 | Legacy

2 The human population is increasing and more household waste is being produced.

2 (a) Give **one** way in which an increase in household waste affects our environment.

[1 mark]

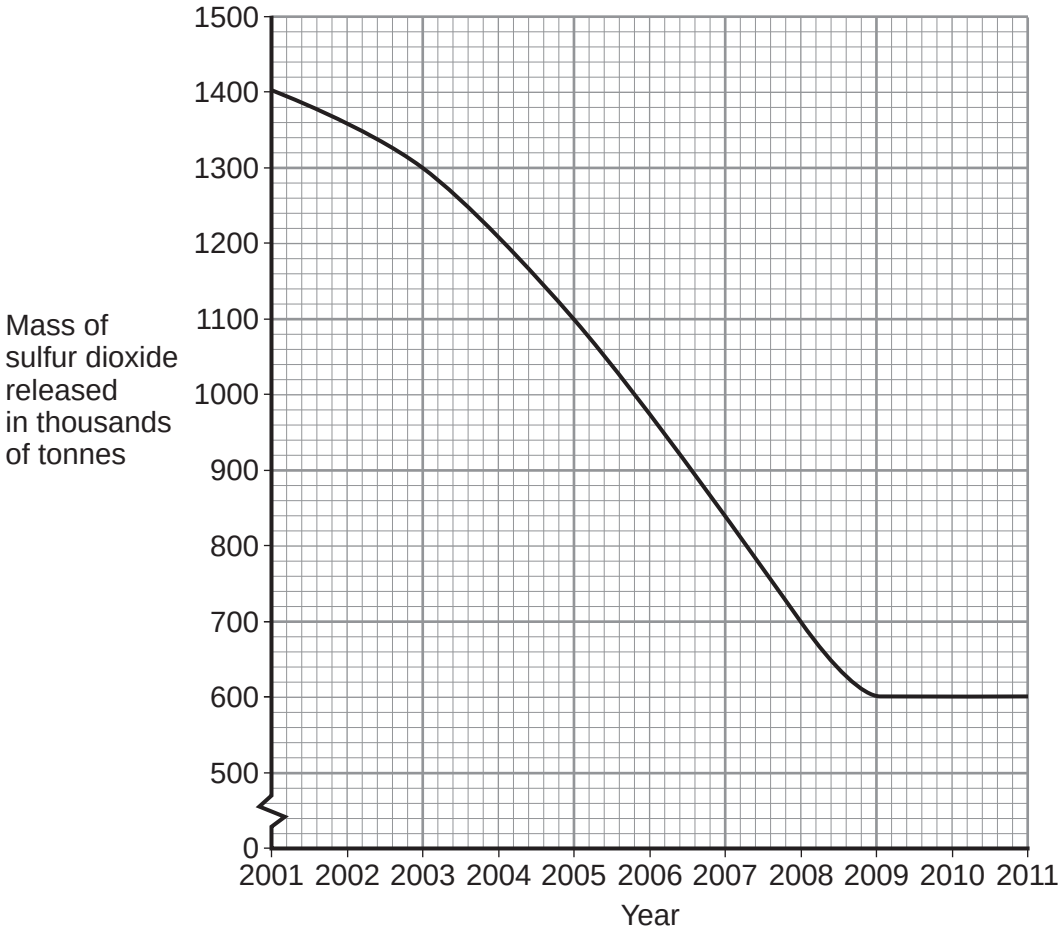
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2 (b) The release of sulfur dioxide affects our environment.

Figure 2 shows how the mass of sulfur dioxide released in the UK has changed from 2001 to 2011.

Figure 2



2 (b) (i) Describe the pattern shown in **Figure 2**.

[2 marks]

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4.7.2.2 How materials are cycled

Question 04 · continued

2 (b) (ii) In 2001, 1400 thousand tonnes of sulfur dioxide were released.

By which year had the amount of sulfur dioxide released reduced to half of this amount?

[2 marks]

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Year = ...

2 (b) (iii) Give **one** problem caused when sulfur dioxide gas is in the air.

[1 mark]

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2 (c) Carbon dioxide is another gas that affects the environment.

Which **two** of the following help to reduce the levels of carbon dioxide in the atmosphere by storing carbon dioxide?

[2 marks]

Tick (✓) **two** boxes.

Animals respiring ☐

Carbon dioxide being absorbed in oceans and lakes ☐

Photosynthesis by trees ☐

The production of biogas ☐

8