

Biodiversity and the effect of human interaction on ecosystem – GCSE Combined Science Biology

1. No.3

0 3

Mineral ions are important chemicals in an ecosystem.

0 3

. 1

Plants take in nitrate ions dissolved in water.

Which part of a plant takes in nitrate ions?

[1 mark]

0 3

. 2

Name **two** chemicals that are cycled between plants, the soil and the air.

Do not refer to nitrogen or nitrates in your answer.

[2 marks]

1 _____

2 _____

All the chemicals in a plant are recycled when the plant dies.

- microorganisms recycle chemicals
- the chemicals are used again by new plants.

[illegible]

2. No.5

0 5

This question is about biodiversity.

A farmer:

- grows only wheat crops
- has used all his small fields to make a few large fields
- cuts down trees in his woodlands to burn as fuel.

0 5 . 1

What are **two** ways the farmer could increase biodiversity on his farm?**[2 marks]**Tick (✓) **two** boxes.

Cut down trees to grow wheat

☐

Plant hedgerows around his fields

☐

Plant many different crops in his fields

☐

Put fences around his fields

☐

Put fertiliser on his wheat crop

☐

Students investigated the effect of cutting down trees in the woodland.

This is the method used.

1. Mark out a 10 m by 10 m area where trees have been removed.
2. Place a 1 m $\times$ 1 m quadrat at six random positions in the area.
3. Record the number of plant species present.
4. Record the number of invertebrate species seen among dead leaves on the ground.
5. Repeat steps 1 to 4 in an area where there are trees.

0 5 . 2

Suggest **one** improvement the students could make to their method.

[1 mark]

0 5 . 3

The students made this prediction:

‘There will be more invertebrate species living in the area where there are trees.’

Explain why the students’ prediction may be correct.

[2 marks]

Table 1 shows the students' results.

Table 1

Quadrat	Number of plant species		Number of invertebrate species	
	Area with no trees	Area with trees	Area with no trees	Area with trees
1	8	2	4	10
2	6	2	3	6
3	7	0	4	8
4	6	3	5	14
5	20	4	2	9
6	8	1	6	13
Mean	7	2	4	10

0 5 . 4 The students decided that one result was anomalous.

Draw a ring around the anomalous result in **Table 1**.

[1 mark]

0 5 . 5 How does removing trees affect the number of invertebrate species living among the dead leaves on the ground?

Use **Table 1**.

[1 mark]

0 5 . 6

There were more plant species growing in the area where there were no trees.

Explain why.

[3 marks]

3. No.3

0 3

There is a need to grow enough food for all the people in the world.

Growing enough food affects habitats and biodiversity.

0 3 . 1

What is meant by the term biodiversity?

[1 mark]

Peat bogs are being destroyed because peat is used by humans.

Destroying peat bogs also reduces biodiversity.

0 3 . 2

Give one use of peat taken from peat bogs.

[1 mark]

0 3 . 3

Explain why the use of peat is harmful to the environment.

Do not refer to biodiversity in your answer.

[2 marks]

03.4

Intensive farming, where a single crop is grown on a large area of land year after year, is more cost effective for farmers.

It is efficient to use fertilisers and to burn the waste so the land is ready to use the next year.

Planting a single crop reduces biodiversity.

Suggest **two** ways that this type of farming can damage the environment.

Do **not** refer to biodiversity in your answer.

[2 marks]

1 _____

2 _____

03.5

Most of the world's production of antibiotics is used in farming.

Antibiotics are given to animals to prevent the spread of disease.

Explain how the widespread use of antibiotics in farming is a threat to human life.

[4 marks]

4. No.7

0	7
---	---

Human activities affect the environment.

0	7	.	1
---	---	---	---

Describe the reasons why deforestation takes place and the effects deforestation has on the environment.

[6 marks]

[illegible]

Forests have been called:

'The lungs of the planet.'

0 7 . 2

Describe **one** way forests being called 'The lungs of the planet' can be considered to be a **correct** statement.

[1 mark]

0 7 . 3

Trees do **not** have lungs.

Describe **one** other way forests being called 'The lungs of the planet' is an **incorrect** statement.

[1 mark]

5. No.7

0 7

There has been a rapid increase in the percentage of carbon dioxide in the atmosphere since 1960.

0 7 . 1

Carbon dioxide is a greenhouse gas that contributes to global warming.

Name **one** other greenhouse gas.

[1 mark]

0 7 . 2

Global warming causes climate change.

Give **two** effects of climate change.

[2 marks]

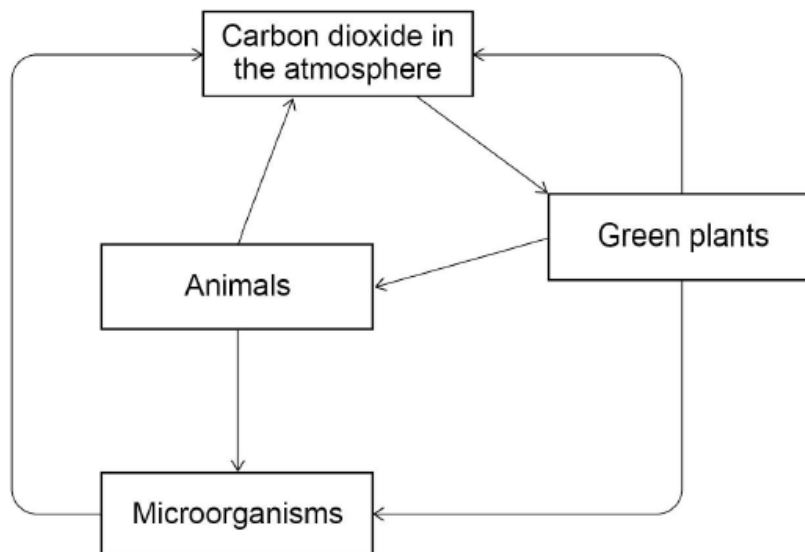
1 _____

2 _____

0 7 . 3 Plants take in carbon dioxide from the atmosphere.

Figure 7 shows part of the carbon cycle.

Figure 7



Describe how carbon from the atmosphere is cycled through living organisms.

[6 marks]

6. No.2

0 2

There has been a rapid increase in the percentage of carbon dioxide in the atmosphere since 1960.

0 2 . 1

Carbon dioxide is a greenhouse gas that contributes to global warming.

Name **one** other greenhouse gas.

[1 mark]

0 2 . 2

Global warming causes climate change.

Give **two** effects of climate change.

[2 marks]

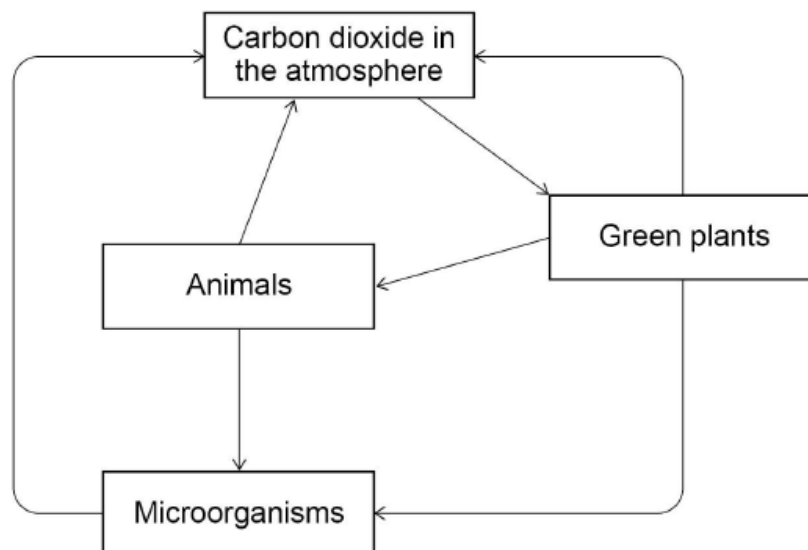
1 _____

2 _____

0 2 . 3 Plants take in carbon dioxide from the atmosphere.

Figure 2 shows part of the carbon cycle.

Figure 2



Describe how carbon from the atmosphere is cycled through living organisms.

[6 marks]
