

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Introducing the question

Students can be introduced to this question using the Kerboodle assessment:

5 On your marks

This will help students to unpick the question and to decide what they should and shouldn't include in their answer.

Using the student resources

The student resources for this question are provided on the following pages. These resources provide flexible support for your students in answering the question. They can be printed and copied as required.

Student resources	Page
<p>Plan your answer</p> <p>This is a planning document to help students decide what to include and how to structure their answer.</p>	3–4
<p>Write your answer</p> <p>This provides an answer sheet for students to complete their answer on paper in class or at home.</p>	6
<p>Mark your answer</p> <p>This student-friendly checklist and mark scheme can be used for self- or peer-marking. It can also be used by students in assessing the sample answers.</p>	7–8
<p>Sample answers</p> <p>Five sample answers, at a range of levels, are given. These could be used in a number of ways to demonstrate to students how to maximise their marks for this question.</p>	9–13
<p>Marked sample answers</p> <p>These marked and annotated versions of the five sample answers can be used by students to compare with their own marked sample answers.</p>	14–18

Please note: Students do not automatically have access to the *On your marks* presentation or resources from Kerboodle. If you would like your students to access these resources, or to complete the *On you marks* question on-screen, you will need to assign these to your students in Kerboodle.

continued overleaf

Using the Kerboodle Markbook

If you would like to use the Kerboodle Markbook to monitor progress and record student marks for this question, you must assign **5 On your marks** to the students. Students can type their answer onto the final screen of the presentation and then submit this to the Kerboodle Markbook. Students' marks can then be entered into the Kerboodle Markbook and they will be informed automatically of their mark when they next log in to Kerboodle.

Timing	Spelling, punctuation and grammar (SPaG)
Under exam-style conditions, it should take students around six minutes to complete their answer to this question.	No additional marks are awarded for SPaG for this question.

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Before attempting to answer the question, remember to BUG it.

- ✓ **B**ox the command word.
- ✓ **U**nderline the following:
 - the **theme**
 - the **focus**
 - any **evidence** required
 - the **number of examples** needed.
- ✓ **G**lance back over the question – to make sure you include everything in your answer.



Command word: Gives reasons **why** something happens. You will not get marks for pure description.

Focus and number of examples: You only need to explain one change in one type of ecosystem.

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Theme: This question is related to the theme of Ecosystems, assessed in Paper 1, Section B of your exam. The question is compulsory. You should focus on a small-scale ecosystem, not a biome, that has become unbalanced, not one in balance.

Name _____ Class _____

PEEL your answer

Use **PEEL** notes to structure your answer. This will help you to communicate your ideas to the examiner in the clearest way.

- **Point** – Make two or three points in detail, rather than lots of points in less detail. Don't use bullet points.
- **Explain** – Give reasons by using sentence starters such as: *'This is because ...'*, *'One reason is ...'*
- **Evidence** – Include facts and other details from named examples to back up your point. Each point – with explanation and evidence – should represent a separate PEE paragraph.
- **Link** – To link different points to each other, use PEE sentence starters such as: *'Another important point is ...'* or *'Of more importance is ...'*. Make sure your conclusion also links back to the question.



Quality not quantity: You will not be marked simply on the number of points you make, but on the quality of your answer. That means the quality of the content **and** how well you structure your answer.



SPaG: You are not awarded extra marks for spelling, punctuation and grammar for this question. However, you could miss out on marks if your spelling, punctuation or grammar is poor, so always check your answer carefully.

continued overleaf

Name _____ Class _____

Planning grid

Use this planning grid to help you write high-quality paragraphs. Remember to include links to show how your points relate to each other and to the question.

	PEE paragraph 1	PEE paragraph 2	PEE paragraph 3
Point			
Explain			
Evidence			

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

This question is assessing the following assessment objectives (AO).

AO1	Testing your knowledge of changes that can affect ecosystems	2 marks
AO2	Testing your understanding of how changes can make an ecosystem unbalanced	4 marks

1. To help you to identify if the answer includes detailed points, first highlight or underline the:



Points in **red**



Explanations in **orange**



Evidence in **green**

2. Use the mark scheme on the next page to decide what mark to give. You will not be awarding marks for individual points, but will choose a level and a mark based upon the **quality** of the answer as a whole.

continued overleaf

Name _____ Class _____

Level	Marks	Descriptor	Examples
3 (Detailed)	5–6	<p>AO1: Shows detailed and specific knowledge of the types of changes affecting the balance of ecosystems.</p> <p>AO2: Shows thorough understanding of how change can make an ecosystem unbalanced.</p>	<p>In an ecosystem where the temperature and rainfall support natural grassland, it would support species of herbivores that rely on the grass as a source of food. There may also be predators higher up the food chain that eat the herbivores.</p> <p>If the rainfall decreases, the grass may not survive. Less grass will support fewer herbivores, which affects the species higher up the food chain.</p>
2 (Clear)	3–4	<p>AO1: Shows clear and accurate knowledge of the types of changes affecting the balance of ecosystems.</p> <p>AO2: Shows reasonable understanding of how change can make an ecosystem unbalanced.</p>	<p>If the climate got drier, the vegetation would change to more drought-resistant plants. There would be less decomposition of plant material so the soils would not be as fertile. The animals that depend on the vegetation would not find food and would die.</p>
1 (Basic)	1–2	<p>AO1: Shows limited knowledge of how ecosystems stay in balance. Simple basic statements are not developed and may be purely descriptive.</p> <p>AO2: Shows little understanding of how change can make an ecosystem unbalanced.</p>	<p>The climate can get hotter and drier. The rivers get polluted. Trees are cut down. The land is ploughed up.</p>

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 1

When woodland is cut down the type of plants that grew there, like bluebells, will die out. The plants needed shady conditions, which were provided by the trees. The soil conditions would change as the trees protected the soil from wind and rain and it became exposed which could lead to soil erosion. The soil would become less fertile.

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 2

The ecosystem will change if the climate changes. If there is less rain then the grass will die. If the climate gets wetter the ground may get saturated so the plants die. The rain may also wash the soil away. Rivers can get polluted and fish may die. Cutting down hedges means that the homes of the animals that live there will be destroyed and so they have to move away to find new places to live.

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 3

If there is a pond with large fish in it and anglers catch too many fish, the pond ecosystem will become unbalanced. With fewer large fish, there will be an increase in the number of small fish and small animals such as frogs. In the past the numbers would be kept down by the larger fish eating the smaller fish and frogs. The increase in frogs will mean there are fewer insects because the greater number of frogs will eat more.

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 4

If there is pond with large fish in it, and anglers catch too many fish the pond ecosystem will become unbalanced. With fewer large fish there will be an increase in the number of small fish and small animals such as frogs. In the past the numbers would be kept down by the larger fish eating the smaller fish and frogs. The increase in frogs will mean there are less insects because the greater number of frogs will eat more.

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 5

In an ecosystem plants use sunlight, water and nutrients from the soil to produce their food. Animals feed on the plants or each other. Fungi and bacteria feed on dead and waste material and make them rot putting nutrients into the soil, which is good for the plants. Without the plants all the rest would die. This shows that all the different parts are linked and a change in one affects all the other parts.

Strengths of the answer			
Ways to improve the answer			
Level		Mark	

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 1

When woodland is cut down the type of plants that grew there, like bluebells, will die out. The plants needed shady conditions, which were provided by the trees. The soil conditions would change as the trees protected the soil from wind and rain and it became exposed which could lead to soil erosion. The soil would become less fertile.

Point: Identifies how one change to an ecosystem results in another change.

Evidence: Gives a specific example of species affected.

Explanation: Gives two reasons why the bluebells die, but not how the change makes the ecosystem unbalanced.

Feedback: This answer clearly identifies and gives detail about one change to the ecosystem and how species depend on each other. However, it fails to show how the changes result in an unbalanced ecosystem.

Level = 2 Marks = 3

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 2

The ecosystem will change if the climate changes. If there is less rain then the grass will die. If the climate gets wetter the ground may get saturated so the plants die. The rain may also wash the soil away. Rivers can get polluted and fish may die. Cutting down hedges means that the homes of the animals that live there will be destroyed and so they have to move away to find new places to live.

Point: Identifies a change that can affect an ecosystem.

Explanation: Gives the results of two changes, but not the impact to the whole ecosystem.

Points: Identifies two more changes to different ecosystems, but not how they affect each ecosystem.

Feedback: This basic answer identifies a number of changes that affect ecosystems but shows little understanding of how these changes make ecosystems unbalanced.

Level = 1 Marks = 2

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 3

If something changes in an ecosystem there will be a knock-on effect on the other components because they are all linked together. If the climate gets drier, the vegetation will change. This means that animals that rely on the grass as a source of food will die out. There is likely to be a food chain, so the predators live on the grass-eating animals will also die out because they do not have enough food. There is therefore a loss of biodiversity and the ecosystem has become unbalanced.

Point: Recognises that change can affect the whole ecosystem.

Explanation: Explain the effects of the change.

Point: Effective conclusion that clearly relates back to the question.

Feedback: This detailed answer shows detailed knowledge and understanding of how change can make an ecosystem unbalanced.

Level = 3 Marks = 6

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 4

If there is a pond with large fish in it and anglers catch too many fish, the pond ecosystem will become unbalanced. With fewer large fish, there will be an increase in the number of small fish and small animals such as frogs. In the past the numbers would be kept down by the larger fish eating the smaller fish and frogs. The increase in frogs will mean there are fewer insects because the greater number of frogs will eat more.

Point: Shows some understanding but could be clearer.

Explanation: Gives more detail to develop the point.

Evidence: Gives a specific group affected.

Explanation: Gives more detail on the changes but doesn't say clearly that the ecosystem is unbalanced.

Feedback: This answer shows some knowledge and understanding of how change can unbalance an ecosystem but could be clearer. It would benefit from conclusion referring back to the question.

Level = 2 Marks = 3

Name _____ Class _____

Explain how a change in an ecosystem can result in the ecosystem becoming unbalanced. (6 marks)

Sample answer 5

In an ecosystem plants use sunlight, water and nutrients from the soil to produce their food. Animals feed on the plants or each other. Fungi and bacteria feed on dead and waste material and make them rot putting nutrients into the soil, which is good for the plants. Without the plants all the rest would die. This shows that all the different parts are linked and a change in one affects all the other parts.

Explanation: Explains the features and working of an ecosystem.

Explanation: Gives a vague idea of the possible effect of a change.

Explanation: Recognises how ecosystems work.

Feedback: This basic answer focuses too much on how ecosystems work, but not on the question. There is no attempt to explain how a specific change makes an ecosystem unbalanced and no specific evidence is given.

Level = 1 Marks = 1