

GCSE Combined Science: Trilogy

Worksheet: Land use

TIME 30 min	TOTAL 30 marks	CALCULATOR Allowed	DIFFICULTY Easy, Medium
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Topics: Land use

NAME	CLASS	DATE
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- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Answer all questions in the spaces provided.
- In all calculations, show clearly how you work out your answer.
- The marks for questions are shown in brackets.

0 1

Humans reduce the amount of land available for other animals and plants.

0 1 . 1

Which **two** human activities reduce the land available for other animals and plants?

Tick (✓) **two** boxes.

Building

☐

Planting hedgerows

☐

Quarrying

☐

Creating nature reserves

☐

[2 marks]

0 1 . 2

Give **one** other human activity that reduces the land available for other organisms.

.....

.....

[1 mark]

0 1 . 3

Peat is dug from peat bogs.
What is most of this peat used to produce?

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.....

.....

.....

[1 mark]

0 1 . 4

Burning or decay of peat releases a gas that contributes to global warming.
Name this gas.

.....

.....

.....

.....

[1 mark]

0 2

As the human population grows, people use more and more land for their own needs.

0 2 . 1

Complete the sentences. Choose answers from the list.
carbon dioxide · compost · nitrogen · oxygen · quarrying · sand
Humans reduce the land available for other species by building, ,
farming and dumping waste.
Peat bogs are destroyed to produce for gardens.
When peat decays or is burned, is released into the atmosphere.

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[3 marks]

0 2 . 2

Why does destroying peat bogs reduce biodiversity?

Tick (✓) **one** box.

It reduces the area of habitat for the plants, animals and microorganisms that live there.

☐

It increases the number of species that live in bogs.

☐

It makes the soil more acidic.

☐

It stops peat from decaying.

☐

[1 mark]

0 3

Table 1 shows how the land in one region is used.

Table 1

Land use	Area in km ²
Farmland	3150
Woodland	630
Towns and roads	840
Quarries and landfill sites	105
Nature reserves	525

0 3 . 1

Calculate the percentage of the region that is farmland.

.....

.....

.....

.....

Percentage = %

[2 marks]

0 3 . 2

In 1950, towns and roads covered 5% of the region.
Calculate the increase in the area covered by towns and roads since 1950.

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.....

.....

Increase = km²

[2 marks]

0 3 . 3

Suggest **two** reasons why the area covered by towns and roads has increased.

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.....

[2 marks]

0 3 . 4

Explain how the increase in towns and roads could affect biodiversity in the region.

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[2 marks]

.....

0 4

A region has a total area of 7340 km^2 . In 1971, towns and roads covered 540 km^2 of the region. In 2001, towns and roads covered 729 km^2 .

0 4 . 1

Calculate the percentage increase in the area covered by towns and roads between 1971 and 2001.

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.....

Percentage increase = %

[2 marks]

0 4 . 2

Calculate the percentage of the region covered by towns and roads in 2001. Give your answer to 3 significant figures.

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Percentage = %

[2 marks]

0 4 . 3

Explain how the increase in towns and roads could affect biodiversity in the region.

.....

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.....

[2 marks]

0 5

Peat bogs are areas of waterlogged, acidic land. Dead plants in peat bogs decay very slowly, so they build up over thousands of years to form peat. Peat is dug up and sold to gardeners as compost.

0 5 . 1

Explain why dead plants decay very slowly in peat bogs.

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[2 marks]

0 5 . 2

Explain how digging up peat bogs affects biodiversity.

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[2 marks]

0 5 . 3

When peat is used in gardens, it decays.

Explain how this contributes to global warming.

.....

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.....

[3 marks]

END OF QUESTIONS

Original practice questions written to match the specification. Not produced by, affiliated with or endorsed by AQA.

Mark scheme

GCSE Combined Science: Trilogy · Worksheet: Land use · 30 marks

Question 1 (5 marks)

01.1 [2 marks]

Correct: Building; Quarrying

01.2 [1 mark]

- farming (1)
- dumping waste / landfill (1)

Any 1 of the points above.

01.3 [1 mark]

Answer: Garden compost

- (garden) compost (1)
-

01.4 [1 mark]

Answer: Carbon dioxide

- carbon dioxide (1)
-
-

Question 2 (4 marks)

02.1 [3 marks]

Answer: quarrying; compost; carbon dioxide

- quarrying (1)
 - compost (1)
 - carbon dioxide (1)
-

02.2 [1 mark]

Correct: It reduces the area of habitat for the plants, animals and microorganisms that live there.

Question 3 (8 marks)

03.1 [2 marks]

Answer: 60%

- total area = 5250 km² (1)
- $3150 \div 5250 \times 100 = 60$ (%) (1)

03.2 [2 marks]

Answer: 577.5 km²

- 5% of 5250 = 262.5 km² (1)
- $840 - 262.5 = 577.5$ (km²) (1)

Notes: Allow 578. Allow ECF from the total area.

03.3 [2 marks]

- the human population has increased, so more houses are needed (1)
- more roads are needed for more vehicles / transport (1)
- more land is used for industry, shops and businesses (1)

Any 2 of the points above.

03.4 [2 marks]

- habitats are destroyed, so less land is available for other animals and plants (1)
 - so populations fall and some species may disappear from the region (biodiversity falls) (1)
-

Question 4 (6 marks)

04.1 [2 marks]

Answer: 35%

- $(729 - 540) \div 540 \times 100$ (1)
 - 35 (%) (1)
-

04.2 [2 marks]

Answer: 9.93%

- $729 \div 7340 \times 100$ (1)
- 9.93 (%) (1)

Notes: An answer of 9.932 (not given to 3 significant figures) scores 1 mark.

04.3 [2 marks]

- habitats are destroyed / less land is available for other animals and plants (1)
 - so populations fall and some species may be lost from the region (1)
-

Question 5 (7 marks)

05.1 [2 marks]

- waterlogged, so there is very little oxygen (1)
 - (and acidic, so) decomposers / microorganisms cannot survive or respire / work well (1)
-

05.2 [2 marks]

- it reduces the area of peat bog habitat (1)
 - so it reduces the variety of plant, animal and microorganism species that live there (1)
-

05.3 [3 marks]

- the peat is exposed to oxygen, so microorganisms can decay it (1)
 - the microorganisms release carbon dioxide in respiration / carbon stored for thousands of years is released as carbon dioxide (1)
 - carbon dioxide increases the greenhouse effect / global warming (1)
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