

GCSE Combined Science: Trilogy

Worksheet: Deforestation

TIME 35 min	TOTAL 31 marks	CALCULATOR Allowed	DIFFICULTY Easy, Medium
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Topics: Deforestation

NAME _____ **CLASS** _____ **DATE** _____

- 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

Large areas of tropical forest have been cut down.

0 1 . 1

Which **two** are reasons for large-scale tropical deforestation?

Tick (✓) **two** boxes.

To provide land for cattle and rice fields

☐

To grow crops for biofuels

☐

To increase biodiversity

☐

To reduce the carbon dioxide in the atmosphere

☐

[2 marks]

0 1 . 2

Deforestation means that less carbon dioxide is removed from the atmosphere.

Name the process in trees that removes carbon dioxide from the atmosphere.

.....

.....

.....

[1 mark]

0 1 . 3

Give **one** effect of deforestation on biodiversity. Give a reason for your answer.

.....

.....

.....

.....

[2 marks]

0 2

In many tropical countries, forest is being cleared.

0 2 . 1

Complete the sentence.

Large-scale deforestation in tropical areas has happened to provide land for cattle and fields, and to grow crops for

.....

.....

.....

.....

[2 marks]

0 2 . 2

Which **two** gases increase in the atmosphere as a result of clearing forest to provide land for cattle and rice fields?

Tick (✓) **two** boxes.

Carbon dioxide

Methane

Nitrogen

Oxygen

☐

☐

☐

☐

[2 marks]

0 2 . 3

Give **one** reason why deforestation reduces biodiversity.

.....

.....

[1 mark]

0 3

In 1991, tropical forest covered 7400 km² of one country. In 2006, it covered 6660 km².

0 3 . 1

Calculate the percentage of the forest that was lost between 1991 and 2006.

.....

.....

.....

.....

Percentage = %

[2 marks]

0 3 . 2

Give **one** reason for large-scale deforestation in tropical areas.

.....

.....

[1 mark]

0 4

In 1990, tropical forest covered 23 100 km² of one country. Between 1990 and 2010, an average of 420 km² of the forest was cleared each year to provide land for cattle.

0 4 . 1

Calculate the area of forest that was left in 2010.

.....

.....

.....

.....

Area of forest = km²

[2 marks]

0 4 . 2

If clearing continues at the same rate, in which year will all of the forest have been cleared?

.....

.....

.....

.....

Year =

[2 marks]

0 4 . 3

Explain how clearing the forest increases the concentration of carbon dioxide in the atmosphere.

.....

.....

.....

.....

[2 marks]

.....

0 5

Table 1 shows the area of forest in one country between 1990 and 2020.

Table 1

Year	Area of forest in thousand km ²
1990	1170
2000	1090
2010	985
2020	900

0 5 . 1

Calculate the mean area of forest lost per year between 1990 and 2020.

.....

.....

.....

.....

Mean area lost = thousand km² per year

[2 marks]

0 5 . 2

Calculate the percentage of the 1990 forest area that had been lost by 2020.

.....

.....

.....

.....

Percentage = %

[2 marks]

0 5 . 3

In which ten-year period was the most forest lost? Give a reason for your answer.

.....

.....

[1 mark]

0 5 . 4

The government reduced the rate of deforestation after 2010.
Suggest **two** reasons why.

.....

.....

.....

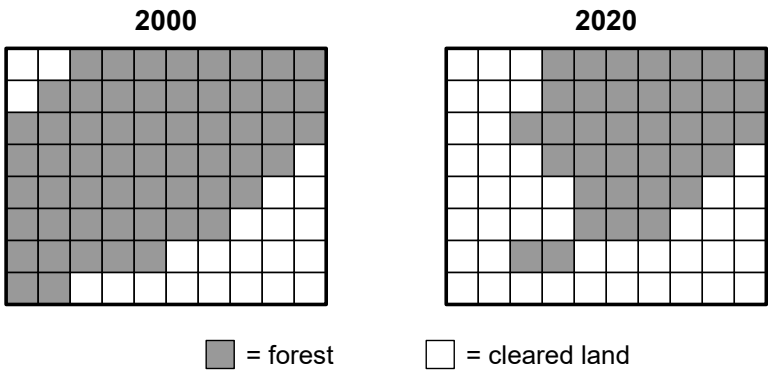
.....

[2 marks]

0 6

Scientists used satellite images to make grid maps of an area of tropical forest in 2000 and in 2020. Figure 1 shows the maps. Each square on the maps represents an area of 25 km².

Figure 1



0 6 . 1

Estimate the area of forest in 2000 and in 2020.

.....

.....

.....

.....

Areas (2000, 2020) = km²

[2 marks]

0 6 . 2

Calculate the percentage of the forest present in 2000 that had been lost by 2020.

.....

.....

.....

.....

Percentage = %

[2 marks]

0 6 . 3

Suggest why this method gives only an estimate of the area of forest.

.....

.....

[1 mark]

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: Deforestation · 31 marks

Question 1 (5 marks)

01.1 [2 marks]

Correct: To provide land for cattle and rice fields; To grow crops for biofuels

01.2 [1 mark]

Answer: Photosynthesis

- photosynthesis (1)
-

01.3 [2 marks]

- biodiversity is reduced / there are fewer species (1)
 - because habitats / food / shelter for many species are destroyed / species may become extinct (1)
-

Question 2 (5 marks)

02.1 [2 marks]

Answer: rice; biofuels

- rice (1)
 - biofuels (1)
-

02.2 [2 marks]

Correct: Carbon dioxide; Methane

02.3 [1 mark]

- the habitats (food and shelter) of many species are destroyed (1)
-

Question 3 (3 marks)

03.1 [2 marks]

Answer: 10%

- $(7400 - 6660) \div 7400 \times 100$ (1)
 - 10 (%) (1)
-

03.2 [1 mark]

- to provide land for cattle (1)
- to provide land for rice fields (1)
- to grow crops for biofuels (1)

Any 1 of the points above.

Question 4 (6 marks)

04.1 [2 marks]

Answer: 14 700 km²

- area cleared = $420 \times 20 = 8400$ km² (1)
 - $23\,100 - 8400 = 14\,700$ (km²) (1)
-

04.2 [2 marks]

Answer: 2045

- $14\,700 \div 420 = 35$ years (1)
- 2045 (1)

Notes: Allow ECF from the previous part.

04.3 [2 marks]

- the trees are burned or decay, releasing carbon dioxide (by combustion or by the respiration of decomposers) (1)
- there are fewer trees, so less photosynthesis and less carbon dioxide is removed from the atmosphere (1)
- cattle release methane, another greenhouse gas (1)

Any 2 of the points above.

Question 5 (7 marks)

05.1 [2 marks]

Answer: 9 thousand km² per year

- $(1170 - 900) \div 30$ (1)
 - 9 (thousand km² per year) (1)
-

05.2 [2 marks]

Answer: 23.1%

- $270 \div 1170 \times 100$ (1)
- 23.1 (%) (1)

Notes: Allow 23 or 23.08.

05.3 [1 mark]

Answer: 2000–2010

- 2000–2010, because 105 thousand km² were lost (compared with 80 and 85 thousand km²) (1)
-

05.4 [2 marks]

- to protect biodiversity / endangered species (1)
- to reduce carbon dioxide emissions / global warming (1)
- because of international agreements or payments to protect forests (1)
- to protect income from tourism (1)

Any 2 of the points above.

Question 6 (5 marks)

06.1 [2 marks]

Answer: 1450 km^2 and 925 km^2

- 2000: $58 \text{ squares} \times 25 = 1450 \text{ km}^2$ (1)
 - 2020: $37 \text{ squares} \times 25 = 925 \text{ km}^2$ (1)
-

06.2 [2 marks]

Answer: 36.2%

- $(1450 - 925) \div 1450 \times 100$ (1)
- 36.2 (%) (1)

Notes: Allow the same result from $(58 - 37) \div 58 \times 100$. Allow ECF.

06.3 [1 mark]

- some squares are only partly covered by forest, but each square is counted as all forest or all cleared (1)
- small patches of forest or small clearings are not shown (1)
- the satellite images may not show all the detail (1)

Any 1 of the points above.
