

Chemistry of the atmosphere – GCSE CS Chemistry1. **No.1**

0 1

The Earth's atmosphere has changed during the last 4.6 billion years.

0 1 . 1

What is the approximate percentage of nitrogen and of oxygen in the Earth's atmosphere today?

Draw **one** line from each gas to the percentage of that gas.**[2 marks]**

Gas	Percentage (%) of gas
	20
Nitrogen	40
Oxygen	60
	80

0 1 . 2

The approximate percentage of carbon dioxide in the Earth's early atmosphere was 95%.

Which are **two** reasons why the percentage of carbon dioxide has **decreased** since the Earth's early atmosphere?**[2 marks]**Tick (✓) **two** boxes.

Combustion of fuels

☐

Deforestation

☐

Dissolving in oceans

☐

Photosynthesis

☐

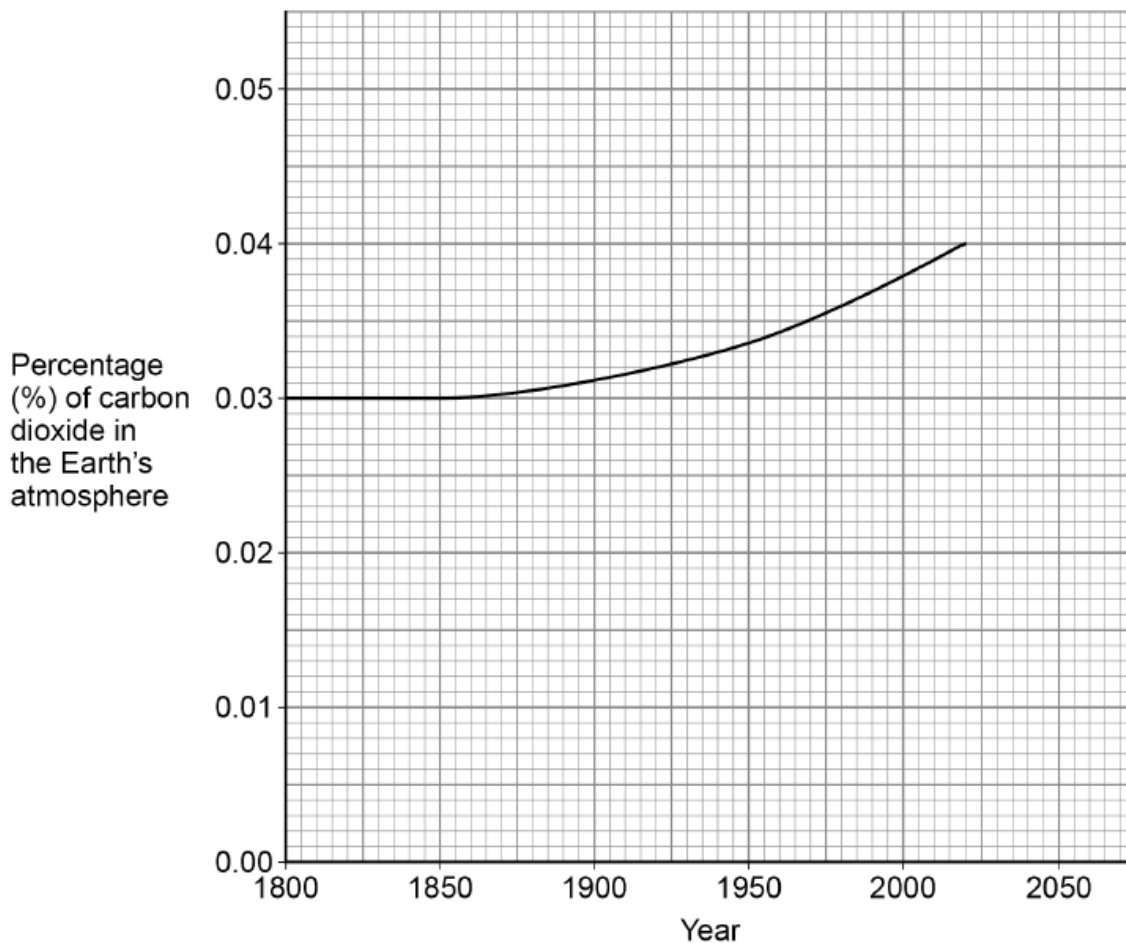
Respiration

☐

0 1 . 3

Figure 1 shows the change in the percentage of carbon dioxide in the Earth's atmosphere from 1800 to 2020.

Figure 1



Describe the trend in the percentage of carbon dioxide in the Earth's atmosphere from 1800 to 2020.

Use data from **Figure 1**.

[3 marks]

Carbon dioxide is a greenhouse gas.

0 1 . 4 Which of the following is also a greenhouse gas?

[1 mark]

Tick (✓) **one** box.

Argon

☐

Methane

☐

Nitrogen

☐

Oxygen

☐

0 1 . 5 Which of the following is an environmental problem caused by greenhouse gases?

[1 mark]

Tick (✓) **one** box.

Acid rain

☐

Climate change

☐

Global dimming

☐

0 1 . 6 Calculate the relative formula mass (M_r) of carbon dioxide (CO_2).

Relative atomic masses (A_r): C = 12 O = 16

[2 marks]

Relative formula mass of carbon dioxide = _____

2. No.3

0	3
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Some fractions of crude oil are processed to produce fuel for transport.

0	3	.	1
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Describe how crude oil was formed.

[4 marks]

Transport is a source of atmospheric pollutants.

0 3 . 2

Suggest how sulfur dioxide can be produced by transport.

[2 marks]

0 3 . 3

Give **two** problems caused by sulfur dioxide as an atmospheric pollutant.

[2 marks]

1

2

03.4

Describe how carbon monoxide can be produced by transport.

[2 marks]

03.5

Catalytic converters are fitted to car exhausts to reduce the amount of pollution from cars.

Carbon monoxide and nitrogen dioxide (NO₂) react in a catalytic converter.

Nitrogen and carbon dioxide are produced.

Write a balanced equation for the reaction.

[2 marks]

