

**AQA - Carbon dioxide and methane as greenhouse gases – Combine Science GCSE Chemistry**

1. [May/2020/Paper\\_8464/2H/No.6](#)  
This question is about the Earth's atmosphere.

Carbon dioxide is a greenhouse gas.

The greenhouse effect happens in four stages.

The four stages are:

Stage **A**      Carbon dioxide stops longer wavelength radiation escaping

Stage **B**      Radiation is absorbed by the Earth

Stage **C**      Longer wavelength radiation is emitted

Stage **D**      Shorter wavelength radiation enters the atmosphere

What is the correct order of stages **A**, **B**, **C** and **D**?

[1 mark]

Tick (✓) **one** box.

**C, A, B, D**     

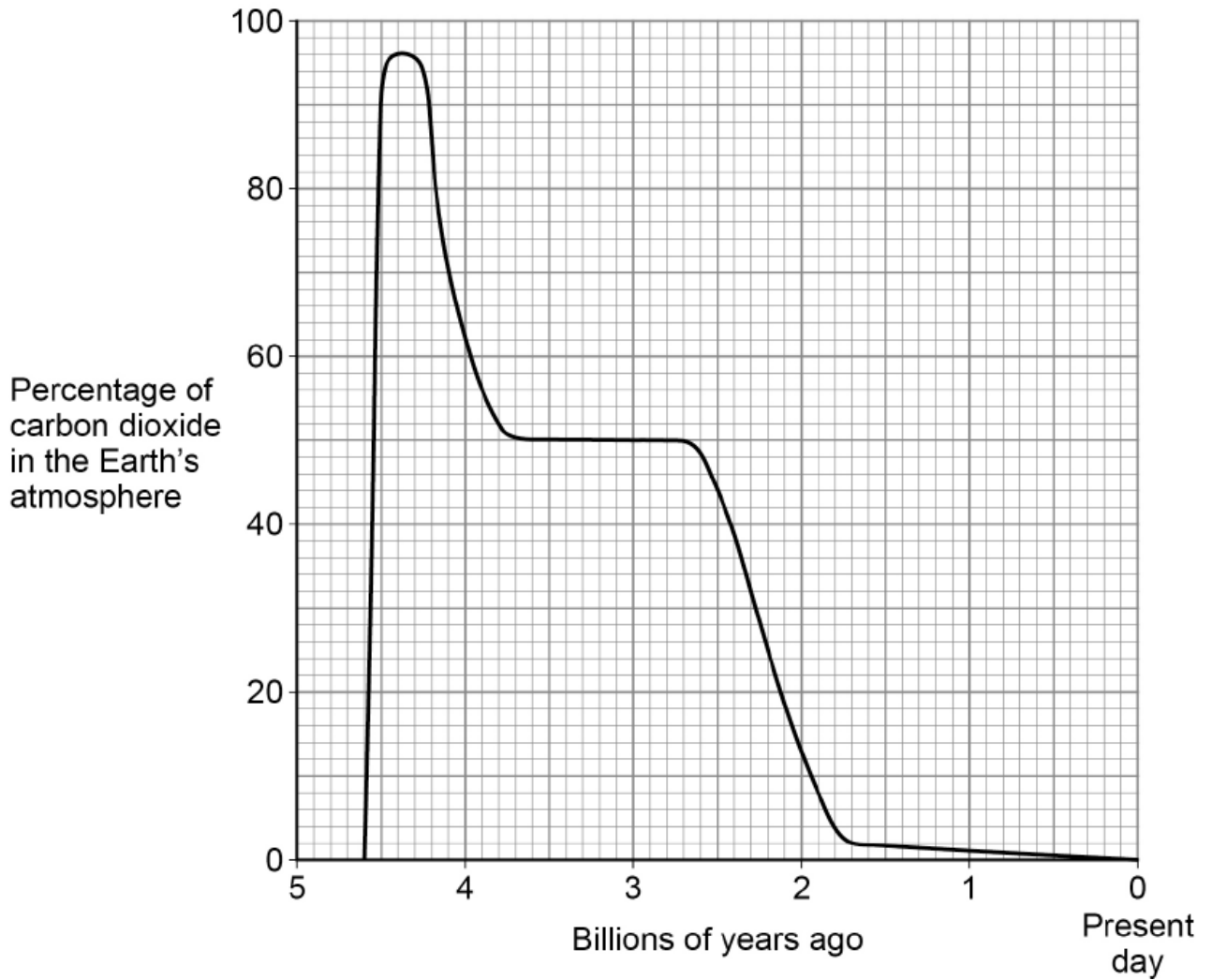
**C, D, B, A**     

**D, B, C, A**     

**D, C, B, A**

**Figure 6** shows how the percentage of carbon dioxide in the Earth's atmosphere has changed over 4.6 billion years.

**Figure 6**



The mass of gas in Earth's atmosphere remains constant at  $5.15 \times 10^{18}$  kg

Determine the maximum mass of carbon dioxide that was in the Earth's atmosphere.

Use **Figure 6**.

**[3 marks]**

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Mass of carbon dioxide = \_\_\_\_\_ kg



2. Jun/2019/Paper\_8464/2F/No.1.3

Give **two** reasons why the percentage of carbon dioxide in the air has decreased in the last 2.7 billion years.

[2 marks]

Tick (✓) **two** boxes.

Combustion

Dissolved in oceans

Intense volcanic activity

Photosynthesis

Respiration



4. Jun/2019/Paper\_8464/2H/No.4.4-4.5

Copper is a catalyst in a reaction to produce ethanol from carbon dioxide.

Ethanol (C<sub>2</sub>H<sub>5</sub>OH) is used as a fuel.

Suggest why producing ethanol from carbon dioxide is sustainable.

**[2 marks]**

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Chemistry plays an important role in sustainable development.

What is sustainable development?

**[2 marks]**

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