

The Earth's early atmosphere

Q1. (2018)

0 4 . 1

What percentage of the Earth's atmosphere is nitrogen?

[1 mark]

Tick **one** box.

5%

☐

20%

☐

50%

☐

80%

☐

Q2. (2018)

0 4 . 2

During the first billion years of the Earth's existence the amount of nitrogen in the atmosphere increased.

Give **one** source of this nitrogen.

[1 mark]

Q3. (2018)

0 7 . 5

Explain how the percentages of nitrogen, oxygen and carbon dioxide in the Earth's atmosphere today have changed from the Earth's early atmosphere.

[6 marks]

Q4. (2019)

0 1 . 1

This question is about gases.

Draw **one** line from each substance to the description of the substance.

[3 marks]

Substance	Description of substance
	Compound
Air	Element
Carbon dioxide	Hydrocarbon
Oxygen	Metal
	Mixture

Q5. (2019)

0 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.

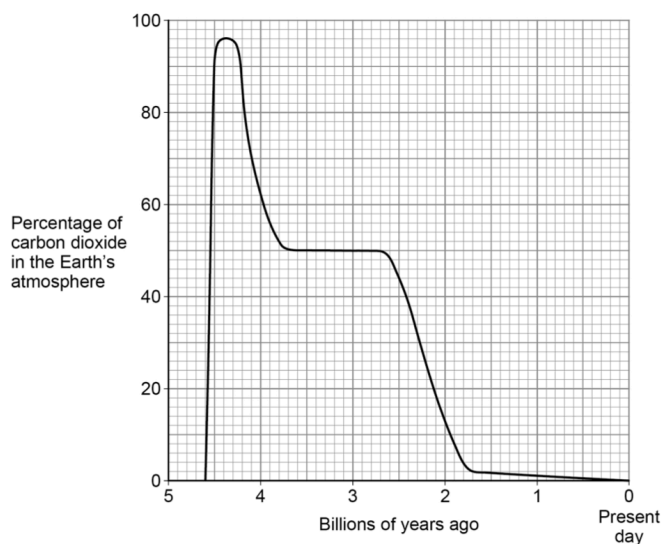
- | | |
|---------------------------|--------------------------|
| Combustion | ☐ |
| Dissolved in oceans | ☐ |
| Intense volcanic activity | ☐ |
| Photosynthesis | ☐ |
| Respiration | ☐ |

Q6. (2020)

0 2 This question is about carbon dioxide in the Earth's atmosphere.

Figure 2 shows how the percentage of carbon dioxide in the Earth's atmosphere has changed over 4.6 billion years.

Figure 2



A)

0 2 . 1 What was the highest percentage of carbon dioxide in the Earth's atmosphere?

Use **Figure 2**.

[1 mark]

Highest percentage = _____ %

B)

0 2 . 2 The percentage of carbon dioxide in the atmosphere has decreased since Earth's early atmosphere.

Which **two** processes have decreased the percentage of carbon dioxide in the Earth's atmosphere?

[2 marks]

Tick (✓) **two** boxes.

Combustion of fuels

☐

Formation of sedimentary rocks

☐

Photosynthesis

☐

Volcanic activity

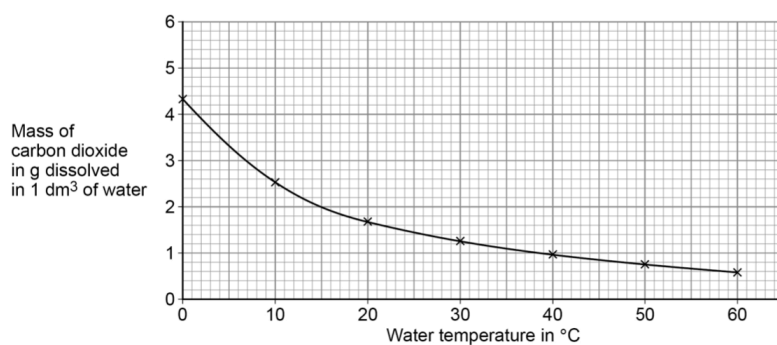
☐

Q7. (2020)

Carbon dioxide dissolves in water.

Figure 3 shows the mass of carbon dioxide dissolved in water at different temperatures.

Figure 3



A)

0 2 . 4 Complete **Table 1**.

Use **Figure 3**.

[2 marks]

Table 1

Water temperature in °C	Mass of carbon dioxide in g dissolved in 1 dm³ of water
5	
15	

B)

0 2 . 5 Calculate the difference in the mass of carbon dioxide dissolved in 1 dm³ of water at 5 °C and at 15 °C

Use **Table 1**.

[1 mark]

Mass = _____ g

Q8. (2021)

0 4 . 1 Earth's early atmosphere may have been like the atmosphere of Mars today.

Why are scientists **not** certain about the percentage of gases in the Earth's early atmosphere?

[1 mark]

Q9. (2021)

0 4 . 2 What was formed from the water vapour in the Earth's early atmosphere?

[1 mark]

Tick (✓) **one** box.

Crude oil

☐

Limestone

☐

Natural gas

☐

Oceans

☐

Q10. (2021)

0 4 . 3 The Earth's atmosphere today consists mainly of nitrogen and oxygen.

Draw **one** line from each gas to what produced the gas.

[2 marks]

Gas

What produced the gas

Algae

Animals

Fossils

Oceans

Volcanoes

Nitrogen

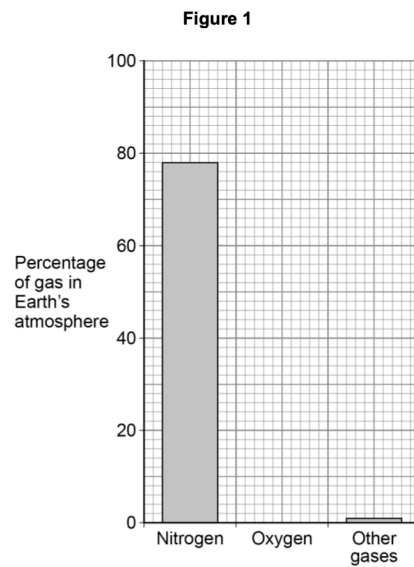
Oxygen

Q11. (2022)

0 1 . 1 The Earth's atmosphere contains 21% oxygen.

Draw the bar for oxygen on **Figure 1**.

[1 mark]



Q12. (2023)

0 2 . 1 Gases in the Earth's early atmosphere caused changes on the Earth.

Draw **one** line from each change to the gas that caused the change.

[2 marks]

Change	Gas that caused the change
	Ammonia
Oceans formed	Carbon dioxide
	Nitrogen
Sedimentary rocks formed	Oxygen
	Water vapour