

Atmosphere

KS3 Chemistry · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What are the two main gases in air, and their approximate percentages?

Step 1 · Biggest

Nitrogen, about 78%.

Step 2 · Second

Oxygen, about 21%.

Answer: Nitrogen 78%, oxygen 21%

Check: Together they make up 99% of dry air.

2. Now try one with the steps

What percentage of dry air is NOT nitrogen or oxygen?

Step 1 · Add the two

Step 2 · Subtract from 100

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Which gas makes up most of the air? [1]

2. What percentage of air is oxygen, approximately? [1]

3. Name the noble gas that makes up nearly 1% of air. [1]

4. Is air an element, a compound or a mixture? [1]

5. About what percentage of air is carbon dioxide: 0.04%, 4% or 40%? [1]
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6. Which gas in the air do we need for respiration? [1]
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7. Where do scientists think the gases of the early atmosphere came from? [1]
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8. Which gas was most common in the early atmosphere? [1]
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9. Give TWO ways carbon dioxide was removed from the early atmosphere. [2]
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10. Where did the oceans come from? [1]
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11. In the copper experiment, 100 cm³ of air shrinks to 80 cm³. What percentage of the air was oxygen? [1]
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12. Why must the gas cool before the final reading in that experiment? [2]
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13. Name TWO pollutant gases that are released into the air when fuels burn. [2]
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14. Explain why there is very little oxygen on Mars, using what you know about Earth's atmosphere. [2]
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4. Before you hand it in

"Air is mostly oxygen."

Air is mostly nitrogen (78%).

"There's lots of carbon dioxide in air."

A small amount, but it has a big effect on climate.

"Air is a compound of nitrogen and oxygen."

Air is a mixture; it can be separated by fractional distillation of liquid air.

"The atmosphere has always been the same."

Oxygen built up only after photosynthesis evolved.