

Teacher modelled question

Copy the model answer down.

It is believed that the Earth's original atmosphere was produced from volcanoes. The following tables show the gases given out by a volcano and the gases present in today's atmosphere.

Gas	Amount given out by a volcano (%)
water vapour ✓	79.0
carbon dioxide ✓	12.0
↓ sulfur dioxide ✓	6.5
↑ nitrogen ✓	1.5
others	1.0

↓ T ↓ condenses (oceans)
 ↓ dissolves (rocks)
 photosynthesis algae

Gas	Amount present in today's atmosphere (%)
nitrogen ✓	78.0
oxygen ✓	21.0
carbon dioxide ✓	0.04
others including water vapour ✓	0.9

↑ photosynthesis
 most is argon

what ↑ or ↓? why?

Use the information in the table and your own knowledge to describe and explain the changes that have happened to the atmosphere.

The amount of nitrogen in the atmosphere has increased from 1.5% to 78%. The amount of sulfur dioxide has decreased from 6.5% to below 0.9%.

In a volcano, 79% of the gases given out is water vapour. In the present atmosphere this has decreased to less than 0.9%. This is because the temperature of the Earth cooled. This led to the water vapour condensing and turning into liquid water.

The amount of carbon dioxide in the gases given out by a volcano is 12%. In the current atmosphere it is only 0.04% so it has decreased a lot. This is because some of it has dissolved in the oceans, some has been turned into sedimentary rock and the rest has been used up by photosynthesis. This photosynthesis by algae initially, and then plants, also produces oxygen. This explains why the oxygen has gone up from less than 1% to 21%.