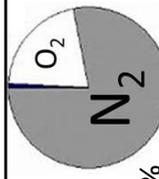


## Key points to learn

1. Atmosphere	Layer of gas around Earth
2. Earth's early atmosphere theory	Volcanos released carbon dioxide (CO <sub>2</sub> ), water vapour (H <sub>2</sub> O) and nitrogen (N <sub>2</sub> )
3. Photosynthesis	Similar to Mars and Venus
	We think it was responsible for changing early atmosphere
	Removes carbon dioxide and makes oxygen
4. Fossil fuels	Carbon + Water → Oxygen + Glucose Dioxide
	Coal, crude oil and natural gas. Formed from fossilised remains of plants and animals
5. Carbon 'locked into' rock	Carbon stored in shells and skeletons turned into limestone
	Carbon in living things was also locked away as fossil fuels
6. Ammonia and methane	Removed from atmosphere by reactions with oxygen
7. Earth's atmosphere today	 <p>Nitrogen: 78% Oxygen: 21% Argon: 0.9% Carbon dioxide: 0.04% Trace amounts of other gases</p>
8. Ozone layer	Nothing to do with Global warming or the Greenhouse Effect. A layer of O <sub>3</sub> protecting us from UV rays
9. Incomplete combustion	If not enough oxygen is available then poisonous carbon monoxide and soot are produced

## Key points to learn

10. Greenhouse effect	Greenhouse gases stop heat escaping from the Earth into space. This results in Earth getting hotter
11. Greenhouse gases	<ol style="list-style-type: none"> <li>1. Carbon dioxide: released from burning fossil fuels</li> <li>2. Methane: released from swamps, rice fields</li> <li>3. Water vapour (eg steam and clouds)</li> </ol>
12. Risks of global climate change	<ol style="list-style-type: none"> <li>1. Rising sea levels as a result of melting ice caps</li> <li>2. Extreme weather eg storms</li> <li>3. Changes to temperature and rainfall patterns</li> <li>4. Ecosystems under threat</li> </ol>
13 Issues with reducing greenhouse gas emission	<ol style="list-style-type: none"> <li>1. It will cost money</li> <li>2. There is still disagreement that it is a problem</li> <li>3. It is difficult to implement</li> </ol>
14. Carbon footprint	The CO <sub>2</sub> released as a result of a persons activities over a year
15. Ideas for reducing our carbon footprint	<ol style="list-style-type: none"> <li>1. Burn less fossil fuels</li> <li>2. Carbon capture</li> <li>3. Reduce demand for beef</li> <li>4. Planting more trees</li> </ol>
16. Carbon capture	Pumping and storing CO <sub>2</sub> underground in rocks
17. Nitrogen oxide	Released by burning fossil fuels. Causes acid rain and breathing issues
18 . Sulfur dioxide	Released by burning fossil fuels. Causes acid rain

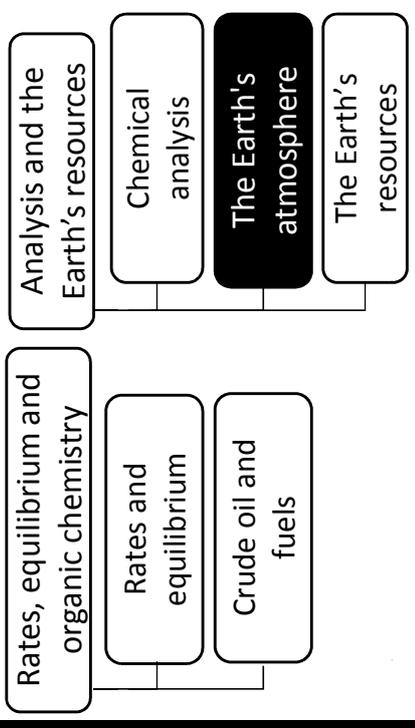
# Trilogy C11: The Earth's atmosphere

Collins revision guide: Chemistry of the atmosphere

## Knowledge Organiser

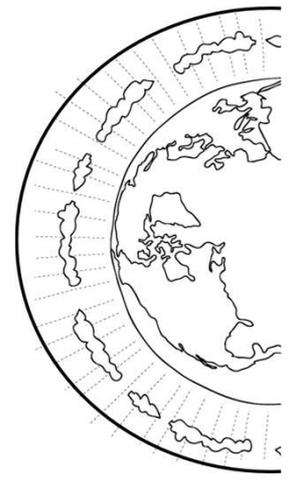


### Big picture (Chemistry Paper 2)



## Background

The bubble of gas around our planet that we call Earth's atmosphere does far more than provide the oxygen we need for respiration. In Europe, winters are almost two weeks shorter than they were 40 years ago. Extreme weather seems more common than ever. Cases of asthma and respiratory difficulties increase year-on-year and we are always looking at ways of making our air cleaner .





## Quick Fire Questions

This worksheet is fully supported by a video tutorial; <https://youtu.be/DznhhA2QHUg>

1. How much oxygen is there in the atmosphere?
2. How much carbon dioxide is there in the atmosphere?
3. How much nitrogen is there in the atmosphere?
4. How was the early atmosphere different to today's?
5. What led to an increase in oxygen in the atmosphere?
6. What led to the increase in nitrogen in the atmosphere?
7. Give two things that led to a decrease in carbon dioxide in the atmosphere.
8. What are three greenhouse gases?
9. How do greenhouse gases interact with radiation?
10. What impact does increased level of these gases in the atmosphere have on the climate?
11. Give two activities that lead to an increased level of greenhouse gases in the atmosphere.
12. What are the predictions of the effects of greenhouse gases on future temperature levels?
13. Define the term carbon footprint.
14. What are the major sources of atmospheric pollution?
15. What affect does carbon dioxide have on the atmosphere?
16. What affect does sulfur dioxide have on the atmosphere?
17. What affect does water vapour have on the atmosphere?
18. What affect does carbon monoxide have on the atmosphere?
19. What affect does nitrogen oxides have on the atmosphere?
20. What affect do carbon particles have on the atmosphere?
21. What affect does pollution have on humans?
22. What affects does pollution have on plants?
23. What affect does pollution have on animals?