



AQA GCSE Combined Science: Trilogy

Topic Checklists

5.9 Chemistry of the Atmosphere

5.9.1 The Composition and Evolution of the Earth's Atmosphere

Topic	Success Criteria	Progress		
The Proportions of Different Gases in the Atmosphere	I can name the main gases that make up the Earth's atmosphere.			
	I can state the proportions of different gases in the atmosphere as a fraction and a percentage.			
The Earth's Early Atmosphere	I can describe what the Earth's atmosphere is thought to have been like during the first billion years of the Earth's existence.			
	I can describe what is thought to have happened to the Earth's atmosphere when oceans formed.			
	I can interpret evidence and evaluate different theories about the Earth's early atmosphere, given appropriate information.			
	I can explain why evidence for the early atmosphere is limited.			
How Oxygen Increased	I can name the types of organisms that carry out photosynthesis.			
	I can write a word equation to represent photosynthesis.			
	I can write a symbol equation to represent photosynthesis.			
	I can describe how the percentage of oxygen in the atmosphere increased.			
	I can recall how many years ago oxygen first appeared in the atmosphere.			
How Carbon Dioxide Decreased	I can describe how the percentage of carbon dioxide in the atmosphere decreased.			
	I can describe the main changes in the atmosphere over time and some of the likely causes of these changes.			
	I can describe and explain the formation of deposits of limestone, coal, crude oil and natural gas.			

5.9.2 Carbon Dioxide and Methane as Greenhouse Gases

Topic	Success Criteria	Progress		
Greenhouse Gases	I can name the main greenhouse gases.			
	I can describe the role of greenhouse gases in the atmosphere.			
	I can describe the greenhouse effect in terms of the interaction of short and long wavelength radiation with matter.			
Human Activities Which Contribute to an Increase in Greenhouse Gases in the Atmosphere	I can recall two human activities that increase the amount of carbon dioxide in the atmosphere.			
	I can recall two human activities that increase the amount of methane in the atmosphere.			
	I can explain why many scientists believe that human activities will result in global climate change.			
	I can evaluate the quality of evidence in a report about global climate change given appropriate information.			
	I can describe uncertainties in the evidence base for global climate change.			
	I can recognise the importance of peer review of results and of communicating results to a wide range of audiences.			
Global Climate Change	I can describe four potential effects of global climate change.			
	I can discuss the scale, risk and environmental implications of global climate change.			
The Carbon Footprint and Its Reduction	I can give a definition for the term 'carbon footprint'.			
	I can describe actions to reduce emissions of carbon dioxide and methane.			
	I can give reasons why actions to reduce a carbon footprint may be limited.			

**5.9.3 Common Atmospheric Pollutants and Their Sources**

Topic	Success Criteria	Progress		
Atmospheric Pollutants from Fuels	I can describe how carbon monoxide, soot (carbon particles), sulfur dioxide and oxides of nitrogen are produced by burning fuels.			
	I can predict the products of combustion of a fuel given appropriate information about the composition of the fuel and the conditions in which it is used.			
Properties and Effects of Atmospheric Pollutants	I can describe the properties of carbon monoxide.			
	I can describe the effects of carbon monoxide on humans.			
	I can describe the effects of sulfur dioxides and oxides of nitrogen on humans.			
	I can describe the effects of sulfur dioxide and oxides of nitrogen on the environment.			
	I can describe the effects of particulates.			
	I can describe and explain the problems caused by increased amounts of these pollutants in the air.			