

Year 11 C13: The Earth's atmosphere. Chemistry – Science Faculty

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
<p>In this chapter, students will learn about the Earth's atmosphere. Students will be able to describe the volcanic activity theory of the origin of the atmosphere and be able to interpret evidence concerning other theories, and be able to evaluate them. To describe the history of the atmosphere students will need to have a sense of the timescales involved.</p> <p>Along with an understanding of the origins of the atmosphere, students will also understand how it has evolved over time. This includes both how the general composition of the atmosphere has changed and how the atmosphere is currently being affect by human activity. Students should be able to describe the human activities that are thought to cause global warming, and be able to explain some of the effects this has on the climate of the Earth. Students should also be able to explain the effect of other pollutants on the Earth, including carbon monoxide, sulfur dioxide, nitrogen oxides, and particulates.</p> <p>Throughout this chapter, students will have many opportunities to develop their working scientifically skills, including evaluating models and interpreting and evaluating evidence for scientific theories.</p>	<ul style="list-style-type: none"> • History of the atmosphere • Our evolving atmosphere • Greenhouse gases • Global climate change • Atmospheric pollutants 	<p>Pollutant Evolution</p>

Challenge and Support:	World wide learning/ links to 21 st century:	Cultural capital/ Industry/ Enrichment:
<ul style="list-style-type: none"> • <i>Linking chemical processes with ‘real world’ changes in terms of the composition of the atmosphere.</i> • <i>Interpreting data and drawing conclusions based upon this.</i> • <i>Considering the reliability of our models and their limitations.</i> 	<ul style="list-style-type: none"> • Global climate changed linked to the emissions of greenhouse gases (predominantly carbon dioxide) is a common discussion in many arenas of modern life from groups such as extinction rebellion and intergovernmental panels attempting to reach agreements in order to curb carbon dioxide production across the globe. 	<ul style="list-style-type: none"> • Climate research is an important field of study allowing us to understand the impact of rising carbon dioxide levels. • The UEA has a school for environmental science where many people study the atmosphere.
Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
<ul style="list-style-type: none"> • Students are provided with a long term history of the Earth from its origins to the modern day, over billion of years, in terms of the atmosphere. • Opportunities to consider the moral obligation people have to reduce carbon dioxide emissions. 	<ul style="list-style-type: none"> • Links to GCSE biology and physics with global climate change caused by burning fossil fuels. 	<ul style="list-style-type: none"> • Life began at the big bang. • The Earth was made in the big bang. • There is lots of carbon dioxide in the atmosphere.
Assessment timeline:		
<ul style="list-style-type: none"> • <i>regular EPPQs</i> • <i>end of unit test (separate science only)</i> • <i>EPPQ homework task</i> • <i>in lesson questioning and other progress checks</i> 		
Home learning		
<ul style="list-style-type: none"> • <i>EPPQ homework booklet</i> 		

Feedback

- *Students self/peer mark homework booklets and set revision goals based on understanding.*
- *Feedback based on the end of the unit test (separate science only).*

Length of unit (duration indicated in lessons)

C13.1	C13.2	C13.3	C13.4	C13.3	C13 test
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Unit: C13 The Earth's atmosphere, Chemistry