



	Lessons Sequence					
<b>TOPIC (S)</b> <b>CHEM OF THE ATMOSPHERE</b>	1. The early atmosphere 2. The current atmosphere 3. How oxygen levels increased and carbon dioxide levels decreased		4. Greenhouse gases and their effect 5. Climate change and carbon footprint		6. Atmospheric pollutants	
<b>Knowledge &amp; Skills development</b>	<ul style="list-style-type: none"> <li>Knowledge of the composition of the early atmosphere, how it has changed and the current composition of the atmosphere</li> <li>Interpret evidence and evaluate different theories about the Earth's early atmosphere</li> <li>Describe the main changes in the atmosphere over time and some of the likely causes of these changes</li> <li>Describe and explain the formation of deposits of limestone, coal, crude oil and natural gas.</li> <li>Describe the greenhouse effect in terms of the interaction of short and long wavelength radiation with matter</li> <li>Evaluate the quality of evidence in a report about global climate change given appropriate information</li> <li>Describe uncertainties in the evidence base</li> <li>Recognise the importance of peer review of results and of communicating results to a wide range of audiences</li> </ul>			<ul style="list-style-type: none"> <li>Describe briefly four potential effects of global climate change and be able to discuss the scale, risk and environmental implications of them</li> <li>Describe actions to reduce emissions of carbon dioxide and methane and give reasons why actions may be limited</li> <li>Describe how carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen are produced by burning fuels</li> <li>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</li> <li>Describe and explain the problems caused by increased amounts of these pollutants in the air</li> </ul>		
<b>Assessment / Feedback Opportunities</b>	Targeted questioning throughout topic	Teacher assessment of practical skills during investigation - verbal	Knowledge Recall Quizzes	Deep marking of written task in students books	Topic Test	Targeted exam questions – teacher or self-assessed
<b>Cultural Capital</b>	<ul style="list-style-type: none"> <li>Possible conservation project</li> </ul>					
<b>SMSC / Promoting British Values</b> (Democracy, Liberty, Rule of Law, Tolerance & Respect)	<ul style="list-style-type: none"> <li>Listening to others during presentations</li> <li>Working in groups during practical work or research tasks</li> </ul>					
<b>Reading opportunities</b>	<ul style="list-style-type: none"> <li>Recommended Read: All About Chemistry (Big Questions) (Robert Winston)</li> <li>Recommended Read: What Is Climate Change? (Gail Herman)</li> <li>Recommended Read: What Every Child Should Know About Climate Change (Baby Professor)</li> </ul>					
<b>Key Vocabulary</b>	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest					

	Composition, atmosphere, photosynthesis, formation, deposits, greenhouse effect, uncertainties, radiation, wavelength, peer review, climate, implication, pollutant, combustion
<b>Digital Literacy</b>	SharePoint resources including topic quizzes Possible use of excel to plot graphs and analyse data, powerpoint, word, etc to present information, internet for research
<b>Cross-Curricular Links</b>	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators
<b>Careers</b>	Politician, Climate Scientists, Environmentalist