



'An ambitious curriculum that meets the needs of all'
Medium Term Planning - Topic: Climate

Curriculum Intent	
Skills/National Curriculum Links	<p>In addition to working further on objectives from Year __, pupils will be taught, following National Curriculum guidelines, the following this topic:</p> <p>Earth and atmosphere</p> <ul style="list-style-type: none">• Earth as a source of limited resources and the efficacy of recycling• The carbon cycle• The composition of the atmosphere• The production of carbon dioxide by human activity and the impact on climate.
Spiritual, moral, social, and cultural development	<p>SMSC: This unit of work provides several opportunities for students to work together practically in groups, which encourages them to share views and opinions and take instructions from others. Group work opportunities encourage teamwork and respect for others. In practical lessons students follow laboratory rules for the safety of all.</p> <p>Our society has become dependent on scientific developments which we could not have foreseen 50 years ago but also our lives are likely to change significantly in the future because of our reckless damaging activities to the environment as a human society.</p> <p>Students must consider their impact on the world around them and start to look at what we can do to help the next generation have a habitable planet.</p> <p>PSHE/British Values: The impact of the change in the atmosphere is affecting resources, wildlife and is a huge issue around the world. Students will complete teamwork, leadership and put science into everyday situations. They will show mutual respect during classwork.</p> <p>Skills Builder: Listening (Receiving, retaining and processing info), Speaking (The oral transmission of info and ideas), Problem solving (Find a solution to a situation or challenge), Creativity (imagination and generation of new ideas), Staying positive (The ability to use tactics and strategies to overcome setbacks), aiming high (Set clear and tangible goals), Leadership and teamwork</p>
Numeracy	Percentage composition of the gases in the atmosphere shown in a pie chart.
Literacy	<p>Vocabulary Tier 2: increase, percentage, scale, remote, summarises, vegetation, processes, pattern.</p> <p>Vocabulary Tier 3: atmosphere, greenhouse effect, greenhouse gas, global warming, respiration, combustion, fossil fuel, photosynthesis, carbon cycle, carbon sink, climate change.</p> <p>Reading: Following a written method and read risk assessments. Students may be directed to the textbook; this could be in lesson or at home on Kerboodle.</p> <p>Writing: Describing and explaining scientific phenomenon, free response writing for describing precautions taken, use of word mat to promote sentence formation. Converting diagrams into text.</p> <p>Oracy: Inclusion of BEST resources which are research evidence on common misunderstandings in science, effective diagnostic questioning and formative assessment, constructivist approaches to building understanding, and effective sequencing of key concepts that promote metacognitive talk and dialogue.</p>
Becoming future ready	<p>Careers/Employability:</p> <p>Aerospace engineer</p> <p>Climatologist</p> <p>Meteorologist</p> <p>Geologist</p> <p>Oil and gas engineer</p>
Adaptation	Throughout this topic, quality first teaching will provide differentiation:



QFT/SEND Provision	<p>By product: Linear assessments and differentiated worksheets and practical work.</p> <p>By resource: A more scaffolded approach will be used for questions and for extra help will be given methods. Lessons are differentiated and support worksheets coloured blue.</p> <p>By Intervention: by providing different levels of supervision and support</p> <p>By Progressive Questioning: exploring pupils' understanding through interactive dialogue.</p> <p>By Grouping: according to prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.</p> <p>By Offering Optional Activities: In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>
Implementation Curriculum Delivery	<p>To be able to:</p> <p>Securing Mastery Goals</p> <ul style="list-style-type: none">- 3.7.3 Greenhouse gases reduce the amount of energy lost from the Earth through radiation and therefore the temperature has been rising as the concentration of those gases has risen.- 3.7.3 Scientists have evidence that global warming caused by human activity is causing changes in climate.- 3.7.3 Methane and carbon dioxide are greenhouse gases.- Earth's atmosphere contains around 78% nitrogen, 21% oxygen, <1% carbon dioxide, plus small amounts of other gases.- 3.7.3 Describe how human activities affect the carbon cycle. <p>Exceeding Mastery Goals</p> <ul style="list-style-type: none">- 3.7.3 Evaluate claims that human activity is causing global warming or climate change. <p>Enquiry processes</p> <ul style="list-style-type: none">- 2.1 Identify patterns in data. <p>Securing Mastery Goals</p> <ul style="list-style-type: none">- 3.7.3 Carbon is recycled through natural processes in the atmosphere, ecosystems, oceans, and the Earth's crust (such as photosynthesis and respiration) as well as human activities (burning fuels).- 3.7.3 Use a diagram to explain how carbon is recycled in the environment and through living things.- 3.7.3 Describe how human activities affect the carbon cycle. <p>Enquiry processes</p> <ul style="list-style-type: none">- 2.5 Make it clear, concrete, correct, and coherent. <p>Securing Mastery Goals</p> <ul style="list-style-type: none">- 3.7.3 Scientists have evidence that global warming caused by human activity is causing changes in climate.- 3.7.3 Describe how human activities affect the carbon cycle.- 3.7.3 Describe how global warming can impact on climate and local weather patterns. <p>Exceeding Mastery Goals</p> <ul style="list-style-type: none">- 3.7.3 Compare the relative effects of human-produced and natural global warming.- 3.7.3 Evaluate the implications of a proposal to reduce carbon emissions. <p>Enquiry processes</p> <ul style="list-style-type: none">- 2.5 Make it clear, concrete, correct, and coherent. <p>Enquiry process activity</p> <ul style="list-style-type: none">- 3.7.3 Investigate the contribution that natural and human chemical processes make to our carbon dioxide emissions.
Learning Outcomes (Core Knowledge)	<p>Red denotes interleaving; aspects of knowledge covered previously.</p>
Current learning to be developed in the future within:	<p>In GCSE chemistry you will also cover in more detail how the Earth's atmosphere has changed and consequences of global warming. You will also learn more about sustainable development and nutrient cycles in biology.</p>
Assessment	<p>Refer to assessment maps for formative and summative assessment opportunities.</p>
Impact	<p>Attainment and Progress – Refer to assessment results / data review documentation.</p>