

<p><i>Deliberate retrieval of expected prior knowledge (be specific)</i></p> <p>Retrieval should occur regularly throughout the learning journey:</p> <ul style="list-style-type: none"> Chemical changes Y8 – combustion Combustion – exothermic reactions – Chemical changes Chemical reactions – reactants & products Knowledge of the presence oxygen and carbon dioxide in the atmosphere. Global warming, carbon dioxide causing the planet to heat up Renewable and non-renewable energy source Hinge question – what percentage of the atmosphere is carbon dioxide? 	<p><i>Academic transformation (be specific)</i></p> <p>Your core curriculum must do all of the following:</p> <ul style="list-style-type: none"> Earth's atmosphere is now 80% nitrogen, 20% oxygen and small proportion of other gases including carbon dioxide, water vapour and noble gases How the Earth's atmosphere was formed and developed – intense volcanic activity that released gases that formed the early atmosphere and water vapour that condensed to form the oceans (like that of Mars) Carbon dioxide reduced in the atmosphere due to photosynthesis, dissolving in the oceans, formation of sedimentary rocks and fossil fuels that contain carbon. Describe how water vapour, carbon dioxide and methane contribute to the greenhouse effect and what it is. Recall human activities that increase the amounts of each of the greenhouse gases carbon dioxide and methane and the impact on climate change Describe the effects of climate change and examples of work being done to solve climate change Describe how carbon monoxide, soot (carbon particles), sulfur dioxide and oxides of nitrogen are produced by burning fuels Identify materials as finite or renewable and the importance of recycling/life cycle assessments. 	<p><i>Personal transformation (3 or 4)</i></p> <p>Deliberately inviting students and our community to enrich learning by sharing their experiences, history and first hand accounts. Explicitly choose application opportunities for learners to:</p> <ul style="list-style-type: none"> Discussions around climate change and importance of reducing use of fossil fuel <p>https://www.youtube.com/watch?v=pNeaF0ypnCQ How is life formed? Discussion around primordial soup theory and panspermia</p> <ul style="list-style-type: none"> How is climate change covered in the media – discuss how opinions are presented, speculation and bias.
<p><i>Can I Learning Questions</i></p> <p><i>Can I describe the history of our atmosphere?</i></p> <p><i>Can I describe the effect of greenhouse gases?</i></p> <p><i>Can I measure energy released when fuels burn?</i></p> <p><i>Can I link pollutant gases to their risks?</i></p> <p><i>Can I explain the risks of climate change?</i></p> <p><i>Can I compare renewable and non-renewable energy resources?</i></p> <p><i>Can I evaluate the pros and cons of recycling?</i></p> <p><i>Can I explain how carbon is recycled naturally?</i></p>	<p><i>Literacy / Oracy</i></p> <p><i>Key vocabulary</i> Atmosphere, Condensed, Photosynthesis, Deforestation, Renewable, Greenhouse effect, combustion.</p> <p><i>Disciplinary reading</i></p> <ul style="list-style-type: none"> Articles on greenhouse gases to compare the different portrayals based on opinion and bias https://metro.co.uk/2017/12/31/why-bags-for-life-could-actually-be-terrible-for-the-environment-6849337/. <p><i>Classroom talk</i></p> <ul style="list-style-type: none"> Think-Pair-Share & structured debate/discussion: key questions 	<p><i>Misconceptions (5 or 6 examples)</i></p> <ul style="list-style-type: none"> Atmosphere is mostly oxygen Carbon dioxide is very common in the atmosphere The greenhouse effect is a bad thing Acid rain causes skin burn. Once carbon dioxide is released into the atmosphere, it will stay there forever.