



Subject: Year 9 P.1 Energy

Overarching Topic: Energy											
<p>Why is this topic being studied at this time?</p> <p>How does it fit into the wider subject curriculum?</p>	<p>The concept of energy emerged in the 19th century. The idea was used to explain the work output of steam engines and then generalised to understand other heat engines. It also became a key tool for understanding chemical reactions and biological systems. Limits to the use of fossil fuels and global warming are critical problems for this century. Physicists and engineers are working hard to identify ways to reduce our energy usage.</p> <p>Having studied energy at KS3 students will be able to analyse today's Energy Resources and how they impact our lives. In doing so they should be able to identify the types and uses of Energy and why we need Energy resources.</p>										
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<p>The Big Questions (What questions will students be able to answer upon mastery of the topic?)</p>											
<p>The Key Skills/ Techniques</p>	<p>The sophistication and application of skills will become more advanced as students' progress through the critical, core and pinnacle knowledge.</p> <table border="1"> <thead> <tr> <th>Skill/Technique</th> <th>How will this skill be developed?</th> </tr> </thead> <tbody> <tr> <td>1. Graphing & Drawing</td> <td>Draw graphs with suitable scales, axes and units. Correct line of best fit. Appreciation of anomalies and processed data. Scientific drawing of cells, concepts and scientific equipment.</td> </tr> <tr> <td>2. Variables</td> <td>Identify independent, dependent and control variables and devise experiments to include these to ensure valid results. Appreciation of uncertainty.</td> </tr> <tr> <td>3. Data Analysis</td> <td>Describe, explain and predict trends. Graph and table data interpretation. Identify links and patters within and between topics. Statistical analysis of data to include mode/median/mean/range determination. Drawing justified conclusions from presented data.</td> </tr> <tr> <td>4. Application</td> <td>Apply known and taught theory in unfamiliar contexts. Making links to taught theory and extracting key ideas. Communicating using correct scientific terminology.</td> </tr> </tbody> </table>	Skill/Technique	How will this skill be developed?	1. Graphing & Drawing	Draw graphs with suitable scales, axes and units. Correct line of best fit. Appreciation of anomalies and processed data. Scientific drawing of cells, concepts and scientific equipment.	2. Variables	Identify independent, dependent and control variables and devise experiments to include these to ensure valid results. Appreciation of uncertainty.	3. Data Analysis	Describe, explain and predict trends. Graph and table data interpretation. Identify links and patters within and between topics. Statistical analysis of data to include mode/median/mean/range determination. Drawing justified conclusions from presented data.	4. Application	Apply known and taught theory in unfamiliar contexts. Making links to taught theory and extracting key ideas. Communicating using correct scientific terminology.
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5. Working Scientifically

Identify hazards and planning to limit risk. Describe how to improve accuracy/precision/repeatability/reproducibility/validity. Evaluate reliability of methods and investigations, taking in to account data analysis.