



Subject: Year 8 Energy Resources

| KS2 Prior Learning | | | |
|---|---|---|--|
| None | | | |
| Overarching Topic: Energy resources | | | |
| <p>Why is this topic being studied at this time?</p> <p>How does it fit into the wider subject curriculum?</p> | <ul style="list-style-type: none"> The topic of the importance of energy sources is a conversation that will continue over the next few decades as more people begin to realize the value of utilizing renewable energy as opposed to getting energy from sources that don't naturally regenerate. Nonrenewable energy sources include fossil fuels that come from beneath the ground and take thousands of years to form. Renewable energy sources regenerate quickly and can supply a region with its long-term energy needs far into the future. This unit introduces pupils to a topic which may be new to them, although it has links with work done in key stage 2. | | |
| | Essential | Core | Ambitious |
| <p>The Big Questions (What questions will students be able to answer upon mastery of the topic?)</p> | <p>Why are fuels useful? Can you identify some common fuels? What are fossil fuels? What are renewable energy resources? What does non-renewable mean? What is produced when fuels combust in oxygen? What are the consequences of burning fossil fuel?</p> | <p>Why are fossil fuel reserves limited and why are they are called non-renewable? How are fossil fuels were made? Can you identify the main renewable energy resources? What are the advantages and disadvantages of different energy resources? How we use each resource to produce electricity? What are greenhouse gases? How does the production of greenhouse gases lead to global warming?</p> | <p>Can you describe the operation of a device driven by a renewable energy source?, <i>eg solar cell to generate electricity?</i> Can you compare and evaluate the different Energy resources in terms of reliability and sustainability? Can I evaluate the social, economic and environmental consequences of using a resource to generate electricity, from data?</p> |
| <p>The Key Skills/ Techniques</p> | <p>The sophistication and application of skills will become more advanced as students' progress through the essential, core and ambitious knowledge</p> | | |
| | <p>Skill/Technique</p> | <p>How will this skill be developed?</p> | |
| | <p>1. Graphing & Drawing</p> | <p>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.</p> | |
| | <p>2. Variables</p> | <p>Identify independent, dependent and control variables and devise experiments to include these to ensure valid results. Appreciation of uncertainty.</p> | |
| | <p>3. Data Analysis</p> | <p>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.</p> | |
| | <p>4. Application</p> | <p>Apply known and taught theory in unfamiliar contexts. Making links to taught theory and extracting key ideas. Communicating using correct scientific terminology.</p> | |
| <p>5. Working Scientifically</p> | <p>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.</p> | | |

