

**Barnsley Academy – Year 7 Science Energy Curriculum**  
**Scheme of Work – 2023-24**

Term 1 Week 3				
	1	2	3	4
<b>Lesson Focus</b>	Insulators	Power and Energy	Cost of Electricity	Energy in Food (part 1)
<b>Prerequisite Knowledge</b>	Heat transfer	Energy transfers and energy stores	Calculating power and energy	Energy stores
<b>Core Knowledge</b>	<ul style="list-style-type: none"> <li>Describe an insulator in terms of energy transfers, identify methods of reducing energy transfers and explain how they work</li> <li>State how energy transfers from the home to the surroundings</li> </ul>	<ul style="list-style-type: none"> <li>Explain the relationship between energy and power.</li> <li>Calculate power using energy and time values given</li> </ul>	<ul style="list-style-type: none"> <li>Convert between power and time values.</li> <li>Calculate kilowatt hours from power ratings and time used</li> <li>Calculate the costs of running home appliances.</li> </ul>	<ul style="list-style-type: none"> <li>Identify variables to control to ensure a fair comparison of foods</li> <li>Write a method to test the hypothesis</li> <li>Do a risk assessment then carry out the investigation</li> </ul>
<b>Expert Model /Guided Practice/Agreed Approach</b> (Procedural Knowledge)	<ul style="list-style-type: none"> <li>Scaffold explaining how heat transfer can be introduced</li> </ul>	<ul style="list-style-type: none"> <li>Teacher describes what is meant by power</li> <li>Use of the equation model for calculations</li> </ul>	<ul style="list-style-type: none"> <li>Model for converting units</li> <li>Use of the equation model for calculations</li> </ul>	<ul style="list-style-type: none"> <li>Model for writing a method</li> <li>Demonstration of practical</li> </ul>
<b>Independent Practice</b>	<ul style="list-style-type: none"> <li>Explain the features of a thermos flask</li> <li>Energy transfers in the home worksheet</li> </ul>	<ul style="list-style-type: none"> <li>Describe the meaning of power and explain in a given situation</li> <li>Power calculations</li> </ul>	<ul style="list-style-type: none"> <li>Converting units</li> <li>Energy calculations</li> <li>Calculating cost of electricity</li> </ul>	<ul style="list-style-type: none"> <li>Writing a method</li> <li>Risk Assessment</li> <li>Practical work</li> </ul>
<b>Assessment</b> (Informal/Formal)	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.
<b>Resources</b>				

<b>Specific SEN(D)/EAL support</b>	Scaffolding and sentence starters for tasks	Whiteboards used to show the recall of facts Use of visualiser to show calculations	Whiteboards used to show the recall of facts Use of visualiser to show calculations Equation model	Scaffold for writing a method
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