

# Year 7 Physics Energy and Electricity - Objectives and Assessment

Lesson	Range and Content Objective	Skills Objective	Activities	Formal Assessment	Success Criteria
1.	To know the different types of energy		Energy transfer sheet to identify types of energy	1	To know the different types of energy
2.	To know where mains electricity comes from		<ul style="list-style-type: none"> <li>• Group ideas</li> <li>• Sorting activity</li> <li>• Electric journey (interactive)</li> <li>• Bunsen burner demo</li> </ul>		<ul style="list-style-type: none"> <li>• Must be able to explain how electricity is produced in a power station</li> <li>• Challenge: Give further examples of electricity production e.g. Dynamo.</li> </ul>
3.	To understand how fossil fuels were formed		<ul style="list-style-type: none"> <li>• Active book animation</li> <li>• Sequencing activity</li> </ul>		<ul style="list-style-type: none"> <li>• Must be able to explain coal, oil and gas were formed.</li> <li>• Challenge: Explain where the energy in these fuels originated.</li> </ul>
4.	To understand the problems with burning fossil fuels	Identify environmental issues linked to scientific developments	<ul style="list-style-type: none"> <li>• Oil products starter</li> <li>• Running out</li> <li>• Global warming 101 video (you-tube)</li> <li>• Climate change explanation task</li> </ul>	Climate change assessment task in books.	<ul style="list-style-type: none"> <li>• Must list 2 problems with burning fossil fuels.</li> <li>• Challenge: Suggest ways to combat these problems.</li> </ul>

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5.	To understand that there are alternatives to burning fossil fuels	Identify positive and negative drawbacks of scientific developments	<ul style="list-style-type: none"> <li>Renewables class quiz</li> <li>Demo using energy transfer kit</li> <li>Exp Sci HSW7 p127</li> <li>Activity builder activities.</li> </ul>		<ul style="list-style-type: none"> <li>Must give advantages and disadvantages of different alternative energy resources.</li> <li>Challenge: Use adv/disadv to form opinions on best energy resources.</li> </ul>
6.	Comparing the amount of energy in different foods	<ul style="list-style-type: none"> <li>Planning an investigation</li> <li>Carrying out (reproducibility and safety)</li> <li>Conclusion and evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Burning different foods.</li> </ul>		.
7.	To understand what happens inside an electrical circuit	To use models to explain a scientific process	<ul style="list-style-type: none"> <li>Make and draw a simple circuit</li> <li>Group explanations</li> <li>Kinaesthetic model as a class</li> <li>Labelling of 'burger bar' model</li> </ul>		<ul style="list-style-type: none"> <li>Must identify parts of a model as representing parts of a circuit.</li> <li>Challenge: Give the strengths and weaknesses of the model</li> </ul>
8.	To understand what happens inside an electrical circuit	To use models to explain a scientific process	<ul style="list-style-type: none"> <li>Designing model assessment task</li> </ul>	Levelled s/c in assessment books.	<ul style="list-style-type: none"> <li>See Assessment Task.</li> </ul>
9.	To recognise differences between	To use models to explain a scientific process	<ul style="list-style-type: none"> <li>Consideration of what will happen when a bulb is</li> </ul>	Class discussion and group	<ul style="list-style-type: none"> <li>Must identify parts of a model as</li> </ul>

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	series and parallel circuits		<p>removed in series.</p> <ul style="list-style-type: none"> <li>Challenge to make new circuit</li> <li>Recording and modelling of parallel circuit</li> <li>(Extension) Design own model of parallel circuits</li> </ul>	observation	<p>representing parts of a circuit.</p> <ul style="list-style-type: none"> <li>Challenge: Give the strengths and weaknesses of the model</li> </ul>
10.	To understand the term 'current'	To use data to draw conclusions	<ul style="list-style-type: none"> <li>Look at ammeter and how to use it</li> <li>Measure current in series</li> <li>Define current from findings</li> <li>Measure current in parallel</li> <li>Current calculations</li> </ul>	Marking of work	<ul style="list-style-type: none"> <li>Must state what current readings would be at various points in series and parallel circuits.</li> <li>Challenge: Give an explanation of why the current changes in parallel circuits.</li> </ul>
11.	To understand the term 'resistance'	To use data to draw conclusions	<ul style="list-style-type: none"> <li>Measurement of current in series with increasing number of bulbs</li> <li>Explanation of findings</li> <li>Definition of resistance</li> <li>Side effects of resistance and examples of use.</li> <li>Current and resistance statement sorting</li> </ul>	Answers to sorting task	<ul style="list-style-type: none"> <li>Must state what happens to current when additional bulbs are added and explain why.</li> <li>Challenge: Explain useful aspects of side effects of resistance.</li> </ul>
12.	To be able to change a fuse and wire a plug		<ul style="list-style-type: none"> <li>Looking at fuse and types, focus on safety and choice of fuse.</li> </ul>		<ul style="list-style-type: none"> <li>Must be able to rewire a plug correctly</li> <li>Challenge: Identify</li> </ul>

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			<ul style="list-style-type: none"><li>• Demo of how to wire a plug and practical.</li><li>• Supporting worksheet</li></ul>		the purpose of the different parts of a mains plug.
13.			END OF TOPIC TEST		