

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

Term 1 Week 2

	1	2	3	4
<b>Lesson Focus</b>	Conduction (Part 2)	Convection	Thermal Radiation	Investigating Cooling
<b>Prerequisite Knowledge</b>	Solids, liquids, gases Energy transfers	Solids, liquids, gases Conduction	Energy sources	Thermal radiation Energy transfers
<b>Core Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Describe the difference between energy and temperature</li> <li>▪ Draw a table for results, including units</li> <li>▪ Identify hazards, risks and safety precautions then safely carryout the practical work</li> <li>▪ Describe patterns, using data to back them up</li> <li>▪ Explain how conduction occurs and say in which materials it happens most effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Describe how heat transfers occurs by convection and explain what is meant by a convection current</li> <li>• Explain everyday observations using ideas on convection.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe heat transfer by radiation</li> <li>• Explain everyday observations using an understanding of absorption and emission of radiation</li> <li>• Apply knowledge of conduction, convection and radiation to questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Draw conclusions from evidence collected</li> <li>• Identify sources of error in the investigation and suggest improvements</li> </ul>
<b>Expert Model /Guided Practice/Agreed Approach</b> (Procedural Knowledge)	<ul style="list-style-type: none"> <li>• Teacher demonstration for the practical</li> <li>• Model for drawing results tables</li> </ul> Variables explained	<ul style="list-style-type: none"> <li>• Slides 4-7 Teacher explains convection</li> <li>• Teacher demonstrates practical</li> <li>• Expert model – explaining convection currents</li> </ul>	<ul style="list-style-type: none"> <li>• Slide 4 + 5 Thermal radiation explained</li> <li>• Expert model on why objects are certain colours</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher describes and demonstrates the investigation</li> <li>• Expert model for writing conclusions</li> </ul>
<b>Independent Practice</b>	<ul style="list-style-type: none"> <li>• Correct thermal energy statements</li> <li>• Drawing results tables</li> <li>• Risk assessment</li> <li>• Conduction practical</li> </ul>	<ul style="list-style-type: none"> <li>• Practical work</li> <li>• Describe a convection current</li> <li>• Explaining convection currents</li> </ul>	<ul style="list-style-type: none"> <li>• Describing radiation</li> <li>• Explaining the why objects are certain colours</li> <li>• Exam questions</li> </ul>	<ul style="list-style-type: none"> <li>• Investigation practical</li> <li>• Write conclusion</li> <li>• Identify sources of error</li> </ul>

	<ul style="list-style-type: none"> <li>Conclusion</li> </ul> Explaining conduction			
<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>	Scaffold provided for some tasks	Sentence starters on some tasks	Sentence structures Expert models	Expert models Demonstration of practical