

Topics in this cycle: Heating and cooling/Work	Taught: Spring 1	Year Group: 8
Key knowledge/concepts to be learnt ('Tell me about....')		Websites/blogs/YouTube links and further reading to deepen and consolidate learning
<ul style="list-style-type: none"> • What is energy and temperature? State the difference between energy and temperature. Describe what happens when you heat up solids, liquids and solids. Explain what is meant by equilibrium. • How are particles involved in energy transfers? Describe how energy is transferred by particles in conduction and convection. Describe how an insulator can reduce energy transfer. • How is energy transferred by radiation? Describe some sources of infrared radiation. Explain how energy is transferred by radiation. • What is work done? Calculate work done. Apply the conservation of energy to simple machines. 		<p>Notes:</p> <p>Heating and cooling notes Heating and cooling - Energy - KS3 Physics - BBC Bitesize - BBC Bitesize</p> <p>Temperature and heat Heat transfer - BBC Bitesize</p> <p>Conduction, convection and radiation KS3 Energy Conduction, Convection and Radiation – Animated Science</p> <p>Videos:</p> <p>Conduction, convection and radiation CBBC - KS3 Curriculum Bites, Want 2Tlk Science, Conduction, convection and radiation</p> <p>Conduction and convection Conduction and Convection (youtube.com)</p> <p>Radiation Radiation (youtube.com)</p>

Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
Temperature	A measure of how hot or cold something is, measured in degrees Celsius.	<p>Extended writing –Explain the difference between conduction, convection and radiation.</p> <p>End of Unit test: 25 minutes/25 marks</p> <ul style="list-style-type: none"> • Short answer questions • Extended writing • 3 marks for SPAG
Thermometer	Instrument used to measure temperature.	
Equilibrium	Objects are at thermal equilibrium when they are at the same temperature.	
Conductor	A material that conducts charge or energy well such as a metal or graphite.	
Conduction	The way in which energy is transferred through solids, and to a much lesser extent in liquids and gases.	
Convection	The transfer of energy by the movement of gases or liquids.	Family Learning Opportunities
Radiation	The transfer of energy as a wave.	<p>Conduction, convection and radiation IOPSpark STEM</p> <p>Energy Transferred by Conduction IOPSpark</p> <p>Thermal transfers IOPSpark</p> <p>Convective Heating IOPSpark</p>
Insulators	A material that does not conduct electricity or transfer energy well.	
Convection current	The movement of heated liquids or gases.	
Infrared radiation	Radiation given off by the Sun and other objects that brings about energy transfer.	
Thermal imaging camera	A camera that absorbs infrared and produces a (false-colour) image.	
Work	A way of transferring energy that does not involve heating.	
Simple machine	Level or gear that reduces the force required to do something, but increases the distance.	
Lever	A simple machine that multiplies the force.	
Gear	A rotating lever that reduces the force required to do work.	