

## Year 9 Physics Curriculum Map

<b>Overview</b>	Students will learn that the concept of energy is fundamental to our understanding of the way the universe appears to us. The idea was used to explain the work output of steam engines and then generalised to understand other heat engines. It also became a key tool for understanding chemical reactions and biological systems. Limits to the use of fossil fuels and global warming are critical problems for this century. Physicists and engineers are working hard to identify ways to reduce our energy usage.	
<b>Year 9</b>	Summer 1	Summer 2
<b>Topic</b>	P1 Conservation and dissipation of energy	P2 Energy transfer by heating
<b>Knowledge</b>	<p>4.1.1 Energy changes in a system, and the ways energy is stored before and after such changes.</p> <p>5.2 Work done</p>	<p>4.1.2.1 Energy transfers in a system</p> <p>4.6.3.1 Emission and absorption of infrared radiation</p> <p>4.3.2.1 Internal energy</p> <p>4.3.2.2 Temperature changes in a system and specific heat capacity</p>
<b>Skills</b>	<p>Explain processes in terms of energy stores.</p> <p>Do more complex calculations involving gravitational potential energy, kinetic energy, elastic potential energy, work done, power and efficiency, and change the subject of equations.</p> <p>Apply what students know about power and efficiency.</p>	<p>Calculate specific heat capacity and apply knowledge of specific heat capacity to make predictions.</p> <p>Apply what students know about thermal conductivity to buildings and other situations.</p> <p>Analyse data in terms of specific heat capacity.</p> <p>Explain why the temperature of the Earth is increasing.</p>
<b>Assessment</b>	Topic tests.	Formal exam covering P1 Conservation and dissipation of energy and P2 Energy Transfer by heating