



Curriculum Map



Subject: Science PHYSICS

Year group: 10

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Content</p> <p><i>Declarative Knowledge</i> – <i>‘Know What’</i></p>	<p>Phy 1: How energy is transferred and how we measure the rate of transfer. How energy changes are related to temperature changes. Calculating efficiency The different types of energy stores and transfers How to calculate work done and the energy transfers seen when work is done</p>	<p>Phy 2: Work done when stretching a spring The relationship between force, energy and work done Scalar and vector quantities Resultant forces and free body diagrams Turning forces Particle model & density</p>	<p>Phy 3: Internal energy Specific heat capacity Specific latent heat Motion and pressure to include gas pressure</p>	<p>Phy 4: Pressures in fluids at depths Calculating pressure at depths Changing pressure due to height Changes to the atmosphere with height</p>	<p>Phy 5: Define current, resistance and potential difference. Characteristics of series and parallel circuits. Ohm’s Law – components that obey and do not obey it. The safe use of electricity at home.</p>	<p>Phy 6 Life cycle of a star Objects in our sky Circular motion</p>
<p>Skills</p> <p><i>Procedural Knowledge</i> – <i>‘Know How’</i></p>	<p>How we monitor the transfer of energy. Drawing Sankey diagrams. The use of fossil fuels is changing as more renewable energies are being used. How to investigate the specific heat capacity of materials. How to investigate the ways of reducing unwanted energy transfers.</p>	<p>How forces can change an objects’ speed. How to investigate the acceleration of an object. The relationship between force and extension in a spring.</p>	<p>To investigate the density of regular and irregular shaped objects. How the energy of particles in an object changes with temperature How to change</p>	<p>How pressure changes at depth. How buildings are reinforced to accommodate pressure at depth How gas pressure changes with volume and temperature How the atmosphere changes with height</p>	<p>Safe wiring of a plug. To construct electrical circuits. To investigate the I-V characteristics of a filament lamp, diode and resistor. To investigate the factors affecting resistance for; changing length of wire and combinations of resistors.</p>	<p>How a star is made What happens to a star at the end of its life How elements in the periodic table are produced through the development of stars.</p>
<p>Key Questions</p>	<p>How much energy is being transferred? Used? Wasted? How can we prevent energy loss in this situation? What is the impact of using this energy source?</p>	<p>What is the relationship between force and acceleration? What is the relationship between force and elasticity? How do you represent the size and direction of a force? How do levers work</p>	<p>What is happening during this change in state? What is the specific heat capacity of water? What happens to gas pressure when temperature changes? What is internal energy? How is temperature different to thermal energy?</p>	<p>How does the arrangement of particles change at height and at depth? How can changes in pressure in fluids and gases be used to move objects?</p>	<p>What safety systems are in place to prevent harm or damage? How does changing xxx affect yyyy? What are the I-V graphs for a constant temperature resistor? Diode? Lamp?</p>	<p>What are the stages of a star’s life? What forces interact when an object is in circular motion? How do we know that the Universe is getting larger? What are the natural and artificial objects in the night sky?</p>
<p>Assessment</p>	<p>Diagnostic assessment</p>	<p>Summative assessment</p>	<p>Diagnostic assessment</p>	<p>Summative assessment</p>	<p>Diagnostic assessment</p>	<p>PPE’s</p>



Curriculum Map



Literacy / Numeracy / SMSC / Character	Calculating efficiency. Use equations for kinetic energy, gravitational potential energy, power, work done, energy transferred, specific heat capacity. Using significant figures in calculations.	Rearranging equations, drawing resultant forces Calculating resultant forces.	Calculating s.h.c., density. Drawing and interpreting graphs.	How our ideas of atomic structure have developed. Use of ratios and proportional reasoning.	Calculation of speed, velocity, acceleration and distance travelled. Use and analysis of distance-time and velocity time graphs. Making estimates during calculations.	Use and manipulate equations related to potential difference, current, resistance, power, charge, energy transferred. Interpreting graphs.
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