

Curriculum Map

Subject: Physics



Year: 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Content</p> <p>Knowledge</p>	<p>Energy Resources:</p> <ul style="list-style-type: none"> • Energy Demands • Renewable Resources • Non-Renewable Resources • Energy and the Environment 	<p>Energy Transfers:</p> <ul style="list-style-type: none"> • Conduction • Infrared Radiation • Specific Heat Capacity • Heating and Insulating Buildings <p>Required Practical:</p> <ul style="list-style-type: none"> • Investigating Thermal Insulators 	<p>Molecules and Matter:</p> <ul style="list-style-type: none"> • Density • States of Matter • Internal Energy • Specific Latent Heat • Gas Pressure and Temperature <p>Required Practical:</p> <ul style="list-style-type: none"> • Calculating Densities of objects (solids and liquids) 	<p>Conservation and Dissipation of Energy:</p> <ul style="list-style-type: none"> • Changes in Energy Stores • Conservation of Energy • Energy and Work • Energy Dissipation • Energy and Efficiency • Electrical Appliances • Energy and Power 	<p>Introduction to Circuits:</p> <ul style="list-style-type: none"> • Electrical Charges and Fields • Current and Charge • Potential Difference and Resistance • Series and Parallel Circuits • Electrical Component Characteristics <p>Required Practicals:</p> <ul style="list-style-type: none"> • Investigating Resistance of a wire and resistors in series and parallel • Investigating I-V characteristics of electrical components 	<p>Revision</p> <ul style="list-style-type: none"> • To focus on recapping key knowledge and re-address common misconceptions • Embed additional exam practice for each chapter • Focus on key aspects of required practicals

Skills	<ul style="list-style-type: none"> To recall and identify correct scientific knowledge To qualitatively be able to compare and contrast advantages and disadvantages of renewable and non-renewable energy resources 	<ul style="list-style-type: none"> To be able to use and read a thermometer correctly To be able to use a stop watch accurately and effectively To be able to record scientific data accurately To be able to manipulate and use the specific heat capacity equation when appropriate 	<ul style="list-style-type: none"> To be able to use and read digital scales correctly To be able to use a ruler effectively to measure length(s) To be able to record scientific data accurately To be able to manipulate and use the density equation when appropriate 	<ul style="list-style-type: none"> To recall and identify correct scientific knowledge To be able to use and manipulate work done equation To be able to use and manipulate gravitational potential energy equation To be able to use and manipulate kinetic energy and elastic potential energy equations 	<ul style="list-style-type: none"> To be able to use and read voltmeters and ammeters correctly To be able to construct electrical circuits correctly and safely. To be able to record scientific data accurately To be able to manipulate and use electrical equations correctly when appropriate 	<ul style="list-style-type: none"> Recalling important information Exam Technique Spacing Interleaving Elaboration
Key Questions	What are the main renewable and non-renewable energy resources?	Why do houses have loft insulation? How can heat transfer be reduced?	How can a liquid become a solid or gas? Why are objects lighter than others?	Are there different forms of energy and what are they?	What is electricity? What is charge? What is resistance?	
Assessment	Diagnostic test on P3 ReACT tasks P3 End of Chapter Test	Diagnostic test on P2 ReACT tasks P2 End of Chapter Test	Diagnostic test on P6 ReACT tasks P6 End of Chapter Test	Diagnostic test on P1 ReACT tasks P1 End of Chapter Test	Diagnostic test on P4 ReACT tasks P4 End of Chapter Test	End of year test on topics: P3, P2, P6, P1 and P4

<p>Literacy/numeracy/SMSC/Character</p>	<p>Key words: Biofuel, carbon-neutral, reactor core, geothermal energy, renewable, non-renewable, Nuclear fuel</p>	<p>Key words: Thermal conductivity, Infrared Radiation, Specific Heat Capacity</p> <p>Numeracy: Calculating specific heat capacity and order of magnitude</p> <p>Numeracy: Interpreting data and graphs, calculating percentage, drawing graphs</p>	<p>Key words: Density, Physical Changes, Changing State, Melting Point, Boiling Point, Freezing Point, Internal Energy, Specific Latent Heat of Fusion, Specific Latent Heat of Vaporisation</p> <p>Numeracy: Calculating specific latent heat and order of magnitude</p> <p>Numeracy: Interpreting data and graphs, calculating percentage, drawing graphs</p>	<p>Key words: Energy Store, Work done, Spring Constant, Gravitational Potential Energy, Kinetic Energy, Dissipated, Efficiency</p> <p>Numeracy: Calculating percentages</p>	<p>Key words: Proton, Neutron, Ion, Electron, Current, Voltage, Charge, Potential Difference, Resistance</p> <p>Numeracy: Calculating current, voltage, power and resistance and order of magnitude</p> <p>Numeracy: Interpreting data and graphs, calculating percentage, drawing graphs</p>	
<p>Enrichment opportunities and futures</p>	<p>Visiting the Science Museum in Central London Investigate how electrical circuits are used in everyday life (ie. Mobile phones, Christmas lights etc) Visiting local power stations Visiting fusion research center at Oxford University</p>					