

<p>Year 10:</p> <p>Physics</p> <p>Separate</p>	<p>Curriculum Intent: Year 10 Physics tackles more complex ideas and concepts in the subject. It builds on the key knowledge from years 7,8 and 9 to link together all the areas of the subject. The key areas of Forces, Electricity, Energy and the impact of these ideas on the wider world are developed through more challenging topics such as Series and parallel circuits, Newton’s laws, energy and energy transfers and the National Grid. Knowledge of the important mathematical relationships is consolidated further, and application of these equations is developed throughout. Procedural knowledge and practical skills are developed further, building on experience working practically with forces, electricity and energy. The curriculum in year 10 aims to extend and deepen the understanding of Physics at GCSE.</p>						
	<p>Autumn 1</p>	<p>Autumn 2</p>	<p>Spring 1</p>	<p>Spring 2</p>	<p>Summer 1</p>	<p>Summer 2</p>	
<p>Sequence of Learning -</p>	<ol style="list-style-type: none"> 1. Forces and interactions 2. Free body diagrams 3. Newtons Laws 4. Effects of a force 5. Momentum 6. Work and power 7. Hooke’s law 	<ol style="list-style-type: none"> 1. Energy stored in springs and other materials 2. GPE 3. Turning forces 4. Simple machines 5. Gas pressure and temperature 6. Pressure in liquids 	<ol style="list-style-type: none"> 1. Hydraulics 2. Electrostatics 3. Electric current 4. Circuits and pd 4. Comparing circuits 5. Electrical resistance 6. I/V graphs 7. LDR 	<ol style="list-style-type: none"> 1. Thermistor 2. Kirchhoff’s laws 3. Sensing circuits 4. 5. Electrical power 6. The big bang and stars 7. Satellites and orbits <p><i>Revision for Exams</i></p>	<p>End of Year Exams</p> <ol style="list-style-type: none"> 1. Radiation and temperature 2. The structure of the earth 3. Energy stores and transfers 2 4. Analysing scenarios with forces 5. Analysing scenarios with currents 	<ol style="list-style-type: none"> 1. Walls and insulation 2. Efficiency 3. The ear and sound 	
	<ul style="list-style-type: none"> • Free body diagram • Non-contact force • Contact force 	<ul style="list-style-type: none"> • Newton • Force • Drag, tension, upthrust, 	<ul style="list-style-type: none"> • Ammeter • Voltmeter • Charge • Current 	<ul style="list-style-type: none"> • Thermistor • Potential divider • Power supplied • Power dissipated • Big bang theory 	<ul style="list-style-type: none"> • Intensity • Emit • Reflection • Crust • Core 	<ul style="list-style-type: none"> • Thermal conductivity • Cavity wall insulation • Sankey Diagram 	

<p style="text-align: center;">Vocabulary</p>	<ul style="list-style-type: none"> • Momentum • Law of Conservation of momentum • Work done • Hooke's law 	<p style="text-align: center;">reaction, weight</p> <ul style="list-style-type: none"> • Accelerate • Equilibrium • Resultant • Elastic • Plastic 	<ul style="list-style-type: none"> • Potential difference • Resistance • Ohm, Amps. Volts. Watts • LDR • I/V graphs 	<ul style="list-style-type: none"> • Doppler effect • CMBR • Red shift • Hubble's law • Planet • Natural satellite • Artificial satellite • Minor planet • Asteroid • Main sequence star • Nebula • Red giant • Red supergiant • Supernova • Planetary nebula • white dwarf • neutron star • black hole 	<ul style="list-style-type: none"> • Mantle • Seismic wave • Seismometers • P wave • S wave • Refraction 	<ul style="list-style-type: none"> • Efficiency
<p style="text-align: center;">Key questions</p>	<ul style="list-style-type: none"> • How do we apply physics to describe the motion of an object? • How do forces arise and what are their effects? • What properties do materials have when stretched? 	<ul style="list-style-type: none"> • How can we determine energy stored and transferred? • What is a moment? • How do gasses and liquids exert pressure? 	<ul style="list-style-type: none"> • How can forces be transferred by liquids • What is electric charge? • What happens in an electric circuit? • What affects a circuit's properties? 	<ul style="list-style-type: none"> • How can we use sensors in electrical control circuits? • What is the structure of the universe? • What objects make up the solar system? • What are the life cycles of different stars? 	<ul style="list-style-type: none"> • What is the relationship between temperature and colour? • How can wave properties reveal the internal structure of the Earth? • How do forces and currents transfer energy? 	<ul style="list-style-type: none"> • How is heat transfer reduced in buildings? • How can we calculate energy changes and measure efficiency? • What is sound and how does the human ear detect and transduce it?

				<ul style="list-style-type: none"> • How can astronomy help us determine the age and the ongoing evolution of the universe? 		
Practical Skills	<p>Testing Newtons second law Determining work done and power Hooke's law investigation</p>	<p>Testing an elastic band Plastic deformation Moments and balancing a see saw Floating a plasticine boat challenge</p>	<p>Hydraulic syringes series and parallel circuits measuring resistance creating an I/V graph testing an LDR</p>	<p>Testing a thermistor Determining net resistance</p>	<p>Analysing a seismic trace Investigating GPE KE and EPE Work done in accelerating and breaking Determining the Specific heat capacity of water</p>	<p>Heating investigation Insulation Efficiency Refraction The ear and sound</p>