Year 10: Physics Combined	**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. 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 allow students to extend their understanding of the Physics aspect of the Combined Science course.					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Sequence of Learning	1. Electric Current 2. Circuits and potential difference 3. Series and parallel circuits 4. Resistance 5. Circuit resistance 6. I-V graphs	1. LDRS and thermistors 2. Sensing circuits 3. Electrical power 4. Magnetism	1. Fields around a wire 2. Force around a current carrying wire 3. Electric motors	1. Newton's laws 2. Free body diagrams	1. Forces 2. Momentum 3. Stretching a spring	1. Deforming materials 2. Weight and mass 3. Energy stores 4. Work done & Power 5. Work done in braking a car 6. Energy transfers 7. Insulation 8. efficiency
Vocabulary	• Ammeter • Voltmeter • Current • Potential difference • Resistance • Ohm, Amps. Volts. Watts	• LDR • Thermistor • LED • Resistance • Power supplied • Power loss • Magnetic field • Poles • Attraction • Repulsion	• Motor effect • Flemings Left hand rule	• Acceleration • Forces • Newton • Force • Uniform • 1st Law • 2nd Law • 3rd Law	• Drag, tension, upthrust, reaction, weight • Momentum • Elastic • Deformation • Plastic • Hooke's law • Elastic limit • Directly proportional	• Gravity • Electrostatic • Magnetic • Thermal store of the surroundings • Nuclear • Work done • Thinking distance • Braking distance • Stopping distance • Mechanical

Key Questions	• What happens in an electric circuit? • What affects a circuit's properties?	• How are circuits used in our homes? • How can we demonstrate and explain magnetism?	• How can we explain the behaviour of a current carrying wire in a magnetic field?	• 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?	• How can we describe deformation? • What is the difference between mass and weight? • How can we calculate energy changes, transfers and measure the efficiency? • How do we reduce energy loss?
Practical Skills	Building circuits, measuring current and potential difference	Investigating thermistors and LDRs	Plotting fields	Checking F=ma	Hooke's law experiment	Measuring KE and GPE changes Measuring energy changes by electric current