




Year 12: Physics	Curriculum Intent: Students follow the two-year OCR A-Level (A) Physics specification building on their existing knowledge from GCSE. In the early stages of the course, students are given a grounding in some of the basic skills they will need for the course such as the treatment of experimental data. Pupils will then study Module 3 and 4 of the OCR specification up to their PPEs. Some topics from Module 5 are also introduced towards the end of the year. Learning is supported by practical work and students will complete approximately 10 practical assessments (PAGs) during the year which count towards their final qualification. Students are taught by 2 teachers					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key ideas	Module 1 and 2 <ul style="list-style-type: none"> Homogenous equations Uncertainties Module 3 <ul style="list-style-type: none"> Motion in one and two dimensions Module 4 <ul style="list-style-type: none"> Charges, current and resistance 	Module 3 <ul style="list-style-type: none"> Forces and motion Force in action Module 4 <ul style="list-style-type: none"> Energy and power in circuits Electrical circuits 	Module 3 <ul style="list-style-type: none"> Work, energy and power Materials Module 4 <ul style="list-style-type: none"> Wave properties Wave refraction Wave interference 	Module 3 <ul style="list-style-type: none"> Newton's laws of motion and momentum Module 4 <ul style="list-style-type: none"> Stationary waves Diffraction gratings 	Revision for PPE exams and PPE Exams	Module 4 <ul style="list-style-type: none"> Quantum physics Module 5 <ul style="list-style-type: none"> Thermal physics Research Project
Sequence of Learning (taught by 2 teachers)	Module 1 and 2 <ul style="list-style-type: none"> Experimental uncertainty SI base units and homogeneity of units Module 3 <ul style="list-style-type: none"> Vectors and scalars Motion graphs SUVAT equations Stopping distances Freefall Projectile motion Module 4 <ul style="list-style-type: none"> Charge and current Emfs and pds Resistance IV characteristics LDR & thermistors 	Module 3 <ul style="list-style-type: none"> Newton's laws Terminal velocity Equilibrium Moments Density Pressure and buoyancy Module 4 <ul style="list-style-type: none"> Electrical power Cost of electricity Kirchhoff's laws Resistance in series & parallel Analysing circuits 	Module 3 <ul style="list-style-type: none"> Conservation of energy Power & efficiency Work done Materials Hooke's law Young's Modulus Deforming materials Module 4 <ul style="list-style-type: none"> wave basics wave phase wave speed and intensity EM waves Polarisation Refraction 	Module 3 <ul style="list-style-type: none"> Newton's Laws Momentum Impulse Collisions Module 4 <ul style="list-style-type: none"> Stationary waves in strings and pipes Diffraction grating 	PPE exams	Module 4 <ul style="list-style-type: none"> Photon energy Photoelectric effect Wave particle duality Module 5 <ul style="list-style-type: none"> Temperature Heat capacities Kinetic theory of gases Gas laws and the ideal gas equation Boltzmann constant

	<ul style="list-style-type: none"> Resistivity 	<ul style="list-style-type: none"> Internal resistance potential divider circuits sensing circuits 	<ul style="list-style-type: none"> Total internal reflection Interference Young's Double Slit experiment 			
Vocabulary	The list of key words is too numerous for inclusion here. The recommended course textbook provides a complete Glossary of key words					
Practical Skills (relevant PAGs)	PAG 1.3 – braking distances	PAG 3.1 – resistivity of a metal PAG 3.3 – power from a cell PAG 4.1 – resistor combinations	PAG 2.1 – Young Modulus PAG 5.3 – oscilloscopes	PAG 5.1 – diffraction grating		PAG 6.1- Planck's constant PAG 8.2 Boyles law PAG 12.2 research report