

Intent:

Intent:

This AQA course is ideal for those enjoying the study of the very large, the very small, weird and the wonderful. From Quarks to time dilation, the course offers a range of topics to be studied in theory, by practical investigation, and by questioning the world around us.

We follow the AQA A-level Physics specification, which follows on from GCSE science. Students build on knowledge gained in GCSE and build upon this using latest research and experimental techniques to gain a great understanding of physics principles.

Students complete compulsory investigations across the two year course (6 in Y12 and 6 in Y13), adding to a lab workbook as they progress. The skills learned from the practical element of the course set the students up very well for a University laboratory for any future aspirations they may have in that field.

Students are supported and encouraged to develop their revision and independent learning skills to enable them to critically analyse data and conclusions. We support students to use their learned knowledge from the course and apply this to many different examples in many different settings.

Students are given regular formative assessments to monitor progress with skills and topics and allow for early intervention where necessary.

As well as learning the content in each topic at A-level, the intention is to learn how to draw together different areas of knowledge and understanding within answers to questions. This breadth of knowledge is assessed across all three of the linear examinations at the end of the course.

Year 12	Half-Term 1		Half-Term 2	Half-Term 3	Half-Term 4	Half-Term 5
Topic(s)	<ul style="list-style-type: none"> Measurements and their errors Particles Electricity 		<ul style="list-style-type: none"> Electricity Radiation Waves -interference and diffraction 	<ul style="list-style-type: none"> Waves: -refraction and TIR Mechanics: -Energy, force and momentum 	<ul style="list-style-type: none"> Mechanics: - energy, force and momentum 	<ul style="list-style-type: none"> Materials
Links to Prior Learning	Investigation skills Atomic structure Electrical circuits		Electromagnetic spectrum Wave properties	Energy Forces and momentum	Forces and momentum	Density
Key Practical Activities	Taking measurements and calculating errors IV characteristics Resistivity		EMF and internal resistance Youngs' double slit Diffraction grating	Refractive index and critical angle Coplanar forces producing equilibrium Acceleration due to gravity Terminal velocity	Newtons second law Efficiency of a motor	Density of unusual shaped objects Determine spring constant The Young modulus
Assessment	<ul style="list-style-type: none"> Formative assessments will regularly take place by staff within lessons, as well as checks carried out based on past exam questions. Synoptic, summative assessments to take place at four points throughout the year (IAPs). Mock examinations to take place in January and July. 					
Year 13	Half-Term 1	Half-Term 2	Half-Term 3	Half-Term 4	Half-Term 5	Half-Term 6
Topic(s)	<ul style="list-style-type: none"> Further mechanics <ul style="list-style-type: none"> Circular motion Simple Harmonic Motion Forced vibrations and resonance 	<ul style="list-style-type: none"> Gravitational Fields Electric Fields Capacitance Thermal 	<ul style="list-style-type: none"> Thermal Magnetic fields 	<ul style="list-style-type: none"> Nuclear Turning Points 	<ul style="list-style-type: none"> Turning Points 	<ul style="list-style-type: none"> Revision
Links to Prior Learning	Y12 Newtons' laws GCSE circular motion (Triple)	Y12 Forces and energy GCSE gases and energy	Y13 Electric and magnetic fields as well as GCSE magnetic fields	Y12 particles Y12 Radiation Y12 Waves	Y12 particles Y12 Radiation Y12 Waves	

			Y12 Newtons' laws GCSE electricity generation and motors	Y13 electric and magnetic fields KS3 microscopes	Y13 electric and magnetic fields KS3 microscopes	
Key Practical Activities	Centripetal force Investigation into simple harmonic motion using a mass–spring system and a simple pendulum	Investigation of the charge and discharge of capacitors. Investigation of Boyle's law (constant temperature) and Charles's law (constant pressure) for a gas.	Investigate how the force on a wire varies with flux density, current and length of wire using a top pan balance.	Investigation of the inverse-square law for gamma radiation.		
Assessment	<ul style="list-style-type: none"> Formative assessments will regularly take place by staff within lessons, as well as checks carried out based on past exam questions. Synoptic, summative assessments to take place at three points throughout the year (IAPs). Mock examinations to take place in July (end of Y12), December and March 					