



Curriculum Map Year 12

Physics

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Section 5 Mathematical skills Section 3 Mechanics and materials Forces in equilibrium Section 3 Mechanics and materials On the move Section 3 Mechanics and materials Work, energy and power	Section 2 Waves and optics Waves Optics	Section 1 Particles and radiation Quantum phenomena Section 1 Particles and radiation	Section 3 Mechanics and materials Materials Quantum phenomena Newton's laws of motion	Revision	Revision and Trial Exams  A2 Section 6 Further mechanics and thermal physics Motion in a circle
Core Skills	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>	<ul style="list-style-type: none"> <li>Enquiry</li> <li>Communication (literacy)</li> <li>Develop extended writing</li> <li>Critical thinking</li> <li>Analysis</li> <li>Critical evaluation</li> <li>Make judgements</li> <li>Make arguments</li> <li>Draw informed decisions</li> <li>Synthesis of information</li> <li>Inference</li> <li>Numeracy</li> </ul>
Core Knowledge	Section 5 Mathematical skills <ul style="list-style-type: none"> <li>Measurement and errors</li> <li>Standard form</li> <li>Prefixes and Greek letters uncertainty</li> </ul> Section 3 Mechanics and materials <ul style="list-style-type: none"> <li>Forces in equilibrium</li> <li>Vectors and scalars</li> <li>Balanced forces</li> <li>The principle of moments</li> <li>More on moments</li> <li>Stability</li> <li>Equilibrium rules</li> <li>Static calculations</li> </ul> HT3 Section 3 Mechanics and materials <ul style="list-style-type: none"> <li>On the move</li> <li>Speed and velocity</li> <li>Acceleration</li> <li>Motion along a straight line at constant acceleration</li> <li>Free fall</li> <li>Motion graphs</li> <li>More calculations on motion along a straight line</li> <li>Projectile motion 1</li> <li>Projectile motion 2</li> </ul> Section 3 Mechanics and materials <ul style="list-style-type: none"> <li>Work, energy and power</li> <li>Work and energy</li> <li>Kinetic energy and potential energy</li> <li>Power</li> <li>Energy and efficiency</li> </ul>	Section 2 Waves and optics <ul style="list-style-type: none"> <li>Waves</li> <li>Waves and Vibrations</li> <li>Measuring waves</li> <li>Wave properties 1</li> <li>Wave properties 2</li> <li>Stationary and progressive waves</li> <li>More about stationary waves on strings</li> <li>Using an oscilloscope</li> </ul> Optics <ul style="list-style-type: none"> <li>Refraction of light</li> <li>More about refraction</li> <li>Total internal reflection</li> <li>Double slit interference</li> <li>More about interference</li> <li>Diffraction</li> <li>The diffraction grating</li> </ul>	Section 1 Particles and radiation <ul style="list-style-type: none"> <li>Quantum phenomena</li> <li>The photoelectric effect</li> <li>More about photoelectricity</li> <li>Collisions of electrons with atoms</li> <li>Energy levels in atoms</li> <li>Energy levels and spectra</li> <li>Wave – particle duality</li> </ul> Section 1 Particles and radiation <ul style="list-style-type: none"> <li>Matter and radiation</li> <li>Inside the atom</li> <li>Stable and unstable nuclei</li> <li>Photons</li> <li>Particles and antiparticles</li> <li>Particle interactions</li> <li>Quarks and leptons</li> <li>The particle zoo</li> <li>Particle sorting</li> <li>Leptons at work</li> <li>Quarks and antiquarks</li> <li>Conservation rules</li> </ul>	Section 3 Mechanics and materials <ul style="list-style-type: none"> <li>Materials</li> <li>The photoelectric effect</li> <li>Springs</li> <li>Deformation of solids</li> <li>More about stress and strain</li> </ul> Section 3 Mechanics and materials <ul style="list-style-type: none"> <li>Newton's laws of motion</li> <li>Force and acceleration</li> <li>Using <math>F=ma</math></li> <li>Terminal speed</li> <li>On the road</li> <li>Vehicle safety</li> <li>Force and momentum</li> <li>Moment and impulse</li> <li>Impact forces</li> <li>Conservation of momentum</li> <li>Elastic and inelastic collisions</li> <li>Explosions</li> </ul>		All <ul style="list-style-type: none"> <li>Section 6 Further mechanics and thermal physics</li> <li>Motion in a circle</li> <li>Uniform circular motion</li> <li>Centripetal acceleration</li> <li>On the road</li> <li>At the fair ground</li> </ul>
Assesment & Feedback	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.	Formative HW tasks. tasks. End of topic test. Once per two weeks Peer Assessment (PA) and Self Assessment (SA) using green pen. Next steps to be acted upon and monitored.
Link to prior learning	KS 4 National Curriculum - Forces, speed, velocity and acceleration, work, kinetic energy, power.	KS 4 National Curriculum - waves	KS 4 National Curriculum - radiation	KS 4 National Curriculum - springs, forces and acceleration	Y12 knowledge	KS 4 National Curriculum