

# Curriculum Map

Subject: Physics

Year: 12



	Autumn	Autumn	Spring	Spring	Summer	Autumn
<p><b>Content</b></p> <p><b>Knowledge</b></p>	<p><b>Particle Physics:</b></p> <ul style="list-style-type: none"> <li>Stable and unstable nuclei</li> <li>Particle and antiparticles</li> <li>Particle Zoo (quarks and leptons)</li> <li>Particle Interactions</li> <li>Energy levels and wave-particle duality</li> </ul>	<p><b>Mechanics and Materials:</b></p> <ul style="list-style-type: none"> <li>Principle of moments</li> <li>Equilibrium rules</li> <li>Projectile Motion</li> <li>Momentum and Impulse</li> <li>Elastic and Inelastic Collisions</li> <li>Stress and Strain</li> <li>Young's Modulus</li> </ul> <p><b>Required Practical:</b></p> <ul style="list-style-type: none"> <li>Investigating the Young's Modulus of different wires</li> </ul>	<p><b>Waves and Optics:</b></p> <ul style="list-style-type: none"> <li>Standing Waves</li> <li>Using an oscilloscope</li> <li>Double Slit Interference</li> <li>Diffraction and diffraction grating</li> </ul> <p><b>Required Practicals:</b></p> <ul style="list-style-type: none"> <li>Investigating fundamental frequencies of a standing wave</li> <li>Investigating the fringe spacing of a diffraction grating</li> </ul>	<p><b>Electricity (1):</b></p> <ul style="list-style-type: none"> <li>Current and Charge</li> <li>Potential Difference and Power</li> <li>Components and their characteristics</li> <li>Resistance and Resistivity</li> </ul> <p><b>Required Practical:</b></p> <ul style="list-style-type: none"> <li>Investigating the resistivity of a wire</li> </ul>	<p><b>Electricity (2):</b></p> <ul style="list-style-type: none"> <li>Kirchoff's Current Rules</li> <li>Potential Dividers</li> <li>Electromotive force and Internal resistance</li> </ul> <p><b>Required Practical:</b></p> <ul style="list-style-type: none"> <li>Investigating the electromotive force (emf) of a cell</li> </ul>	<p><b>Further Mechanics:</b></p> <ul style="list-style-type: none"> <li>Uniform Circular Motion</li> <li>Centripetal Acceleration</li> <li>Simple Harmonic Motion</li> <li>Forced Vibrations and resonance</li> </ul>

<b>Skills</b>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>Problem Solving.</li> <li>Team working.</li> </ul>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>To be able to use experimental apparatus safely and correctly</li> <li>Manipulating mathematical equations correctly</li> <li>Recording data accurately and analysing and manipulating it appropriately to form correct logical scientific conclusions</li> </ul>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>To be able to use experimental apparatus safely and correctly</li> <li>Manipulating mathematical equations correctly</li> <li>Recording data accurately and analysing and manipulating it appropriately to form correct logical scientific conclusions</li> </ul>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>To be able to use experimental apparatus safely and correctly</li> <li>Manipulating mathematical equations correctly</li> <li>Recording data accurately and analysing and manipulating it appropriately to form correct logical scientific conclusions</li> </ul>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>To be able to use experimental apparatus safely and correctly</li> <li>Manipulating mathematical equations correctly</li> <li>Recording data accurately and analysing and manipulating it appropriately to form correct logical scientific conclusions</li> </ul>	<ul style="list-style-type: none"> <li>To recall and identify correct scientific knowledge</li> <li>Manipulating mathematical equations correctly</li> <li>Problem Solving.</li> <li>Team working.</li> </ul>
<b>Key Questions</b>	<p>Is there something smaller than a proton and a neutron?</p> <p>What happens during nuclear decay?</p>	<p>Can you predict the trajectory a rocket will take?</p>	<p>Can waves remain stationary?</p> <p>How does a laser read the information on a CD?</p>	<p>How does current behave around a circuit?</p>	<p>Why is the voltage output of a battery not exactly what it says it is meant to be outputting?</p>	<p>How can vibrations cause resonance and cause damage to structures?</p>
<b>Assessment</b>	<p>Introduction assessment</p> <p>End of Topic Assessments</p>	<p>End of Topic Assessments</p> <p>CPAC's for practicals</p>	<p>End of Topic Assessments</p> <p>CPAC's for practicals</p>	<p>End of Topic Assessments</p> <p>CPAC's for practicals</p>	<p>End of Topic Assessments</p> <p>CPAC's for practicals</p>	<p>Year 12 Mock</p>

Literacy/numeracy/SMSC/Character	Literacy - Lots of new terms that students have to recall.	Numeracy – Correct manipulation of respective formulas and orders of magnitude  Literacy - Some new terms that students have to recall.		Numeracy – Correct manipulation of respective formulas and orders of magnitude  Literacy - Some new terms that students have to recall.	Numeracy – Correct manipulation of respective formulas and orders of magnitude  Literacy - Some new terms that students have to recall.	
Enrichment opportunities and futures	Visiting the Science Museum in Central London Attending UCL lectures					