

Curriculum Mapping

A Level Physics – KS5 Y12

Students follow AQA A - Level Physics (7408)

<http://filestore.aqa.org.uk/resources/physics/specifications/AQA-7407-7408-SP-2015.PDF>

HT1	<p><u>Section 5 Mathematical skills</u></p> <ul style="list-style-type: none">• Measurement and errors• Standard form• Prefixes and Greek letters uncertainty <p><u>Section 1 Particles and radiation</u></p> <p><i>Matter and radiation</i></p> <ul style="list-style-type: none">• Inside the atom• Stable and unstable nuclei• Photons• Particles and antiparticles• Particle interactions <p><i>Quarks and leptons</i></p> <ul style="list-style-type: none">• The particle zoo• Particle sorting• Leptons at work• Quarks and antiquarks• Conservation rules <p><u>Section 2 Waves and optics</u></p> <p><i>Waves</i></p> <ul style="list-style-type: none">• Waves and Vibrations• Measuring waves• Wave properties 1• Wave properties 2• Stationary and progressive waves• More about stationary waves on strings• Using an oscilloscope <p><i>Optics</i></p> <ul style="list-style-type: none">• Refraction of light• More about refraction• Total internal reflection• Double slit interference• More about interference• Diffraction• The diffraction grating
HT2	<p><u>Section 1 Particles and radiation</u></p> <p><i>Quantum phenomena</i></p> <ul style="list-style-type: none">• The photoelectric effect• More about photoelectricity• Collisions of electrons with atoms• Energy levels in atoms• Energy levels and spectra

	<ul style="list-style-type: none"> • Wave – particle duality <p><u>Section 4 Electricity</u></p> <p><i>Electric current</i></p> <ul style="list-style-type: none"> • Current and charge • Potential difference and power • Resistance • Components and their characteristics <p><i>DC circuits</i></p> <ul style="list-style-type: none"> • Circuit rules • More about resistance • Electromotive force and internal resistance • More about circuit calculations • The potential divider <p><u>Section 3 Mechanics and materials</u></p> <p><i>Forces in equilibrium</i></p> <ul style="list-style-type: none"> • Vectors and scalars • Balanced forces • The principle of moments • More on moments • Stability • Equilibrium rules • Static calculations
HT3	<p><u>Section 3 Mechanics and materials</u></p> <p><i>On the move</i></p> <ul style="list-style-type: none"> • Speed and velocity • Acceleration • Motion along a straight line at constant acceleration • Free fall • Motion graphs • More calculations on motion along a straight line • Projectile motion 1 • Projectile motion 2 <p><i>Materials</i></p> <ul style="list-style-type: none"> • Density • Springs • Deformation of solids • More about stress and strain
HT4	<p><u>Section 3 Mechanics and materials</u></p> <p><i>Newton's laws of motion</i></p> <ul style="list-style-type: none"> • Force and acceleration • Using $F=ma$ • Terminal speed • On the road • Vehicle safety <p><i>Force and momentum</i></p> <ul style="list-style-type: none"> • Moment and impulse • Impact forces • Conservation of momentum

	<ul style="list-style-type: none"> • Elastic and inelastic collisions • Explosions <p>Revision for PPE</p>
HT5	<p><u>Section 3 Mechanics and materials</u></p> <p><i>Work, energy and power</i></p> <ul style="list-style-type: none"> • Work and energy • Kinetic energy and potential energy • Power • Energy and efficiency <p>Revision for PPE</p>
HT6	<p>Primary Project</p> <p><u>Section 6 Further mechanics and thermal physics</u></p> <p><i>Motion in a circle</i></p> <ul style="list-style-type: none"> • Uniform circular motion • Centripetal acceleration • On the road • At the fair ground <p><i>Simple Harmonic motion</i></p> <ul style="list-style-type: none"> • Oscillations • The principles of simple harmonic motion • More about sine waves • Applications of simple harmonic motion • Forced vibrations and resonance <p><u>Section 7 Fields</u></p> <p><i>Gravitational fields</i></p> <ul style="list-style-type: none"> • Gravitational field strength • Gravitational potential • Newton's law of gravitation • Planetary fields • Satellite motion