

Physics Trilogy Science

Year 10

All students are taught in mixed ability teaching groups recording their work on their iPads using their lab books for note taking in practical work.

Term 1 content and skills	Term 2 Content and skills	Term 3 Content and Skills	Extended Curriculum (trips/visits/afterschool activities)
<p>Modules taught on rotation in year 10 due to availability of resources</p> <p>Module 1: Energy 1 (Links to KS3 T10 and T23)</p> <ul style="list-style-type: none"> • Changes in energy stores and conservation of energy • Energy and work • Gravitational potential energy • Kinetic energy • Elastic potential energy • Power and Efficiency <p>Module 1: Energy 2 (Links to KS3 T10 and T23)</p> <ul style="list-style-type: none"> • Energy transfer • Specific heat capacity <p>Required practical- Specific heat capacity</p> <ul style="list-style-type: none"> • National and global energy resources. <p>Module 2 Electric Circuits (Links to KS3 T27 and T30)</p> <ul style="list-style-type: none"> • Electrical charges and fields • Current and charge • P.D and resistance • Required Practical <p>How does resistance of a wire depend on its length?</p> <ul style="list-style-type: none"> • Ohms law <p>Required Practical</p> <p>Use circuit diagrams to construct appropriate circuits to investigate the I–V characteristics of a variety of circuit elements including a filament lamp, a diode and a resistor at constant temperature.</p> <ul style="list-style-type: none"> • LDRs and thermal resistors 			<ul style="list-style-type: none"> • IOP Careers • Isaac Physics • Medtech challenge – links to engineering, design + tech, business skills. Provide industry mentor. • Stem Club • Launchpad- working with Form the Futures and local industry

<ul style="list-style-type: none"> • Series and parallel circuits • National grid and plugs • Electric power • Generators <p>Module 3: Particle Model of Matter (Links to KS3 T3 and T26)</p> <ul style="list-style-type: none"> • Density of materials <p>Required practical Use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids.</p> <ul style="list-style-type: none"> • Changes of state and specific latent heat, • Particle model and pressure <p>Module 4 Atomic Structure and radioactivity (Links to KS3 T3 and T12)</p> <ul style="list-style-type: none"> • Atoms and isotopes (Links the Chemistry GCSE module 1) • History of the atom (same content as chemistry) • Nuclear decay and nuclear equations • Half life • Uses and risks of radiation • Radioactive contamination 			
<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. End of term written test</p>	<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. End of term written test</p>	<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. End of term written test</p>	

Physics Trilogy Science

Year 11

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Term 1 content and skills	Term 2 Content and skills	Term 3 Content and Skills	Extended Curriculum (trips/visits/afterschool activities)
<p>All topics taught on rotation due to availability of resources</p> <p>Module 5 5 Forces Part 1 (links to T19 to maths curriculum)</p> <ul style="list-style-type: none"> • Scalar and vector quantities • Acceleration • Distance and time graphs • Velocity and time graphs • Contact and non-contact forces • Resolving forces- Newtons 1st law • Newtons 2nd Law <p>Required Practical Investigate the effect of varying the force on the acceleration of an object of constant mass and the effect of varying the mass of an object on the acceleration produced by a constant force</p> <ul style="list-style-type: none"> • Stopping (breaking) distances • Weight and Gravity • Resultant forces • Terminal velocity <p>Module 5 Forces part 2 (Links to T19)</p> <ul style="list-style-type: none"> • Momentum (H) • Conservation of momentum (H) • Newtons 3rd Law <p>Topic 6 Waves part 1 (Links to T13)</p> <ul style="list-style-type: none"> • Properties of a wave • Wave calculations 			<ul style="list-style-type: none"> • IOP Careers • Isaac Physics <p>Stem Club</p>

<p>Required Practical Make observations to identify the suitability of apparatus to measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid and take appropriate measurements.</p> <p>Module 6 Waves part 2 (Links to T16)</p> <ul style="list-style-type: none"> • EM spectrum • Emission and absorption of infrared radiation <p>Required Practical Investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface</p> <p>Topic 6 Magnetism and Electromagnetism (Links to T30)</p> <ul style="list-style-type: none"> • Magnets and poles • The motor effect • Fleming's left-hand rule (H) • Electric Motors (H) 			
<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. Interim exam on paper 1 content</p>	<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. Mock exam on Paper 2 content</p>	<p>Assessment: Low stakes Microsoft Forms quizzes throughout all topics. GCSE exams</p>	