

Physics (Science)



KS4 Curriculum Breakdown



<i>Year 10</i>		<i>Year 11</i>
HT1	Energy <ul style="list-style-type: none">• Changes in energy stores• Conservation of energy• Energy and work• GPE• Kinetic and elastic energy stores• Energy dissipation• Energy and efficiency• Electrical appliances• Energy and power• Conduction• Infrared radiation• Specific heat capacity• Heating and insulating buildings• Energy demands• Energy from wind, water, Sun and the Earth• Energy and the environment	Forces <ul style="list-style-type: none">• Vectors and scalars• Forces between objects• Resultant forces• Moments at work• Levers and gears• Centre of mass• Moments and equilibrium• Parallelogram of forces• Resolution of forces• Speed and distance-time graphs• Velocity & acceleration and velocity-time graphs• Force and acceleration• Weight and terminal velocity• Forces and braking• Momentum• Using conservation of momentum

		<ul style="list-style-type: none"> • Impact forces • Safety first • Forces and elasticity • Pressure and surfaces • Pressure in liquids • Atmospheric pressure • Upthrust and flotation
HT2	Electricity Electrical charges and fields <ul style="list-style-type: none"> • Current and charge • Potential difference and resistance • Series and parallel circuits • Alternating current • Cables and plugs • Electrical power and potential difference • Electrical currents and energy transfer • Appliances and efficiency 	Forces (continued) <ul style="list-style-type: none"> • Vectors and scalars • Forces between objects • Resultant forces • Moments at work • Levers and gears • Centre of mass • Moments and equilibrium • Parallelogram of forces • Resolution of forces • Speed and distance-time graphs • Velocity & acceleration and velocity-time graphs • Force and acceleration • Weight and terminal velocity • Forces and braking • Momentum • Using conservation of momentum • Impact forces • Safety first • Forces and elasticity • Pressure and surfaces • Pressure in liquids • Atmospheric pressure • Upthrust and flotation
HT3	Particle Model <ul style="list-style-type: none"> • Density • States of matter • Changes of state 	Waves <ul style="list-style-type: none"> • Nature and properties of waves • Reflection and refraction • Sound waves

	<ul style="list-style-type: none"> • Internal energy • Specific latent heat • Gas pressure and temperature • Gas pressure and volume 	<ul style="list-style-type: none"> • Uses of ultrasound • Seismic waves • Electromagnetic spectrum • Light, IR, microwaves and radio waves • Communications • UV, X-rays and gamma rays • X-rays in medicine • Reflection and refraction of light • Light & colour • Lenses and uses of
HT4	Atomic Structure <ul style="list-style-type: none"> • Atoms and radiation • Discovery of the nucleus • Changes in the nucleus (alpha, beta and gamma) • Activity and half-life • Nuclear radiation in medicine • Nuclear fission • Nuclear fusion • Nuclear issues 	Magnetism & Electromagnetism <ul style="list-style-type: none"> • Magnetic fields • Magnetic fields of electric currents • Electromagnets in devices • The motor effect • The generator effect • The alternating current generator • Transformers and uses of
HT5	Atomic Structure (continued) <ul style="list-style-type: none"> • Atoms and radiation • Discovery of the nucleus • Changes in the nucleus (alpha, beta and gamma) • Activity and half-life • Nuclear radiation in medicine • Nuclear fission • Nuclear fusion • Nuclear issues 	Space <ul style="list-style-type: none"> • Formation of the Solar System • Life history of a star • Planets, satellites and orbits • Expanding Universe • The beginning and future of the Universe
HT6	Key skill development Application and exam technique	Key skill development Application and exam technique