Physics Curriculum Learning Journey

Knowledge & Concepts increase students depth/ challenge and build on previous learning where topics are revisted throughout their learning journey

Due to facility and resource considerations, not all classes study the same topics at the same time. The table below depicts the content covered within each year group and also how the curriculum progresses where topics are revisited.

		Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
Half Term 1	Topics	**Waves – Sound**	**Electricity and Magnetism**	**Forces and motion**	**Electromagnetism**	**Wave Properties**	**Waves**	**Astrophysics**
	Knowledge	Labelling a wave Amplitude, Wavelength, Frequency	Circuits (voltage, current, resistance), magnets, electromagnets	Force, contact, non-contact, Newton, mass, kilogram, weight, centre of mass	Magnetic fields, solenoid, motor effect, electromagnet	Labelling a wave, reflection and refraction, seismic waves, sound and ultrasound	Reflection, Refraction, Diffraction, superimposition, harmonics	Cosmology, classification of stars, lenses
Half Term 2	Topics	**Waves – Sound**	**Electricity and Magnetism**	**Energy**	**Radioactivity**	**Electromagnetic Waves**	**Mechanics**	**Nuclear Phyiscs**
	Knowledge	labelling a wave Amplitude, Wavelength, Frequency	Circuits (voltage, current, resistance), magnets, electromagnets	Conservation of Energy, Energy, and work, GPE, KE, Efficiency, power	Atoms and Radiation, Discovery of Nucleus, half-life (fusion/fission)	Spectrum – each part of the spectrum, waves in medicine	Vectors, Scalars, Moments, Momentum, Resolving, SUVAT, F=ma, materials	Fission, fusion, discovery, half-life, types of radiation, inverse law of gamma, size of nucleus
Half Term 3	Topics	**Waves – Light**	**Energy**	**Energy Resources**	**Forces**	**Light (T)**	**Particles and Radiation**	**Further Mechanics**
	Knowledge	Reflection, refraction, colour	Temperature, energy transfer, conduction and convection	Renewable resources, non-renewable, issues	Vectors and Scalars, resultant forces, moments, centre of mass	Lenses, reflection/refraction (more detail)	Matter and radiation, quarks and leptons, phenomena	Motion in a circle, Simple harmonic motion

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Half Term 4	Topics	**Waves – Light**	**Energy**	**Waves, sound, and light**	**Motion**	**Space**	**Work energy and power**	**Thermal Physics**
	Knowledge	Reflection, refraction, colour	Temperature, energy transfer, conduction and convection	rarefaction, refraction, wavelength, Longitudinal wave, transverse wave, oscillate, oscilloscope	Motion graphs, analysing graphs, drawing graphs	Solar system, history of star, planet/satellites, universe	Work done, KE, GPE, Power and efficiency	Specific Heat, energy and temperature, ideal gas law
Half Term 5	Topics	**Space**	**Motion and Pressure**	**Electromagnetic Waves**	**Forces and Motion**		**Electricity**	**Fields**
	Knowledge	Solar System, Earth, Moon, Night sky	Speed equation, motion graphs, pressure in gasses/liquids	Spectrum – each part of the spectrum, waves in medicine	F=ma, weight and terminal velocity, momentum		Current, charge, components, resistance, circuit rules, EMF, internal	Gravitational Fields, Electric Fields, Capacitance
Half Term 6	Topics	**Space**	**Motion and Pressure**	**Electricity and Magnetism**	**Pressure (T)**			**Magnetic fields and electromagnetic induction**
	Knowledge	Solar System, Earth, Moon, Night sky	Speed equation, motion graphs, pressure in gasses/liquids	Circuits (voltage, current, resistance), magnets, electromagnets, alternating current, National grid	Pressure, atmospheric pressure, upthrust			Laws of electromagnetism, AC and power, transformers, charges in fields