GCSE Physics Curriculum Map 2025-26

KNUTSFORD ACADEMY

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit name:	**Energy Resources**	**Domestic Electricity**	**Domestic Electricity continued**	**Particle model of matter**	**Radioactivity**	**Quantitative Energy**
Yr 10	• renewable and non-renewable energy resources, changes in how these are used • advantages and disadvantages of different energy resources, including environmental issues • Disciplinary knowledge headlines: • appreciating the power and limitations of science and considering ethical issues which may arise	• comparing AC and DC; the National Grid; 3-core cable. • power as the rate of energy transfer • the link between power, current and potential difference • the link between power, current and resistance • measuring resistance using potential difference and current measurements	• measuring resistance using potential difference and current measurements • exploring current, resistance and pd relationships for different circuit elements; including their graphical representations • sensing circuits (thermistor and LDR) • electrostatic force as a non-contact force (triple science only) • electric field line patterns (triple science only)	• relating models of arrangements and motion of the particles in solid, liquid and gas phases to their densities • melting, evaporation, and sublimation as reversible changes • calculating energy changes involved in heating, using specific heat capacity; and those involved in changes of state, using specific latent heat • the link between pressure and temperature of a gas at constant volume • pressure in fluids (triple science only)	• differences in numbers of protons, and neutrons related to masses and identities of nuclei • isotopes • unstable nuclei and radioactive decay • nuclide notation and nuclear equations • half-life, including activity/count-rate/number of unstable nuclei decay curves • irradiation and contamination • nuclear fission and nuclear fusion processes (triple science only)	• energy changes in a system: calculating the stored energies and energy changes involved • work done, force, and distance moved • between kinetic energy, mass, and speed • between gravitational potential energy, mass, gravitational field strength and change in height • between elastic potential energy, spring constant and extension • conservation of energy in a closed system, dissipation

Academic Excellence

We provide a supportive and challenging environment to ensure our students achieve academic excellence.

Ambition

We have the highest expectations for academic excellence and personal development and work hard to achieve them.

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Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Unit name:	**Energy calculations and elasticity**	**Forces**	**Electromagnetic waves (CS) Space physics (TS)**	**Magnetism and electromagnetism**	**Revision**
Yr 11	• energy changes in a system: calculating the stored energies and energy changes involved • the link between work done, force, and distance moved • the link between kinetic energy, mass, and speed • the link between gravitational potential energy, mass, gravitational field strength and change in height • elastic and inelastic stretching • the link between elastic potential energy, spring constant and extension • conservation of energy in a closed system, dissipation	• the turning effect of a force as the moment of the force about a pivot (triple science only) • acceleration as the rate of change of velocity • interpreting velocity-time graphs • the link between resultant force, mass, and acceleration • stopping distance and factors that affect thinking distance and braking distance • momentum • conservation of momentum in collisions and explosions (triple science only) • resultant force as the rate of change of momentum (triple science only)	Electromagnetic Waves: • properties and uses in the radio, microwave, infrared, visible, ultraviolet, X-ray and gamma ray regions • velocity in a vacuum and velocities differing between media • hazardous effects on body tissues Space Physics: • main features of the solar system • life cycle of stars • redshift as evidence for the Big Bang theory	• magnetic force of attraction and repulsion • magnetic fields of permanent and induced magnets, and Earth's magnetic field • magnetic effects of currents, how solenoids enhance the effect and uses of electromagnets • how transformers are used in the National Grid and the reasons for their use – the transformer equation (Triple Science only)	

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