



CURRICULUM PLAN

COMBINED SCIENCE PHYSICS
(EDEXCEL 9-1)
BRAMHALL HIGH SCHOOL

Curriculum Intent

It is our intention as Science Department to provide all children, regardless of their prior learning, background, or special needs, with a broad and balanced science curriculum. We aim to promote positive attitudes to science as an interesting and enjoyable subject. To develop pupils' awareness of how science impacts on their everyday life.

Pupils are encouraged to develop their practical skills, to work collaboratively and to query and evaluate scientific evidence.

We aim to cultivate an environment conducive to learning. We encourage and value our pupils' opinions, ideas, and contributions. Similarly, we expect pupils to strive for excellence and respect the contributions of other adults and their peers. Our intention is for pupils to enjoy their learning, to be resilient, make progress and achieve at an appropriate level.

Academic Year: 2026-2027

Review Date: September 2026

Author: Mr A Powell – Head of Science

YEAR 10					
Term	Programme of Learning	Links to the National Curriculum / Specification / Additional	Assessments	What extra learning opportunities are planned?	Disciplinary Literacy
Term 1a	CP2 Forces and motion - Momentum recap - Collisions - Stopping distances - Car safety	Forces Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP2 Physics CPR CP2 – End of unit test	New air track to be used and can extend to elastic and inelastic collisions. Can also do more than two objects colliding	Tier 1: mass, *force , Newton, weight Tier 2: interact, collision Tier 3: resultant, *acceleration , *momentum , conservation
	CP3 Conservation of energy - Energy store - Energy efficiency - Keeping warm - kinetic energy - Potential energy	Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP3 Physics CPR	Consider systems which aren't 100% efficient in calculations Stress link GPE/KE and 6 markers Energy presentations	Tier 1: Elastic, nuclear energy, system. *efficiency Tier 2: *Dissipated , efficiency, *lubrication , thermal energy, Tier 3: *gravitational potential energy , *kinetic energy , conservation

Term 1b	CP3 Conservation of energy - Non-renewable resources - Renewable resources - Energy trends & issues	Wave Motion Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP3 End of unit test		Tier 1: Elastic, nuclear energy, system. efficiency Tier 2: Dissipated, efficiency, lubrication, thermal energy, Tier 3: gravitational potential energy, kinetic energy, conservation
Term 2a	CP4 Waves - Types of waves - Wave properties - Wave speed equations - Wave speed practicals - Waves at boundaries - Reflection - Refraction	Wave Motion Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP4 Physics CPR	Link to refraction of sound as well as water	Tier 1: speed, lens, ray Tier 2: *Frequency, transverse, *amplitude Tier 3: microwave, infrared, ultraviolet, gamma, radiation, conservation, *Wavelength, wave speed, refraction, absorption, total internal reflection

Term 2b	CP5 Light and the Electromagnetic spectrum - EM spectrum - EM properties and uses - Dangers of EM Spectrum - Radiation & temperature - Climate change CP6 Radioactivity - History of the atom - Atomic structure - Nucleus structure - P, E, N for atoms	Wave Motion Scientific thinking Experimental skills Analysis and Evaluation Measurement Units Atomic Structure Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP5 Physics CPR CP4/5 End of unit test	Modelling radioactivity Carbon 14 dating	Tier 1: speed, lens, ray Tier 2: Frequency, transverse Tier 3: microwave, infrared, ultraviolet, *gamma, radiation, conservation, Wavelength, wave speed, refraction, absorption, total internal reflection Tier 1: Atom, *Nucleus Tier 2: Gamma ray. *Alpha, *beta, electron, proton, Tier 3: Radioactive decay, activity, background, *Becquerel,
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CURRICULUM PLAN – COMBINED
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Term 3a	CP6 Radioactivity - Electron orbits - Background radiation - Radiation and decay - Nuclear Equations	Atomic Structure Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	Year 10 Exams CP6 Physics CPR		Tier 2: Gamma, alpha, beta, electron, proton, Rutherford Tier 3: Radioactive decay, activity, background, Becquerel, positron, nucleus, *ionisation, *penetration, absorption
Term 3b	CP6 Radioactivity - Half-life - Contamination - Irradiation - Dangers of radiation		CP6 End of unit test	Litvinenko	Tier 2: Gamma, alpha, beta, electron, proton, Rutherford Tier 3: Radioactive decay, activity, background, Becquerel (Bq), positron, nucleus, ionisation, penetration, *Contamination

YEAR 11

Term	Programme of Learning	Links to the National Curriculum / Specification / Additional	Assessments	What extra learning opportunities are planned?	Disciplinary Literacy
Term 1a	CP7 Energy – Forces doing work - Power and work CP8 Forces and their effects -Fields -Contact forces -Non-contact forces -Force vector diagrams CP9 Electricity & circuits - Circuit symbols - Series and parallel rules - Energy & charge - Current/Potential Difference - Calculations	Forces Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP7 Physics CPR CP7/8 End of unit test CP9 Physics CPR	Enrichment – Tues revision Fred model of fuses Wire wool fuses Welding and heating effects	Tier 1: force, work, power, distance, energy Tier 2: *resultant, parallel, uniform, vector Tier 3: *electrostatic, gravitational Tier 1: Electrons, voltage, circuit, volt, emitting, diode Tier 2: *Series, *parallel Tier 3: *Current, *potential difference, voltmeter, ampere, coulomb, thermistor, perpendicular, equilibrium

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Term 1b	CP9 Electricity & circuits - Resistance rules - Semiconductors - Power and Energy - Heating effect of currents - a.c and d.c - Fuses and the plug - Domestic electricity - Electrical Safety	Electricity Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	Year 11 Mock exams	Enrichment – Tuesday revision Van de Graaff pHET fields	Tier 1: earth, live, neutral, fuse, field Tier 2: neutral, negative, positive, *induce Tier 3 Residual, induction,
Term 2a	CP10 Magnetism and the motor effect - Magnets and fields - Electromagnetism - Magnetic forces CP11 Electromagnetic Induction - EM induction - Transformers - Transformer equation - National Grid & safety	Forces Magnetism & electromagnetism Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP11 Physics CPR CP10/11 End of unit test	Enrichment – Tuesday revision How the Earth's magnetic field works Investigating electromagnets practical - modelling and evaluating methods	Tier 1: poles, *field , compass Tier 2: *attraction , repulsion. Tier 3: permanent, magnetic, flux, solenoid, Fleming, *transformer , primary coil, secondary coil, induced voltage, induced current.

Term 2b	CP12 Particle Model - Particle model - Density - Changing state - Specific heat capacity - Specific latent heat - Energy Calcs - Gas temps and pressures - Gas pressures & volume - Absolute zero - Kelvin scale	Structure of matter Forces Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP12 Physics CPR	A Level SHC Q SHC metals and liquids	Tier 1: Particle, atom, molecule, state, melt, freeze, boil, *volume . Tier 2: *Density , evaporate, condense, state. Tier 2: *Sublimation , vaporisation, *specific heat capacity , *specific latent heat .
	CP13 Force and matter - Bending and stretching - Hooke's Law - Elastic limit - Work done on springs	Structure of matter Forces Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	CP13 Physics CPR CP12/13 End of unit test	Stretching other materials	Tier 1: Force, weight, length, energy, spring, pressure, force, area, depth, weight, volume, float, sink, Tier 2: *Extension , constant, upthrust. Tier 3: Newton, Pascal, Hooke, *elastic limit , plastic

Term 3a	Consolidation				
Term 3b	Revision				