



CURRICULUM PLAN

TRIPLE 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 - Collisions - Stopping distances - Car safety	Forces Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP2 Physics CPR SP2 – 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, inertia Tier 3: resultant, *acceleration , *momentum , conservation
	SP3 Conservation of energy - Energy efficiency - Keeping warm - kinetic energy - Potential energy	Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP3 Physics CPR 1 SP3 Physics CPR 2	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

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Term 1b	- Renewable resources - Non-renewable resources - Energy trends & issues	Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP3 End of unit test	Modelling and pHET for wave core practical to consolidate what pupils do.	
Term 2a	SP4 Waves - Types of waves - Wave properties - Wave speed equations - Wave speed practicals - Waves at boundaries - Reflection - Refraction - Sound and hearing - Infra and ultrasound - Seismic waves & Earth	Wave Motion Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP4 Physics CPR SP4 End of unit test	Earth structure and p and s wave diagrams	Tier 1: Echo, ray, lens, *ultrasound, sonar, *amplitude Tier 2: *Frequency, Tier 3: *infrasound, *Wavelength, wave speed, refraction, absorption, total internal reflection Tier 1: *real, magnification Tier 2: virtual. Tier 3: *focal point, converging, diverging, focal length, lens power.

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Term 2b	SP5 Light and the Electromagnetic spectrum - Lenses - Ray Diagrams - Dispersion - Colour - EM spectrum - EM properties and uses - Dangers of EM Spectrum - Radiation & temperature - Climate change SP6 Radioactivity - History of the atom - Atomic structure - Nucleus structure - P, E, N for atoms - Electron orbits	Atomic Structure Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP5 Physics CPR	Look at power of lenses More lens diagrams to consider object position Designing heat exp. Modelling radioactivity Flame tests and energy Carbon 14 dating	Tier 1: *real, magnification Tier 2: virtual. Tier 3: *focal point, converging, diverging, focal length, lens power. Tier 1: Atom, *Nucleus Tier 2: *Gamma *Alpha, *beta, electron, proton, Tier 3: Radioactive decay, activity, background, *Becquerel
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Term 3a	SP6 Radioactivity - Radiation and decay - Background radiation - Half-life - Contamination - Irradiation - Using radioactivity - Dangers of radioactivity - Fission and Fusion - Radiation in medicine SP7 Astronomy	Atomic Structure Scientific thinking Experimental skills Analysis and Evaluation Measurement Units Space Physics Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP6 Physics CPR 1 SP6 Physics CPR 2 SP6 End of unit test	Comparing disasters Litvinenko Start to link to stars	Tier 1: energy, temperature, pressure Tier 2: Nuclear reactor, *fission, Main sequence Tier 3: *contamination, *irradiation, *fusion, daughter nuclei, chain reaction, uranium, control rod, moderator,
Term 3b	SP7 Astronomy - The Solar System - Helio-centrism - Geo-centrism - Gravity and Orbits - Life cycle of stars - Redshift - CMBR - Origins of the Universe	Space Physics Scientific thinking Experimental skills Analysis and Evaluation Measurement	Year 10 Exams SP7 Physics CPR SP7 End of unit test	Calculating distances in space. History of space Doppler effect	Tier 1: Solar system, sun, star, planet, comet, galaxy, universe, satellite, moon, asteroid, black hole, Tier 3: *Nebula, proton-star, white dwarf, red giant, *supernova, neutron star, light year, resultant

YEAR 11

Term	Programme of Learning	Links to the National Curriculum / Specification / Additional	Assessments	What extra learning opportunities are planned?	Disciplinary Literacy
Term 1a	SP8 Energy – Forces doing work - Power and work SP9 Forces and their effects - Force vector diagrams - Contact forces - Non-contact forces - Rotational forces - Gears SP10 Electricity & circuits - Circuit symbols - Series and parallel rules - Energy & charge - Current/Potential Difference - Resistance rules - Special resistors - Power and Energy - Heating effect of currents - Calculations	Forces Energy Scientific thinking Experimental skills Analysis and Evaluation Measurement Units Electricity Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP8 Physics CPR SP9 Physics CPR SP8/9 End of unit test SP10 Physics CPR	A level Qs Weight, stairs & chair drag Enrichment – Tues revision Welding and heating effects Fred model of fuses Wire wool fuses	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	SP10 Electricity & circuits - a.c and d.c - Fuses and the plug - Domestic electricity - Electrical Safety SP11 Static Electricity - Charges & electrostatics - Dangers of electrostatics - Electric Fields - Use of electrostatics	Electricity Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP11 Physics CPR SP10/11 End of unit test 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 , electrostatic Tier 3 Residual, induction, precipitator
Term 2a	SP12 Magnetism and the motor effect - Magnets and fields - Electromagnetism - Magnetic forces - Motors - Loudspeakers SP13 Electromagnetic Induction - EM induction - Microphone - Generators - Transformers - Transformer equation - National Grid & safety	Forces Magnetism & electromagnetism Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP13 Physics CPR SP12/13 End of unit test	Enrichment – Tuesday revision How the Earth's magnetic field works Strength of electromagnets practical and modelling evaluating methods	Tier 1: poles, field, compass, motor Tier 2: attraction, repulsion, *generator Tier 3: permanent, magnetic, flux, solenoid, Fleming, *transformer , primary coil, secondary coil, induced voltage, induced current.

Term 2b	SP14 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 SP15 Force and matter - Bending and stretching - Hooke's Law - Elastic limit - Work done on springs - Pressure - Pressure in fluids - Hydraulics - Pressure and upthrust	Structure of matter Forces Scientific thinking Experimental skills Analysis and Evaluation Measurement Units	SP14 Physics CPR 1 SP14 Physic CPR 2 SP15 Physics CPR SP14/15 End of unit test	Extend to different liquids and gas A Level SHC Q SHC metals and liquids Extend to different liquids and gas Stretching other materials Link to hydraulics and force multipliers	Tier 1: Particle, atom, molecule, state, melt, freeze, boil, volume. Tier 2: *Density, evaporate, condense, state. Tier 2: Sublimation, vaporisation, *hydraulics, *specific heat capacity, *specific latent heat. Tier 1: Force, weight, length, energy, spring, *pressure, force, area, *density, depth, weight, volume, float, sink, Tier 2: *Extension, constant, upthrust. Tier 3: Newton, Pascal, Hooke, *elastic limit, plastic deformation.
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Term 3a	Consolidation				
Term 3b	Revision				