



Curriculum Overview for Science KS3

The table below details the skills and knowledge students will be covering each half term in Year 7 in this subject area.

	HT1	HT2	НТ3	HT4	HT5	HT6
Knowledge and skills covered this year	Safety in the laboratory: equipment, measuring skills, assessing risks. Materials-substanc es and properties: Composites, material properties, polymers Particles- particles and structure: States of matter, the particle model, evaporation, melting and boiling points, diffusion, brownian motion Cells- the cellular basis of life: Plant and animal cells, structures in cells, specialised cells, diffusion in cells	Energy and energy stores: Energy stores, conservation of energy, conduction, convection and radiation Body systems: skeleton function, joints and muscles breathing, organisation in animals Assessment prep	Separation techniques: Pure substances and mixtures, solutions, Filtration, decanting, immiscibility, distillation, chromatography Forces and motion: Squashing and stretching, measuring forces, friction, streamlining, balanced and unbalanced forces	Science week activities Atoms and Elements: The periodic table, atoms, elements, compounds, metals and non metals, chemical formulae Sound: Waves, sound and energy transfer, echoes, ultrasound	Reproduction - in plants and animals: Plant reproduction, plant structure, fertilisation in plants and life cycles, puberty and adolescence, human reproductive system and cycle, menstrual cycle, fetus development Assessment prep/Repair and rebuild	Energy 2- Power and energy resources: Power and energy, energy in the home, renewable energy resources, energy in food, non renewable energy Space: Gravity, the night sky, the solar system, day and night

The table below details the skills and knowledge students will be covering each half term in Year 8 in this subject area.





	HT1	HT2	НТ3	HT4	HT5	НТ6
Knowledge and skills covered this year	Health and lifestyle: Diet, exercise, alcohol, drugs. Elements and the Periodic Table: The periodic table, atoms, elements, compounds, metals and non metals, chemical formulae	Electricity: Circuits Animal and plant processes: Photosynthesis, metabolism, respiration Chemical reactions: chemical formula and compounds, writing equations, oxidation, neutralisation, displacement,	Motion and Pressure: Equilibrium in force systems, stretching and Hooke's law, moments of forces Adaptation and inheritance: environmental and inheritated characteristics, DNA, genes chromosomes and inheritance, hereditary diseases. DNA research.	Science week activities Metal and acid reactions: Forming salts, producing gases.	Light: Waves, energy transfer, light, laws of light reflection and refraction, the eye and the camera, colour Ecosystems: biodiversity, food chains, food webs and interdependence	Magnetism: Bar magnets, attraction and repulsion, magnetic fields, electromagnetic devices. Earth and Resources: Rocks and rock cycles. Resources from the Earth, finite resources.





The table below details the skills and knowledge students will be covering each half term in Year 9 in this subject area.

	HT1	HT2	НТ3	HT4	НТ5	НТ6
Knowledge and skills covered this year	Cell biology- microscopy, structure and cell processes, eukaryotes and prokaryotes, cell specialisation, osmosis and diffusion, active transport. Exchange surfaces. Mixtures and Separation- pure substances, mixtures and formulations, techniques and chromatography and gas identification,	Conservation and dissipation of energy: Energy stores and transfers, power and work, GPE and KE transfers and calculations, energy dissipation, efficiency. Cell divisionand the cell cycle: DNA and the genome, cell cycle and mitosis, stem cells, ethics Atomic Structure: Atoms, elements and compounds	Assessment preparation Atomic structure (cont): Atoms, elements and compounds recap, chemical equations and balancing equations, structure of the atoms, p n and e, isotopes. Energy by Heating/Energy resources: Conduction, insulators, heating the home, renewable and non-renewable resources.	Organisation and the digestive system: Principles of organisation, the digestive system, chemistry of food, enzymes, making digestion efficient, Science week Periodic table: Development of the periodic table, the modern periodic table, Group 1, Group 7, Group 0, Transition metals and their properties	Transport in animals- blood, the heart, breathing: Blood, blood vessels and transport, the heart and structure, heart disease, breathing, The Earth's atmosphere: The Atmosphere structure, global warming and acid rain, carbon footprint, pollutants Particle model and matterdensity and SHC, internal energy of substances., latent heat and	Organisms and their environments: Food chains and webs, populations and community, interdependence, biodiversity, competition and adaptations.





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equations and balancing equations, structure of the atoms, p n and e, isotopes.		equations and balancing equations, structure of the atoms, p n and e,		the particle model	





Curriculum Overview for Science KS4

The table below details the skills and knowledge students will be covering each half term in **Year 10** in this subject area. Awarding Organisation: AQA

	HT1	HT2	НТ3	HT4	НТ5	НТ6
Knowledge and skills covered this year	Communicable diseases: Infection and response Ions: Formation of ions, ionic bonding Electricity-circuits, pd, current and resistance. Non communicable disease and lifestyle: Risk factors	Chemical changes: Neutralisation, acid reactions Electricity in the home: domestic electricity and safety Plant biology: processes in plants	Chemical calculation: Moles, mass calculations, products in reactions Forces in balance: contact and non contact forces Respiration: aerobic and anaerobic, exercise effects Assessment preparation	Extraction of metals: Reactivity series, displacement. Radioactivity: Development of the atomic model, isotopes, radioactive decay and nuclear equations, half life, background radiation and exposure, contamination and irradiation	Covalent molecules: Giant structures, small covalent molecules and properties. Hydrocarbons: Organic chemistry and fuels, alkanes and alkenes Energy changes in reactions: Exothermic and endothermic.	The nervous system and hormonal control Fertility and Hormones Waves and wave behaviour Assessment preparation and feedback.

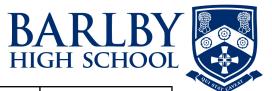




The table below details the skills and knowledge students will be covering each half term in **Year 11** in this subject area. Awarding Organisation: AQA

	HT1	HT2	НТ3	HT4	HT5	
Knowledge and skills covered this year	Homeostasis and response: The nervous system, reflexes and synapses,the endocrine system, puberty and the menstrual cycle, controlling fertility, other hormones. Rates of chemical change: Rates of reaction, using graphs, reversible reactions. Forces: Resultant forces and work, stretching, pressure in gases, Newtons laws,	Assessment prep Mock Exams Inheritance, variation and selection: DNA, reproduction and meiosis, genetic diagrams, variation, evolution, genetic engineering, fossils, classification Organic chemistry: Hydrocarbons Crude oil and cracking, alkenes and polymers. Chemical analysis:	Waves: Sound, light, refraction Ecology: Food chains and webs, populations and community, interdependence, biodiversity, competition and adaptations. The carbon cycle and decay, deforestation and land use. Magnetism: Permanent and induced magnets, electromagnetism electromagnetic devices. Chemistry of the	Using resources: Finite and renewables, recycling, life cycle assessments, Water. Mock Exams Exam preparation	Exam preparation	





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