Curriculum Summary Document

Year 10 Combined – Science

Module/Unit of Learning	Taught During	What will students learn?	How does this help to build a broad and strong foundation?	Links to other subjects
AQA GCSE Plant Biology, Ecology, and biodiversity	**HT1**	Students will study plant tissues, organs and transport systems, photosynthesis, plant adaptations, ecosystems, biodiversity, food chains and human impacts on the environment.	Develops understanding of how plants function and how organisms interact with their environment. Builds knowledge of sustainability, food production, conservation and the importance of maintaining biodiversity.	Geography (ecosystems and climate change), Maths (sampling and data analysis), Food Technology (photosynthesis and food production).
AQA GCSE Periodic table and bonding	**HT1**	Students will learn about the development of the periodic table, groups and periods, electronic structure, ionic bonding, covalent bonding, metallic bonding and the properties of different substances.	Establishes a strong foundation in chemical principles and explains how atomic structure influences the properties and behaviour of elements and compounds. Prepares students for understanding chemical reactions and material properties.	Maths (ratios and formulae), Physics (electrons and atomic structure), Design Technology (properties of materials).
AQA GCSE Atomic structure (Physics) and transferring energy	**HT2**	Students will study atomic structure, isotopes, radioactive decay and nuclear radiation, alongside energy stores, energy transfers, conservation of energy and energy dissipation.	Develops understanding of matter, radiation and energy in the physical world. Builds the scientific knowledge needed to explain nuclear processes, energy efficiency and the generation and transfer of energy.	Maths (equations and calculations), Geography (energy resources), History (development of atomic theory and nuclear science).
AQA GCSE Organic chemistry	**HT2**	Students will learn about crude oil, hydrocarbons, alkanes, alkenes, fractional distillation, combustion, cracking and the uses of organic compounds.	Provides an understanding of carbon-based compounds and their importance in everyday life. Develops knowledge of fuels, chemical reactions, industrial processes and the environmental impact of using fossil fuels.	Geography (fossil fuels and climate change), Maths (chemical formulae and calculations), Design Technology (polymers and materials).
AQA GCSE Particle Model of Matter	**HT2**	Students will study the particle arrangement and movement in solids, liquids and gases, changes of state, internal energy, specific heat capacity, latent heat and gas pressure.	Builds understanding of the behaviour and properties of matter. Provides the foundation for explaining thermal energy, changes of state and the behaviour of materials in different conditions.	Maths (calculations and graphs), Geography (weather and atmospheric pressure), Design Technology (materials and their properties).
AQA GCSE Chemical and energy changes	**HT3**	Students will learn about exothermic and endothermic reactions, reaction profiles, oxidation and reduction, reactivity of metals, displacement reactions, electrolysis and energy changes during chemical reactions.	Develops understanding of how and why chemical reactions occur. Builds knowledge of energy transfer, chemical reactivity and the practical applications of chemical processes in industry and everyday life.	Maths (energy calculations and graphs), Physics (energy transfers), Geography (industrial processes and environmental impact).
AQA GCSE Quantitative Chemistry	**HT3**	Students will study relative formula mass, conservation of mass, balanced chemical equations, moles, reacting masses, concentration and the use of quantitative methods in chemistry.	Develops mathematical confidence and precision in scientific problem-solving. Provides essential skills for understanding chemical reactions, analysing experimental results and making accurate predictions.	Maths (algebra, ratios, percentages and rearranging equations), Physics (formulae and calculations), Computer Science (data handling).

Curriculum Summary Document

Year 10 Combined – Science

AQA GCSE Magnets	**HT4**	Students will learn about permanent and induced magnets, magnetic fields, magnetic poles, electromagnets, the motor effect and the applications of electromagnetism.	Develops understanding of magnetic forces and electromagnetic principles. Provides a foundation for understanding electrical devices, motors, generators and the role of magnetism in modern technology.	Maths (graphs and equations), Design Technology (electrical devices), Engineering (motors and electromagnets).
AQA GCSE Forces	**HT5**	Students will study different types of forces, resultant forces, contact and non-contact forces, motion, speed, acceleration, Newton's laws, momentum, stopping distances and moments.	Builds understanding of how objects move and interact. Develops mathematical problem-solving and provides the foundation for understanding motion, mechanics, transport safety and engineering principles.	Maths (equations, graphs and proportionality), PE (movement and forces), Design Technology (structures and engineering).
AQA GCSE Homeostasis	**HT5**	Students will learn about the regulation of internal conditions, the nervous system, reflex actions, hormones, blood glucose regulation, temperature control and the menstrual cycle.	Develops understanding of how the human body maintains stable internal conditions. Provides essential knowledge for understanding human physiology, health, disease and the coordination of body systems.	PE (body regulation and exercise), PSHE (health and wellbeing), Maths (interpreting biological data).
AQA GCSE Inheritance, Variation, and Evolution	**HT6**	Students will study DNA, genes, chromosomes, inheritance, genetic crosses, variation, natural selection, evolution, selective breeding, genetic engineering and evidence for evolution.	Develops understanding of genetics, biodiversity and how organisms change over generations. Builds scientific knowledge that supports understanding of heredity, adaptation, evolution and modern biological developments.	Maths (probability and genetic crosses), Geography (biodiversity and adaptation), History (development of evolutionary theory).
AQA GCSE Rates of reaction	**HT6**	Students will learn about factors affecting reaction rates, including temperature, concentration, pressure, surface area and catalysts. They will investigate collision theory and interpret graphs showing changes in reaction rates.	Develops understanding of how chemical reactions can be controlled and optimised. Strengthens practical investigation skills, analytical thinking and the ability to explain chemical processes in industrial and everyday contexts.	Maths (graphs, gradients and calculations), Physics (particle movement and energy), Design Technology (industrial processes).