BRANNEL SCHOOL
EXCELLENCE | CREATIVITY | COMMUNITY

Curriculum Summary Document

Year 7 – Science

Developing Scientific Thinking and Investigation Skills

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
Introduction to science	Autumn 1	Students learn laboratory safety, correct use of apparatus, and how to record data systematically. They practise identifying variables, making predictions, and evaluating risks. They begin to use scientific vocabulary accurately and structure observations clearly.	Builds core working scientifically skills: planning, measuring, recording, presenting, and evaluating evidence. These habits underpin all KS3 and GCSE practical work and develop accuracy, precision, and reasoned explanation.	Oracy: developing precise spoken explanation Maths: tables, measurements, and simple data presentation
Intro to Chemistry	Autumn 1	Students learn the particle model and use it to explain states of matter and changes of state. They represent particles diagrammatically and describe differences in particle arrangement, movement, and energy. They apply ideas of diffusion and gas pressure to real contexts.	Establishes the conceptual foundation for chemical reactions, bonding, and energetics. Supports progression to conservation of mass, formulae, and balanced equations at GCSE.	Oracy: explaining particle behaviour Maths: reading scales and interpreting simple graphs
Chemistry in action	Autumn 1	Students carry out observations of physical and chemical changes and identify evidence of chemical reactions. They learn that reactions involve rearrangement of particles and that mass is conserved. Students begin to represent reactions using word equations.	Reinforces evidence-based reasoning and accurate observation. Introduces reaction language and representation, supporting later work on equations, reaction types, and stoichiometry at GCSE.	Oracy: describing observable changes
Human Body Part 1	Autumn 2	Students learn about organs and organ systems, focusing on circulation, respiration, and digestion. They explain the hierarchical organisation from cells to systems. They study gas exchange surfaces and lifestyle impacts on the body.	Builds secure core biological knowledge for KS4 physiology, including breathing mechanics, nutrient absorption, and blood transport. Develops accurate anatomical and functional explanation.	Oracy: explaining biological processes clearly PE: linking physiology to exercise and fitness
Energy	Autumn 2	Students learn that energy is stored and transferred but conserved. They represent energy transfers using diagrams and identify	Introduces the central concept of energy conservation, a unifying principle in KS3 and GCSE Physics. Supports later	Maths: proportional reasoning and unit conversion

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		processes such as heating, electrical work, and movement. They compare energy quantities and use units appropriately.	calculations involving power, efficiency, and energy changes.	
Health	Spring 1	Students examine how lifestyle choices, diet, exercise, and microorganisms affect health. They learn how the body defends itself and how diseases spread. They consider the role of bacteria in digestion and the impact of drugs and alcohol.	Develops understanding of biological processes affecting wellbeing and disease, preparing students for cellular and immunological detail at GCSE.	PSHE: healthy choices and wellbeing
Forces	Spring 1	Students learn that forces arise from interactions and can change an object's motion. They draw force diagrams, compare balanced and unbalanced forces, and measure force in newtons. They investigate stretching, friction, and air resistance.	Introduces Newtonian models used throughout KS3 and GCSE. Develops quantitative reasoning about forces, motion, and energy transfer.	Maths: interpreting scale diagrams and proportional relationships
Periodic Table	Spring 2	Students study the organisation of the periodic table into groups and periods. They identify metals and non-metals and describe trends in reactivity and properties. They begin to predict patterns based on group behaviour.	Establishes classification and periodicity concepts essential for GCSE chemical reactions, bonding, and properties. Develops reasoning using trends and patterns.	Oracy: explaining trends and justifying predictions
Acids and Alkalis	Spring 2	Students learn the pH scale, indicators, and neutralisation. They conduct investigations to classify substances and observe reactions. They represent neutralisation using word equations.	Forms the foundation for GCSE reaction equations, titration methods, and quantitative chemistry involving acids and bases.	Maths: reading measurement scales and recording results accurately
Life on our planet	Summer 1	Students study ecosystems, food webs, and biodiversity. They explain interdependence and how changes affect population size. They evaluate human impacts on habitats and sustainability.	Builds understanding of ecological interactions and environmental change, supporting GCSE ecology and sustainability units.	Geography: understanding environmental change and resource use

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Space	Summer 1	Students learn about the solar system, gravity, and astronomical scale. They model day/night and seasons and describe orbits. They use scientific models to explain observations and compare scales.	Develops system-model reasoning and conceptual understanding of gravitational interactions, preparing students for GCSE astronomy and physics topics.	Maths: working with scale, estimates, and large numbers
Enrichment project	Summer 2	Students plan and conduct an independent inquiry, selecting methods, collecting data, and presenting conclusions. They evaluate reliability and suggest improvements. They communicate findings in written and spoken form.	Strengthens autonomy in scientific reasoning, evidence evaluation, and structured communication—core habits required for successful GCSE practical and extended responses.	Oracy: presenting structured scientific argument