BRANNEL SCHOOL
EXCELLENCE | CREATIVITY | COMMUNITY

Curriculum Summary Document

Year 8 – Science

Strengthening Core Concepts and Working Scientifically 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 revisit laboratory routines, safe practice, and accurate measurement. They refine skills in identifying variables, planning simple enquiries, and presenting data using tables and basic graphs.	Secures working-scientifically practices from Year 7 and strengthens the precision and reliability needed for more complex investigations later in KS3 and GCSE.	Oracy: developing precise spoken explanation Maths: measurement and data tables
Respiratory System	Autumn 1	Students examine the structure and function of the gas exchange system. They use models to explain breathing mechanics and analyse how lifestyle and environment affect respiratory health.	Builds the biological foundation for cellular respiration, exercise physiology, and disease mechanisms studied later in KS3 and GCSE.	Oracy: describing biological processes clearly PE: links to exercise and performance
Chemical Reactions	Autumn 1– Autumn 2	Students represent reactions as rearrangements of atoms and use word equations. They classify combustion, oxidation, and thermal decomposition and identify evidence for chemical change.	Prepares students for symbolic representation, conservation of mass reasoning, and balanced chemical equations required at GCSE.	Oracy: explaining evidence for change Maths: interpreting patterns in observations
Electricity	Autumn 2	Students build series and parallel circuits and measure current and potential difference. They relate circuit behaviour to component function and use circuit diagrams accurately.	Introduces core electrical concepts and representation systems that are directly extended to quantitative circuit calculations at GCSE.	Maths: proportional reasoning using current and voltage relationships
Metals	Autumn 2	Students compare physical and chemical properties of metals. They investigate reactions of metals with acids and describe patterns using reactivity.	Supports understanding of reactivity series, extraction processes, and redox reactions at GCSE.	Oracy: justifying reasoning using observed patterns
The Earth	Spring 1	Students study the rock cycle, geological change, and Earth structure. They explain weathering, erosion, and formation processes using particle and energy models.	Provides conceptual links between chemistry of materials and environmental systems, supporting GCSE Earth chemistry and resources.	Geography: Earth structure and surface processes

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Human Body Part 2 and Plants	Spring 2	Students learn about reproduction, growth, and plant structure. They compare human and plant reproductive strategies and analyse adaptation for successful pollination and seed dispersal.	Develops biological understanding of inheritance, variation, and evolutionary processes that are extended at GCSE.	Oracy: structured biological explanation Geography: ecosystems and species distribution
Waves and Magnets	Summer 1	Students model sound and light as waves and explore frequency, amplitude, and reflection. They investigate magnetic fields and the effect of magnets and electromagnets.	Introduces representational models of waves and fields that underpin GCSE physics topics including optics and electromagnetism.	Maths: interpreting wave diagrams and proportional relationships
Variation and Evolution	Summer 2	Students analyse patterns of inherited and environmental variation. They explore natural selection and adaptation using real biological examples.	Forms the conceptual basis for GCSE genetics, heredity, and evolutionary theory.	Oracy: constructing reasoned scientific argument
Enrichment Project	Summer 2	Students design and conduct an independent scientific investigation. They present findings through written and spoken communication and evaluate reliability of evidence.	Strengthens independence, critical thinking, and communication—all required for GCSE practical and extended response questions.	Oracy: presenting scientific explanation