BRANNEL SCHOOL
EXCELLENCE | CREATIVITY | COMMUNITY

Curriculum Summary Document

Year 10 – Combined Science

Module/Unit of Learning	Taught During	What will students learn?	How does this prepare students for success at GCSE?	Links to other Subjects
Chemical Changes	Autumn 1	Students learn reactions of acids with metals, bases and carbonates. They write balanced symbol equations and investigate observable patterns in reactivity. They interpret practical results and develop accuracy in using chemical language and representation.	Strengthens fluency with symbolic representation and multi-step reasoning needed for calculation-based GCSE chemistry. Builds confidence with required-practical style observations and extended chemical explanations.	Maths: ratio and balancing equations
Quantitative Chemistry	Autumn 1	Students calculate relative formula mass, moles, concentration and percentage yield. They complete multi-step chemical calculations and interpret data from practical and theoretical contexts. They analyse sources of error and justify conclusions using evidence.	Builds numerical fluency and accuracy in multi-step calculations, essential for higher-tariff chemistry questions. Strengthens students' ability to explain methods and interpret quantitative data clearly.	Maths: multi-step calculations
Electricity	Autumn 2	Students investigate current, potential difference, resistance and power in series and parallel circuits. They construct and interpret circuit diagrams using standard symbols. They take accurate measurements using ammeters and voltmeters and explain how component behaviour varies.	Develops confidence applying equations, rearranging formulae and analysing data—core skills for GCSE physics. Prepares students for unfamiliar-context circuit questions requiring explanation and justification.	Maths: rearranging equations
Homeostasis	Spring 1	Students learn mechanisms of nervous and hormonal control. They study reflexes, endocrine responses and the regulation of internal conditions. They explain feedback loops and evaluate how system failure leads to disorder.	Strengthens multi-step biological explanation and secure use of specialist vocabulary. Prepares students to tackle extended written answers involving sequencing and cause-and-effect reasoning.	Oracy: explaining biological pathways
Inheritance & Evolution	Spring 1	Students learn DNA structure, genes, alleles and patterns of inheritance. They interpret genetic diagrams and analyse variation in populations. They evaluate evidence supporting natural selection and evolutionary change.	Develops structured written responses and evaluative reasoning needed for high-tariff biology questions. Strengthens accuracy in scientific terminology and model-based explanation.	History: development of scientific understanding

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Energy Changes	Spring 2	Students interpret energy profile diagrams and link bond energies to reaction energetics. They identify exothermic and endothermic patterns in data. They evaluate practical methods and justify conclusions using evidence.	Supports required-practical style questions and extended reasoning about energy changes. Builds confidence interpreting data and explaining relationships between variables.	Maths: interpreting data
Rates & Organic Chemistry	Summer 1	Students investigate factors affecting reaction rate and apply collision theory. They interpret rate graphs and explain trends using particle models. Students learn the structures, reactions and uses of hydrocarbons, functional groups and polymers.	Strengthens analytical reasoning and graph interpretation. Develops precision with chemical structures and terminology required for GCSE organic chemistry.	Geography: environmental impact of polymers
Forces	Summer 2	Students study resultant force, acceleration, momentum and Newton's laws. They interpret and construct motion graphs. They apply equations to model the behaviour of moving objects	Builds multi-step quantitative reasoning and confidence interpreting graphs—core components of GCSE physics. Strengthens understanding of model-based explanation.	Maths: gradient and rate of change
Forces (Consolidation)	Summer 2	Students revisit and extend force and motion concepts with a focus on unfamiliar scenarios. They compare physical models and practise transfer of knowledge between contexts. They refine accuracy in using equations and interpreting graphical information.	Enhances exam-readiness by strengthening application, reasoning and evaluation skills across varied question styles. Supports fluency with mathematical modelling under exam conditions.	Maths: multi-step calculation practice