

(Science - Combined) Year 10 Long Term Plan

Rationale (with end points): Throughout the course, the scientific process is taught, with many opportunities to safely plan, risk assess, investigate, record, conclude and evaluate practical investigations, together with the relevant maths skills, and key subject-specific vocabulary that will enable students to be scientifically literate. In Years 10 we continue the work started in Year 9 as we build on the knowledge and understanding of biology, chemistry and physics gained during Key Stage 3. At Key Stage 4 we follow the AQA Scheme of Learning. All students in Years 10 and 11 follow the Combined Science Trilogy course. In Year 10 Biology, students study Organisation, Infections and Response, Bioenergetics and Homeostasis and Response. In Year 10 Chemistry, we move on to history and design of the Periodic Table, Structure and Bonding, Chemical Quantities and Chemical Changes and Energy changes. In Year 10 Physics we learn about Energy, electricity, particle model of matter and atomic structure.

Term	Topic	Knowledge	Skills	Reading /wider reading
Autumn term 1	<ul style="list-style-type: none"> • Biology – B2 Organisation • Chemistry – C2 Bonding, structure & properties of matter • Physics – P1 Energy 	<ul style="list-style-type: none"> • Animal tissues, organs and organ systems. • Plant tissues, organs and systems • Chemical bonds, ionic, covalent and metallic • Bonding and structure • Energy changes in a system • Conservation and dissipation of energy 	<ul style="list-style-type: none"> • Practical Skills - Microscopes • Mathematical Skills - Magnification Calculations • Extended Writing – Experimental Method • Scientific method – models, theories and laws. 	Wider Reading 1: Selected Article (Scientific Paper/Magazine)

		<ul style="list-style-type: none"> National and global energy resources 		
Autumn 2	<ul style="list-style-type: none"> Reteach Week Biology – B3 Infection & response Chemistry – C3 Quantitative chemistry Physics - P2 Electricity 	<ul style="list-style-type: none"> Communicable diseases Chemical measurements Amounts of substance Current, potential difference and resistance Series and Parallel circuits 	<ul style="list-style-type: none"> Graphical Skills – Charts, graphs and tables. Analysing & Evaluation Skills - Graphs & Calculations Extended Writing – Menstrual Cycle 	Wider Reading 2: Selected Article (Scientific Paper/Magazine)
Spring 1	<ul style="list-style-type: none"> Reteach Week Biology – B3 Infection & response Chemistry – C4 Chemical changes Physics - P2 Electricity 	<ul style="list-style-type: none"> Communicable diseases Reactivity of metals Domestic uses and safety Energy transfers 	<ul style="list-style-type: none"> Practical Skills – Experimental Method Mathematical Skills - Balancing Equations – Ratios 	Wider Reading 3: Selected Article (Scientific Paper/Magazine)
Spring 2	<ul style="list-style-type: none"> Reteach Week Biology – B4 Bioenergetics 	<ul style="list-style-type: none"> Photosynthesis Reactions of acids Changes of State and Particle model 	<ul style="list-style-type: none"> Analysing & Evaluating Skills – Renewable Energy resources Mathematical Skills - Multi-step calculations 	Wider Reading 4: Selected Article (Scientific Paper/Magazine)

	<ul style="list-style-type: none"> • Chemistry – C4 Chemical changes • Physics – P3 Particle Model of Matter 	<ul style="list-style-type: none"> • Internal energy and energy transfers • Particle Model and pressure 	<ul style="list-style-type: none"> • Graphical Skills – Describing trends 	
Summer 1	<ul style="list-style-type: none"> • Reteach Week • Biology – B4 Bioenergetics • Chemistry – C4 Chemical changes • Physics – P4 Atomic Structure 	<ul style="list-style-type: none"> • Respiration • Electrolysis • Atoms and Isotopes • Atoms and nuclear radiation 	<ul style="list-style-type: none"> • Extended writing – Evaluate Bioleaching & Phytomining 	Wider Reading 5: Selected Article (Scientific Paper/Magazine)
Summer 2	<ul style="list-style-type: none"> • Reteach Week • Biology – B5 Homeostasis & Response • Chemistry – C5 Energy Changes • Physics – P5 Forces 	<ul style="list-style-type: none"> • Homeostasis • Human nervous system • Exothermic & endothermic reactions 	<ul style="list-style-type: none"> • Mathematical Skills – Wave property calculations • Practical Skills – Angle measurements • Practical Skills – Building Circuits and taking measurements. • Mathematical Skills - Calculations & Rearranging Formulae 	Wider Reading 6: Selected Article (Scientific Paper/Magazine)

