Curriculum Map: SCIENCE (CORE & COMBINED)

Nothing Short of Remarkable
We are Ambitious ▪ We are Committed ▪ We are Proud

	Year 7	Year 8	Year 9	Year 10	Year 11
Term 1	*TOPIC/KNOWLEDGE* Introductory unit Cells and organisation Particles Energy Reproduction Periodic table *SKILLS* Science skills: Planning investigations: writing detailed methods, safety precautions Conducting investigations, including safely working with Bunsen burners and microscopes Analysing data, including finding and describing errors, plotting graphs and explaining trends Mathematical skills: How to use science equations, Using and identifying units Calculating averages	*TOPIC/KNOWLEDGE* Photosynthesis Material Chemistry Heat Transfers Chemical reactions Gas exchange systems Motion *SKILLS* Further development of science skills, which include: - Planning investigations: writing detailed methods, naming specific apparatus and safety precautions - Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: - Using and rearranging equations - Using and converting units - Calculating averages and ranges	*TOPIC/KNOWLEDGE* Cells Atomic structure Energy Transport *SKILLS* Further development of science skills, which include: Planning investigations: writing detailed methods, naming specific apparatus and safety precautions Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: Rearranging equations for worded tasks Identifying and converting units	*TOPIC/KNOWLEDGE* ***Combined Science*** Communicable diseases Quantitative chemistry Atomic structure Non-communicable diseases Extracting metals Waves *SKILLS* Further developing scientific skills including; developing a method to record accurate results, measuring accurately, graph plotting, drawing conclusions and evaluating methods Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the laboratory, in the field and in other learning environments. Develop the ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.	*TOPIC/KNOWLEDGE* ***Combined Science*** Respiration Organic chemistry Magnetism Inheritance Chemistry of the atmosphere Variation and evolution *SKILLS*

			• Calculating averages and ranges • Rounding numbers to a number of significant digits • Presenting answer in standard form		
Term 2	*TOPIC/KNOWLEDGE* Forces Atoms, elements and compounds Magnetism *SKILLS* Science skills: - Planning investigations: writing detailed methods, safety precautions - Conducting investigations, including safely working with Bunsen burners and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends Mathematical skills: - How to use science equations, - Using and identifying units - Calculating averages	*TOPIC/KNOWLEDGE* Respiration Atmosphere Light Genetics and Evolution *SKILLS* Further development of science skills, which include: - Planning investigations: writing detailed methods, naming specific apparatus and safety precautions - Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: - Using and rearranging equations	*TOPIC/KNOWLEDGE* Separating mixtures Electric circuits Transport in cells *SKILLS* Further development of science skills, which include: - Planning investigations: writing detailed methods, naming specific apparatus and safety precautions - Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: - Rearranging equations for worded tasks	*TOPIC/KNOWLEDGE* Communicable diseases Quantitative chemistry Atomic structure Non-communicable diseases Extracting metals Waves *SKILLS* Further developing scientific skills including; developing a method to record accurate results, measuring accurately, graph plotting, drawing conclusions and evaluating methods	*TOPIC/KNOWLEDGE* Respiration Organic chemistry Magnetism Inheritance Chemistry of the atmosphere Variation and evolution *SKILLS* Further developing scientific skills including; developing a method to record accurate results, measuring accurately, graph plotting, drawing conclusions and evaluating methods

		- Using and converting units - Calculating averages and ranges	- Identifying and converting units - Calculating averages and ranges - Rounding numbers to a number of significant digits - Presenting answer in standard form		
Term 3	*TOPIC/KNOWLEDGE* Nutrition and Digestion Acid and metal reactions Electricity Ecosystems Space *SKILLS* Science skills: - Planning investigations: writing detailed methods, safety precautions - Conducting investigations, including safely working with Bunsen burners and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends Mathematical skills: - How to use science equations - Using and identifying units - Calculating averages	*TOPIC/KNOWLEDGE* Matter Sound Geology Project Ecology Project *SKILLS* Further development of science skills, which include: - Planning investigations: writing detailed methods, naming specific apparatus and safety precautions - Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: - Using and rearranging equations - Using and converting units	*TOPIC/KNOWLEDGE* Digestive enzymes Structure and bonding Matter Bone composition project *SKILLS* Further development of science skills, which include: - Planning investigations: writing detailed methods, naming specific apparatus and safety precautions - Conducting investigations, including working safely with acids and alkalis, Bunsen burners, electrical equipment and microscopes - Analysing data, including finding and describing errors, plotting graphs and explaining trends, and drawing lines of best fit Further mathematical skills: - Rearranging equations for worded tasks	*TOPIC/KNOWLEDGE* ***Combined Science*** Electrolysis Energy changes and rates of reaction Ecology *SKILLS* Further developing scientific skills including; developing a method to record accurate results, measuring accurately, graph plotting, drawing conclusions and evaluating methods Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the laboratory, in the field and in other learning environments. Develop the ability to evaluate claims based on science through critical analysis of the methodology, evidence and	*TOPIC/KNOWLEDGE* **Content Review and Examination Preparation** Students will revisit and review the content of the examination units ***Combined Science:*** **Paper 1 Biology** Biology topics 1–4: Cell Biology; Organisation; Infection and response; and Bioenergetics. **Paper 2 Biology** Biology topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology. **Paper 1 Chemistry** Chemistry topics 8–12: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry; Chemical changes; and Energy changes. **Paper 2 Chemistry** Chemistry topics 13–17: The rate and extent of chemical change; Organic chemistry; Chemical

		- Calculating averages and ranges	- Identifying and converting units - Calculating averages and ranges - Rounding numbers to a number of significant digits - Presenting answer in standard form	conclusions, both qualitatively and quantitatively.	analysis; Chemistry of the atmosphere; and Using resources. **<u>Paper 1 Physics</u>** Physics topics 18–21: Energy; Electricity; Particle model of matter; and atomic structure. **<u>Paper 2 Physics</u>** Physics topics 22–24: Forces; Waves; and Magnetism and electromagnetism *SKILLS* Further developing scientific skills including; developing a method to record accurate results, measuring accurately, graph plotting, drawing conclusions and evaluating methods Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the laboratory, in the field and in other learning environments. Develop the ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.
Career Pathways					