

<u>Overview Document</u> <u>2026/27</u>	<u>Curriculum Area:</u> Science	<u>Year Group:</u> 9
	<u>Personnel Responsible:</u> Mrs. S. Koasha	<u>Quality Assured by:</u> Mr. J. Anderson

Cycle	Topic/Unit Title – Big Question	Content Coverage	Skill development and links to other areas of this subject's curriculum
1	Biology: What are the building blocks of life? Chemistry: How are elements in the periodic table different from one another? Physics: What happens when charges move?	Biology: Cells; Microscopy; Cell Differentiation; Mitosis; Stem Cells. Chemistry: States of Matter and Changing States; Elements, Compounds, Mixtures; Separation Techniques; Development of the Periodic Table. Physics: Circuits and Charge; Series circuits; Parallel Circuits; Circuit Symbols; Potential Difference; Resistance in a Wire; Structure of the Atom.	Students will deepen knowledge gained in Year 7 Cycle 1 (cellular biology) and apply this knowledge to prokaryotic and eukaryotic cells. Students will be exploring different organelles and their functions. This will provide the fundamental knowledge that underpins future Biology learning. Practical skills will be developed with microscope work. Students will be building on knowledge from Year 7 and 8 on the particle model and how the changes of state take place. Here new concepts will be introduced such as intermolecular attraction of particles and how it is linked to the changes of state. This gained knowledge will also be useful during future lessons (Year 9 Cycle 1, 3, 4 and Year 10 Cycle 3/4). Electricity topic builds on foundational knowledge gained in Year 7 Cycle 3 and will deepen knowledge when covering series and parallel circuits. Students will be exploring current, resistance and P.D and how they impact one another. Practical skills developed through circuit work.
2	Biology: How do substance move around cells? Chemistry: How are elements in the periodic table different from one another? Physics: Where does our electricity come from?	Biology: Diffusion; Osmosis; Active Transport; Exchange Surfaces. Chemistry: Group 1 Elements (Alkali Metals); Group 7 Elements (Halogens); Group 0 Elements (Noble Gases). Physics: Mains Electricity; Power; Power Equations; National Grid; AC and DC; Mains Electricity.	Movement of substances builds on knowledge gained in Year 7 Cycle 1 and Year 9 Cycle 1 (cells and specialised cells). Looking at exchange surfaces will allow students to explore more complex content such as structure and function of organ systems in Cycle 3. Builds on knowledge from Year 7 Cycle 1. Scientific enquiry skills developed through use of Required Practical. Students will be building on prior knowledge on the properties of elements from Year 7 and 8. Here students will be exploring the properties of elements in group 1, 7 and 0 related to atomic structure. Students have looked at how a thermal power stations work in Year 8. Here students will be deepening their understanding by exploring step-up and step-down transformers, how electricity is transported over long distances and the differences between AC and DC.
3	Biology: What happens to our food? Chemistry: How and why do atoms join together? Physics: How does energy influence our 21 st Century lives?	Biology: Organisation; Enzymes; Digestive System; Enzymes in Digestion; Food Tests. Chemistry: Formation of Ions; Ionic Structures; Covalent Structures; Polymers. Physics: Energy Stores; Kinetic Energy; Gravitational Potential Energy Potential Energy and Changes in Energy; Elastic Potential Energy; Specific Heat Capacity; Specific Heat Capacity Practical.	Students will be building upon knowledge from previous years on cells, tissues, organs and organ systems (Year 7 Cycle 1, Year 8 Cycle 2/4). Links to content covered in Cycle 2 Year 9. Develop deeper understanding of how to use scientific apparatus during enzyme practical and food tests. Analytic skill development during results analysis of practical's. SMSC development (nutrition and diet). Chemistry knowledge links and builds knowledge from Year 8 Cycle 1, Year 9 Cycle 1 and Year 9 Cycle 2. Physics builds on the concept of the conservation of energy law. Here students will also be using mathematical skills to rearrange formulae (cross-curricular links with Maths).
4	Biology: How do cells work together to keep an organism alive? Chemistry: How does the structure of a substance affect its properties? Physics: Where does our electricity come from?	Biology: Respiratory System; Breathing; Circulatory System; Blood and blood vessels; Cardiovascular Disease; Cardiovascular Disease Treatment; Non-Communicable Disease; Cancer. Chemistry: Allotropes of Carbon; Metallic Bonding. Physics: Non-Renewable Energy Resources; Renewable Energy Resources Conservation of Energy and Efficiency.	Students will be building upon knowledge from previous years on cells, tissues, organs and organ systems (Year 7 Cycle 1, Year 8 Cycle 2/4). Links to content covered in Cycle 2 and 3 of Year 9. SMSC of risk factors associated with non-communicable diseases. Links to Year 9 Cycle 3 (covalent bonding). Students will be identifying the differences between renewable and non-renewable energy. They will be exploring the impact they have on the environment linking to ecosystems covered in Year 7/8. SMSC links to impact on environment.