

Year	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
7	See Biology/Physics Curriculum Overviews	<p><b>Topic:</b> Atoms and Particles</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> In the topic of atoms and particles, students will explore the fundamental building blocks of matter. They will learn about atoms, elements, compounds, and mixtures, as well as the structure of atoms, including protons, neutrons, and electrons. The unit will cover key concepts such as the periodic table, atomic number, and mass number. Students will also develop skills in understanding how particles behave in different states of matter (solids, liquids, and gases) and explore how substances change through physical and chemical reactions. Critical thinking and investigative skills will be enhanced through experiments and problem-solving activities related to particle theory and atomic interactions.</p> <p><b>Duration:</b> 16 lessons</p>	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews	<p><b>Topic:</b> Chemical Reactions</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie</p> <p><b>Focus:</b> chemical reactions, students will learn about how substances interact to form new products, focusing on the differences between physical and chemical changes. They will explore key topics such as reactants, products, and conservation of mass, along with types of chemical reactions like combustion, neutralization, and oxidation. The unit will also introduce concepts like endothermic and exothermic reactions, acids and bases, and the reactivity of metals. Students will develop skills in predicting reaction outcomes, balancing chemical equations, and conducting experiments to observe changes in matter, fostering analytical thinking and problem-solving abilities.</p> <p><b>Duration:</b> 16 lessons</p>	See Biology/Physics Curriculum Overviews

<p><b>8</b></p>	<p><b>Topic:</b> Periodic Table</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> Discovering the hidden secrets of the periodic table, whilst learning about the alkali metals and halogens. Pupils will develop a deep understanding of what information the periodic table holds, along with an understanding of its creation. Pupils will need to use logical thinking and problem-solving skills to spot the patterns in the table.</p> <p><b>Duration:</b> 4 lessons</p>	<p><b>Topic:</b> Types of Reactions</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> How the heating and combustion of substances creates an irreversible, chemical change and how to represent these reactions in equations. Pupils will have the opportunity to carry out multiple different chemical reactions then record and understand the outcome.</p> <p><b>Duration:</b> 4 lessons</p> <p><b>Topic:</b> Metal and Non-Metals</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> The entire periodic table can be classed into metals and non-metals. There are distinct differences and pupils will explore the properties of them and how they differ in a range of chemical reactions.</p> <p><b>Duration:</b> 4 lessons</p>	<p>See Biology/Physics Curriculum Overviews</p>	<p><b>Topic:</b> Elements</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> In the topic of elements, students will explore the periodic table, learning about the properties, atomic structure, and classification of different elements. They will develop skills in identifying patterns in element behaviour, understanding chemical symbols and formulas, and investigating how elements combine to form compounds.</p> <p><b>Duration:</b> 5 lessons</p>	<p><b>Topic:</b> Chemical Energy</p> <p><b>Resources:</b> PP, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> In this topic, students will explore how energy is stored in chemical bonds and released during reactions such as combustion and respiration. They will develop skills in understanding energy transfer, interpreting energy profiles of reactions, and investigating the conservation of mass and energy in chemical processes.</p> <p><b>Duration:</b> 3 lessons</p>	<p>See Biology/Physics Curriculum Overviews</p>
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9	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews	<p><b>Topic:</b> Atomic Structure</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts in Showbie.</p> <p><b>Focus:</b> In this topic, students will explore the structure and properties of atoms, including subatomic particles such as protons, neutrons, and electrons. They will learn about atomic number, mass number, and isotopes, which are fundamental concepts for understanding chemical behaviour. The course will also cover the organization of elements in the periodic table, highlighting trends such as reactivity, atomic size, and ionization energy. Through practical experiments and problem-solving exercises, students will develop skills in scientific inquiry, data analysis, and critical thinking, enabling them to make connections between atomic structure and the chemical properties of elements.</p> <p><b>Duration:</b> 18</p>	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews
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<p><b>10</b></p>	<p><b>Topic:</b> Atomic Structure</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> Students will delve into the components of atoms, including protons, neutrons, and electrons, as well as concepts like atomic number, mass number, and isotopes. They will explore how the arrangement of these particles influences chemical behaviour and properties. The topic also covers electron configurations and how they relate to the periodic table and chemical reactivity. Through a combination of theoretical learning and practical experiments, students will develop essential skills in scientific inquiry, data interpretation, and problem-solving, fostering a deeper understanding of the fundamental principles of chemistry.</p> <p><b>Duration:</b> 10 lessons</p> <p><b>Topic:</b> Structure and Bonding <b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> In this topic, pupils will study the different types of chemical bonds, including ionic, covalent, and metallic bonding. They will explore</p>	<p><b>Topic:</b> Chemical Energy</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> This topic will allow students to explore the concepts of energy changes in chemical reactions, focusing on exothermic and endothermic processes. They will investigate the law of conservation of energy, reaction profiles, and the role of activation energy in chemical reactions. Additionally, students will learn about energy transfers in everyday reactions and applications, such as combustion and respiration. Through hands-on experiments and calculations, they will develop essential skills in data analysis, experimental design, and critical thinking, enabling them to understand how chemical energy affects both natural processes and industrial applications.</p> <p><b>Duration:</b> 5</p>	<p><b>Topic:</b> Chemical Changes</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts, on Showbie.</p> <p><b>Focus:</b> Students will investigate various types of chemical reactions, including oxidation and reduction, precipitation, and acid-base reactions. They will learn to recognize the signs of a chemical change, such as gas production and colour changes, and will explore the concepts of reactants and products, including the conservation of mass in chemical reactions. The topic will also cover factors affecting reaction rates, such as temperature, concentration, and surface area. Through practical experiments and theoretical studies, students will develop skills in scientific inquiry, analytical thinking, and quantitative reasoning, enabling them to understand and predict the outcomes of chemical reactions in various contexts.</p> <p><b>Duration:</b> 15</p>	<p><b>Topic:</b> Quantitative Chemistry</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> Throughout this topic, students will explore the quantitative aspects of chemical reactions, including the concept of the mole, molar mass, and stoichiometry. They will learn how to balance chemical equations and calculate the masses of reactants and products involved in reactions. The topic will also cover concepts such as concentration, titration, and percentage yield, providing students with a solid foundation in practical and theoretical chemistry. Through problem-solving exercises and laboratory experiments, students will develop essential skills in numerical analysis, data interpretation, and critical thinking, enabling them to quantitatively assess chemical processes and their real-world applications.</p> <p><b>Duration:</b> 8 lessons</p>	<p>See Biology/Physics Curriculum Overviews</p>	<p>See Biology/Physics Curriculum Overviews</p>
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	<p>how these bonds form between atoms, the resulting structures, and the properties of substances that arise from these bonding types. The topic will also cover concepts like electronegativity, bond polarity, and the implications of bonding on the physical and chemical properties of materials. Through practical activities and experiments, students will enhance their skills in scientific reasoning, data analysis, and critical thinking, allowing them to make connections between molecular structures and their macroscopic properties.</p> <p><b>Duration:</b> 9 lessons</p>					
11	<p><b>Topic:</b> Rates of Reactions</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts in Showbie.</p> <p><b>Focus:</b> Through the topic, students will investigate the factors influencing reaction rates, such as temperature, concentration, surface area, and catalysts, while learning to measure and analyse changes in reactants and products over time. Through practical experiments and data interpretation, they will develop skills in scientific inquiry, critical thinking, and quantitative analysis, enabling them to draw conclusions about how these factors affect</p>	<p><b>Topic:</b> Organic Chemistry</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts in Showbie.</p> <p><b>Focus:</b> An introduction to organic chemistry. To find out how hydrocarbon chemicals are manipulated to form useful materials used in everyday life.</p> <p><b>Duration:</b> 5 lessons</p> <p><b>Topic:</b> Chemical Analysis</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> To learn about the</p>	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews	See Biology/Physics Curriculum Overviews

	<p>chemical reactions.</p> <p><b>Duration:</b> 6</p>	<p>chemical tests and procedures used by chemists, in laboratories, can identify elements and quantities.</p> <p><b>Duration:</b> 6 Lessons</p> <p><b>Topic:</b> Using Resources</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> Discovering the value of materials, both naturally formed and produced by man. To appreciate why the handling of materials needs to be more carefully considered in the future, for waste management purposes.</p> <p><b>Duration:</b> 6 Lessons</p> <p><b>Topic:</b> Chemistry of the Atmosphere</p> <p><b>Resources:</b> PowerPoints, Practical Activities, Handouts on Showbie.</p> <p><b>Focus:</b> Pupils will explore the composition and structure of the Earth's atmosphere, including the changes it has undergone over time, the role of greenhouse gases, and the impact of human activities on air quality and climate change. Through research and practical investigations, they will develop skills in scientific</p>				
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# Chemistry Curriculum Overview

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