

| | Half-term 1 | | | Half-term 2 |
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| Topic | 4.3 Infection and Response | 5.3 Quantitative Chemistry | 5.5 Chemical Changes | 5.5 Chemical Changes |
| <p>Topic overview</p> <p>Students will learn...</p> | <p>In this section, students will explore how we can avoid diseases by reducing contact with them, as well as how the body uses barriers against pathogens.</p> <p>Students will then explore what happens once the pathogen is inside the body our immune system is triggered which is usually strong enough to destroy the pathogen and prevent disease.</p> <p>This section will continue to explore what happens once the pathogen is inside the body and how our immune system is triggered through white blood cells and antibodies.</p> <p>Students will also learn about vaccines and how this can lead to herd immunity.</p> | <p>How to apply chemical measurements, the conversation of mass and the quantitative interpretation of chemical equations to unfamiliar situations.</p> | <p>How to predict the products of specific and unfamiliar chemical reactions in the context of oxidation, reduction and redox.</p> <p>How to carry out chemical reactions including electrolysis, titrations, and the formation of salts.</p> | <p>How to predict the products of specific and unfamiliar chemical reactions in the context of oxidation, reduction and redox.</p> <p>How to carry out chemical reactions including electrolysis, titrations, and the formation of salts.</p> |

| | Half-term 2 | Half-term 3 | | |
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| Topic | 6.4 Atomic structure | 4.4 Bioenergetics | 5.5 Energy Changes | 5.6 The Rate and Extent of Chemical Change |
| Topic overview Students will learn... | <p>To recognise the different historical models of the atom and understand how the model has changed overtime. (Crossover content with chemistry unit atomic structure).</p> <p>To describe the currently accepted model of the atom.</p> <p>To describe nuclear radiation, its uses and management.</p> <p>To quantify nuclear decay and explain how nuclear fission and fusion work.</p> | <p>The next section will explore how plants harness the Sun's energy in photosynthesis in order to make food. This process releases oxygen which has built up over millions of years in the Earth's atmosphere to enable respiration for all living organisms.</p> <p>Students will then look into how both animals and plants use this oxygen to oxidise food in a process called aerobic respiration which transfers the energy that the organism needs to perform its functions.</p> | <p>How exothermic and endothermic reactions influence the temperature of the surroundings.</p> <p>How energy changes in a chemical reaction can be measured practically.</p> | <p>How the particle model and collision theory can be used to explain changes in rate.</p> <p>How variables can influence changes in reversible reactions.</p> <p>How rates of reaction can be measured practically.</p> |

| | Half-term 4 | | Half-term 5 | |
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| Topic | 5.6 The Rate and Extent of Chemical Change | Paper 1 reteach of 6.1 Energy and 6.2 Electricity | 4.6 Homeostasis | 5.7 Organic Chemistry |
| Topic overview Students will learn... | <p>How the particle model and collision theory can be used to explain changes in rate.</p> <p>How variables can influence changes in reversible reactions.</p> <p>How rates of reaction can be measured practically.</p> | | <p>This section will explore how cells require a constant temperature and pH as well as a constant supply of dissolved food and water.</p> <p>We will explore the structure and function of the nervous system and the hormonal system and how they bring about changes.</p> <p>Students will explore the homeostasis topic by looking at hormones involved in puberty, the menstrual cycle and the components of the endocrine system.</p> | <p>How to explain how crude oil is formed, separated and used.</p> <p>How hydrocarbons react and behave.</p> |

| Dates | Half-term 5 | | Half-term 6 | |
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| Topic | 6.3 Particle Model of Matter | 6.3 Particle Model of Matter | Year 10 Internal Exam | 6.5 Forces |
| Topic overview Students will learn... | <p>To utilise a particle model to predict the behaviour of solids, liquids and gases and their behaviour when exposed to different temperatures and pressures.</p> <p>To calculate changes in thermal energy and energy required for a change in state.</p> <p>That the internal energy of a system and the effect of changes of state and temperature on this.</p> | <p>To utilise a particle model to predict the behaviour of solids, liquids and gases and their behaviour when exposed to different temperatures and pressures.</p> <p>To calculate changes in thermal energy and energy required for a change in state.</p> <p>That the internal energy of a system and the effect of changes of state and temperature on this.</p> | | <p>To categorise forces and apply Newton's laws.</p> <p>To describe both quantitatively and qualitatively motion in a line.</p> <p>To apply a range of formulas in various scenarios.</p> <p>To calculate momentum and apply conservation of momentum (HT).</p> |