

SCIENCE – YEAR 7 CURRICULUM OVERVIEW

TOPIC TITLE	TOPIC OVERVIEW	KNOWLEDGE & SKILLS	ASSESSMENT	WIDER LINKS
<p>Year 7 - Term 1</p> <p>Particles and their behaviour</p>	<p>Particles and their behaviour</p> <p>In this first chemistry topic students will explore:</p> <ul style="list-style-type: none"> • How are particles arranged? • What happens at a change of state? • How can we use the particle model to explain what we see? 	<p>Particles and their behaviour</p> <ul style="list-style-type: none"> • Describing the properties of solids, liquids and gases. • Particle diagrams for solids, liquids and gases. • Using particle diagrams to explain observations such as diffusion and air pressure. • Describing the temperature graph produced when a substance changes state. 	<p>Particles and their behaviour</p> <p>Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Particles and their behaviour</p> <p>KS3</p> <p>Year 7 - Atoms elements & compounds</p> <p>Year 8 - Separating mixtures.</p> <p>KS4 - C2 The periodic table. C3 Structure and bonding. P6 molecules and matter. C8 Rate and equilibria. C9 Crude oil and fuels.</p>
<p>Atoms Elements and Compounds</p>	<p>Atoms Elements and Compounds</p> <ul style="list-style-type: none"> • What are atoms and elements? • How can we represent chemicals using symbols? 	<p>Atoms Elements and Compounds</p> <ul style="list-style-type: none"> • The definitions of atom and element • The difference between physical and chemical properties. • Writing equations for reactions. 	<p>Atoms Elements and Compounds</p> <p>Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Atoms Elements and Compounds</p> <p>KS3</p> <p>Year 7 - Particles and their behaviour. Reactions. Acids and Alkalis.</p> <p>Year 8 - The Periodic table. Separating mixtures. Reactions of metals and acids.</p> <p>KS4</p> <p>C1 Atomic structure. C2 Periodic table. C3 Structure and bonding. C4 Chemical calculations. C5 Chemical changes. C6 Electrolysis. C8 Rate and equilibria. C9 Crude oil for fuels. C10 Organic reactions. C11 Polymers. C12 Chemical analysis. C13 the earth's atmosphere"</p>

<p>Forces</p>	<p>Forces In this physics topic students will explore:</p> <ul style="list-style-type: none"> • What are the names of different forces? • How can we represent forces? • How can you calibrate a measuring device? • What are balanced forces? 	<p>Forces</p> <ul style="list-style-type: none"> • Describing forces by name. • Measuring forces using a Newton meter. • Representing forces using arrows. • Investigating upthrust • Understanding balanced and unbalanced forces. 	<p>Forces Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Forces KS3 Year 8 - Motion and Pressure.</p> <p>KS4 P8 Forces in balance. P9 Motion. P10 Forces in motion. P11 Force and pressure. P16 Space.</p>
<p>Cells</p>	<p>Cells In this Biology topic students will explore:</p> <ul style="list-style-type: none"> • What are cells made from? • How can cells be specialised? 	<p>Cells</p> <ul style="list-style-type: none"> • Identifying animal & plant organs. • Use microscopes to study cells. • Comparing animal and plant cells. • Describing the musculoskeletal system 	<p>Cells Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Cells KS3 Year 7 - Structure and Function of body systems and Reproduction. Year 8 - Ecosystem processes. KS4 B1 Cell structure and transport. B2 Cell Division. B4 Organising animals and plants. B5 Communicable diseases. B8 Photosynthesis. B9 Respiration. B10 The human nervous system. B13 Reproduction. B15 Genetics and evolution.</p>
<p>Structure and Function of body systems</p>	<p>Structure and Function of body systems In this biology topic we are exploring:</p> <ul style="list-style-type: none"> • How cells can work together to create 	<p>Structure and Function of body systems</p> <ul style="list-style-type: none"> • Defining and describing tissues, organs, organ systems. • Explaining the process of breathing and gas exchange. 	<p>Structure and Function of body systems Weekly homework which includes research and exam style questions</p>	<p>Structure and Function of body systems KS3 Year 7 - Cells. Reproduction. Year 8 – Health. KS4</p>

	<p>tissue and organs within an organism.</p> <ul style="list-style-type: none"> • What are the main organ systems in the body? • How does gas exchange work? • What are the tissues found in plants? 	<ul style="list-style-type: none"> • Describing the musculoskeletal system. • Explaining how joints and muscles allow movement. 	<p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>B1- Cell structure and transport. B2 Cell Division. B4 Organising animals and plants. B5 Communicable diseases. B8 Photosynthesis. B9 Respiration. B10 the human nervous system.</p>
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At the end of Term 1, students will sit an 'end of term' exam, based on the topics covered so far. This is to begin to prepare students for the linear exam based, terminal assessment they will encounter at GCSE.

<p>Year 7 - Term 2</p> <p>Sound</p>	<p>Sound</p> <p>In this physics topic students will explore: How do sound waves travel in air? How can we use an oscilloscope to show sound waves? What are the features of different waves?</p>	<p>Sound</p> <ul style="list-style-type: none"> • Describing sound waves. • Understanding oscilloscope traces. • Describing how we can insulate sound. • Describing how sound and ultrasound can be used. 	<p>Sound</p> <p>Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Sound</p> <p>KS3 Year 7 – Light KS4 P12 Wave properties.</p>
<p>Light</p>	<p>Light</p> <p>In this physics topic students will explore:</p> <ul style="list-style-type: none"> • How do light waves transfer energy? 	<p>Light</p> <ul style="list-style-type: none"> • Use the terms transparent, translucent and opaque correctly. • Describe the properties of different longitudinal and transverse waves. • State the law of reflection. 	<p>Light</p> <p>Weekly homework which includes research and exam style questions</p>	<p>Light</p> <p>KS3 Year 7 – Sound. KS4 P1 Conservation and dissipation of energy. P3 Energy resources. P7 Radioactivity. P12 Wave properties.</p>

	<ul style="list-style-type: none"> • What happens during reflection and refraction? • How can we see in colour? 	<ul style="list-style-type: none"> • Describe refraction. • Explain observations where coloured lights are mixed, or objects are viewed in different lights. 	Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.	P13 Light. B10 The human nervous system
Reactions	<p>Reactions In this chemistry topic students will explore:</p> <ul style="list-style-type: none"> • How can we classify chemical reactions? • How is energy related to chemical reactions? • How is mass conserved? 	<p>Reactions</p> <ul style="list-style-type: none"> • Know the definitions of molecule, compound and mixture. • Represent compounds using formulae. • Recognise neutralisation, combustion, thermal decomposition, oxidation and displacement reactions • Explain energy changes in terms of exothermic and exothermic reaction. • Describe the conservation of mass. 	<p>Reactions Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Reactions Atoms Elements and Compounds KS3 Year 7- Particles and their behaviour. Atoms, elements and compounds. Year 8 - The Periodic table. Separating mixtures. Reactions of metals and acids. KS4 C1 Atomic structure. C2 Periodic table. C3 Structure and bonding. C4 Chemical calculation. C5 Chemical changes. C6 Electrolysis. C7 Energy changes. C8 Rate and equilibria. C9 Crude oil for fuels. C10 Organic reactions. C11 Polymers. C12 Chemical analysis. C13 The earth's atmosphere. C14 The earth's resources. C15 Using the earth's resources.</p>
At the end of Term 2, students will sit an 'end of term' exam, based on the topics covered so far. This is to begin to prepare students for the linear exam based terminal assessment they will encounter at GCSE.				
Year 7 - Term 3 Acids and Alkalis	<p>Acids and Alkalis In this chemistry topic students will explore:</p> <ul style="list-style-type: none"> • What is the pH scale? • What is neutralisation? 	<p>Acids and Alkalis</p> <ul style="list-style-type: none"> • Hazard symbols and risk assessments • Describe substances using the pH scale. 	<p>Acids and Alkalis Weekly homework which includes research and exam style questions</p>	<p>Acids and Alkalis KS3 Year 7- Particles and their behaviour. Atoms, elements and compounds.</p>

	<ul style="list-style-type: none"> • How do you make salts? • How do you represent chemical reactions using equations? 	<ul style="list-style-type: none"> • Using indicators to investigate pH. • Neutralisation reactions to make salts. • Representing reactions using word equations. 	<p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Year 8. The Periodic table. Separating mixtures. Reactions of metals and acids. KS4 C3 Structure and bonding. C4 Chemical calculations. C5 Chemical changes. C10 Organic reactions. C12 Chemical analysis.</p>
Reproduction	<p>Reproduction In this Biology topic students will explore:</p> <ul style="list-style-type: none"> • What are the parts of the human reproductive systems? • How does a baby develop in the uterus? • How can doctors and scientists use our knowledge of reproduction to help people have babies? 	<p>Reproduction</p> <ul style="list-style-type: none"> • Reproduction in humans • Adolescence & puberty • Menstrual cycle 	<p>Reproduction Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Reproduction KS3 Year 7- Cells. Structure and Function of body systems. Year 8- Health. KS4 B1 Cell structure and transport. B2 Cell Division. B4 Organising animals and plants. B11 Hormonal control. B13 Reproduction. B14 Variation and evolution. B13 Genetics and evolution.</p>
Space	<p>Space In this physics topic students will explore:</p> <ul style="list-style-type: none"> • How does the Earth's position in Space affect us? • How does gravity affect the Earth? 	<p>Space</p> <ul style="list-style-type: none"> • The Solar System and beyond. • The cause of day and night and seasons. • Eclipses and satellites • Gravity in the Solar System. 	<p>Space Weekly homework which includes research and exam style questions</p> <p>Students will complete an end of topic test each half term. These tests contain a mixture of recall and application questions based on the current topic.</p>	<p>Space KS4 P16 Space.</p>

At the end of Term 3, students will sit an 'end of year' exam, based on all topics covered. This is to begin to prepare students for the linear exam based, terminal assessment they will encounter at GCSE.