

SCIENCE – YEAR 7 CURRICULUM OVERVIEW 2020 / 2021

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 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 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 KS3 Year 7 - Atoms elements & compounds Year 8 - Separating mixtures. KS4 - C2 The periodic table. C3 Structure and bonding. P6 molecules and matter. C8 Rate and equilibria. C9 Crude oil and fuels.</p>
<p>Cells</p>	<p>Cells In this first 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>Forces</p>	<p>Forces In this first physics topic students will explore:</p>	<p>Forces</p> <ul style="list-style-type: none"> • Describing forces by name. • Measuring forces using a Newton meter. 	<p>Forces Weekly homework which includes research and exam style questions</p>	<p>Forces KS3 Year 8 - Motion and Pressure.</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? 	<ul style="list-style-type: none"> • Representing forces using arrows. • Investigating upthrust • Understanding balanced and unbalanced forces. 	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.	KS4 P8 Forces in balance. P9 Motion. P10 Forces in motion. P11 Force and pressure. P16 Space.
Atoms Elements and Compounds	Atoms Elements and Compounds <ul style="list-style-type: none"> • What are atoms and elements? • How can we represent chemicals using symbols? 	Atoms Elements and Compounds <ul style="list-style-type: none"> • The definitions of atom and element • The difference between physical and chemical properties. • Writing equations for reactions. 	Atoms Elements and Compounds Weekly homework which includes research and exam style questions 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.	Atoms Elements and Compounds KS3 Year 7 - Particles and their behaviour. Reactions. Acids and Alkalis. 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 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"
Sound	Sound In this forth physics topic students will explore: <ul style="list-style-type: none"> • How do sound waves travel in air? • How can we use an oscilloscope to show sound waves? • What are the features of different waves? 	Sound <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. 	Sound Weekly homework which includes research and exam style questions 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.	Sound KS3 Year 7 - Light Year 8 - Motion and Pressure. KS4 P1 - Conservation and dissipation of energy. P8 Forces in balance. P9 Motion. P10 Forces in motion. P11 Force and pressure. P12 Wave properties.

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>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 tissue and organs within an organism. • What are the main organ systems in the body? • How does gas exchange work? • What are the tissues found in plants? 	<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. • Describing the musculoskeletal system. • Explaining how joints and muscles allow movement. 	<p>Structure and Function of body systems 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>Structure and Function of body systems KS3 Year 7 - Cells. Reproduction. Year 8 – Health. 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.</p>
<p>Reactions</p>	<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>

<p>Light</p>	<p>Light In this physics topic students will explore:</p> <ul style="list-style-type: none"> • How do light waves transfer energy? • What happens during reflection and refraction? • How can we see in colour? 	<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. • Describe refraction. • Explain observations where coloured lights are mixed or objects are viewed in different lights. 	<p>Light 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>Light KS3 Year 7 – Sound. KS4 P1 Conservation and dissipation of energy. P3 Energy resources. P7 Radioactivity. P12 Wave properties. P13 Light.</p>
<p>Reproduction</p>	<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>
<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.</p>				
<p>Year 7 - Term 3 Acids and Alkalis</p>	<p>Acids and Alkalis In this third chemistry topic students will explore:</p> <ul style="list-style-type: none"> • What is the pH scale? • What is neutralisation? • How do you make salts? • How do you represent chemical reactions using equations? 	<p>Acids and Alkalis</p> <ul style="list-style-type: none"> • Hazard symbols and risk assessments • Describe substances using the pH scale. • Using indicators to investigate pH. • Neutralisation reactions to make salts. 	<p>Acids and Alkalis 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</p>	<p>Acids and Alkalis KS3 Year 7- Particles and their behaviour. Atoms, elements and compounds. Year 8. The Periodic table. Separating mixtures. Reactions of metals and acids. KS4 C3 Structure and bonding. C4 Chemical calculations. C5 Chemical changes.</p>

		<ul style="list-style-type: none"> Representing reactions using word equations. 	application questions based on the current topic.	C10 Organic reactions. C12 Chemical analysis.
Space	Space In this first physics topic students will explore: <ul style="list-style-type: none"> How does the Earth's position in Space affect us? How does gravity affect the Earth? 	Space <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. 	Space Weekly homework which includes research and exam style questions 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.	Space KS4 P16 Space.
Ecosystem Processes	Ecosystem Processes <ul style="list-style-type: none"> In this Biology topic you will explore: Where do plants get their energy from. How do leaves work? Are there any other ways to release energy? The types of respiration. How do organisms interrelate in an ecosystem? 	Ecosystem Processes <ul style="list-style-type: none"> Describe and explain photosynthesis. How are leaves adapted for photosynthesis? What mineral do plants need? What is chemosynthesis? Anaerobic and aerobic respiration. Food chains and webs and their importance. 	Ecosystem Processes Weekly homework which includes research and exam style questions 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.	Ecosystem Processes KS3 Year 7 – Cells. Structure and function of body systems. Year 8 - Adaptation and variation. KS4 B4 Organising animals and plants. B8 Photosynthesis. B9 Respiration. B14 Variation and evolution. B16 Adaptation and interdependence. B17 Organisation of an ecosystem. B18 The effect of human interactions on ecosystem processes.

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.