

## Science GSA KS3 Curriculum Map 2023-24

**We aim to develop all students into scientists who:**

- have opportunities to indulge their natural curiosity for science leading to a lifelong passion;
- are scientifically confident and skilled learners with potential for embarking upon STEM-based careers;
- have a broad and deep knowledge of the sciences through immersion in our engaging spiral curriculum.

	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
<b>Year 7</b>						
<b>Biology topics covered</b>		B1 - Cells B2 - Tissues and Organs			B3 -Nutrition and Digestion	
<b>Chemistry topics covered</b>	C1 - Matter		C2 - Elements, compounds & mixtures			
<b>Physics topics covered</b>	P1 - Forces	P2 - Pressure P1 - Forces		P3 - Electricity P4 - Magnetism and Magnets		
<b>Projects this year</b>	Introduction to Science				Revision	STEM Project 1
<b>Knowledge Deepened</b>	The particulate nature of matter Atoms, elements and compounds Pure and impure substances Describing motion Forces Pressure in fluids Balanced forces Forces and Motion	Pressure in fluids Cells and organisation Cells and organisation The skeletal and muscular systems Gas exchange systems	Working Scientifically The particulate nature of matter Atoms, elements and compounds	Working Scientifically Current Electricity Static Electricity Magnetism	Working Scientifically Nutrition and digestion Health	<b>Working scientifically</b> Knowledge retrieval from prior learning Experimental skills and investigations Making predictions using scientific knowledge and understanding
<b>Skills developed</b>	- Using models to represent particles and changes of	- Using a formula - Working scientifically:	- Working scientifically: drawing conclusions,	-The ways in which scientific methods and	- present observations and data using	- Investigative skills -Identification of

	<p>state</p> <ul style="list-style-type: none"> <li>- Chromatography of liquids</li> <li>- select, plan and carry out the most appropriate types of scientific enquiries to test predictions,</li> <li>- use and derive simple equations and carry out appropriate calculations</li> </ul>	<p>drawing conclusions, - identifying and classifying, observing identifying and classifying, observing</p>	<p>- Using models to represent particles and changes of state</p>	<p>thinking develop over time</p> <ul style="list-style-type: none"> <li>- Making and recording observations</li> <li>- Building circuits</li> <li>- drawing data tables</li> <li>- drawing graphs</li> </ul>	<p>appropriate methods, including tables and graphs</p> <ul style="list-style-type: none"> <li>- interpreting data</li> </ul>	<p>variables</p> <ul style="list-style-type: none"> <li>-recording data</li> <li>-plotting graphs</li> <li>-interpreting data and explaining trends</li> <li>-presentation skills</li> <li>-research skills</li> </ul>
<b>National Curriculum Link</b>	<p>Chemistry - Particulate nature of matter</p> <p>Physics - motion and forces</p>	<p>Biology - Structure and function of living organisms</p>	<p>Chemistry</p>	<p>Physics - Electricity and electromagnetism</p>	<p>Biology - Structure and function of living organisms</p>	<b>Working scientifically</b>
<b>Flagship Link</b>					<b>Science &amp; Cooking and Nutrition</b> - Food Groups and Nutrition	
<b>Cross Curriculum Connections</b>	<p>Technology (analysis and evaluation) Year 7 HT2</p>	<p>Y8 D&amp;T HT1 Impact of food on diet</p> <p>Core PE KS3 - Anatomy</p>		<p>Computing (KS4) Hardware / software data representation / circuits</p>	<p>Y9 Personal Development HT4 - Diet and Exercise</p> <p>Y7 - D&amp;T - Healthy Eating</p> <p>Y8 D&amp;T - Diet and lifestyle</p> <p>Core PE KS4 - healthy Lifestyles</p>	<p>Year 7 human geography - graphing skills</p>
<b>Resources to support learning</b>	<p><a href="#">C1 - Particles</a></p> <p><a href="#">P1 - Forces</a></p>	<p><a href="#">B1 - Cells</a></p> <p><a href="#">B2 - Tissues and Organs</a></p> <p><a href="#">P2 - Pressure</a></p> <p><a href="#">P1 - Forces</a></p>	<p><a href="#">C2 - Elements, compounds &amp; mixtures</a></p>	<p><a href="#">P3 - Electricity</a></p> <p><a href="#">P4 - Magnetism and Magnets</a></p>	<p><a href="#">B3 - Nutrition and Digestion</a></p>	

	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
<b>Year 8</b>						
<b>Biology topics covered</b>	B5 - Organisms in Ecosystems B6 - Energy in Ecosystems				B4 - Reproduction B7 - Health & Disease	B7 - Health & Disease
<b>Chemistry topics covered</b>		C3 - Reactions C4 - Periodic Table				
<b>Physics topics covered</b>			P5 - Energy	P6 - Light and Sound		
<b>Projects this year</b>						Revision STEM Project 2
<b>Knowledge Deepened</b>	Chemical Reactions Energetics The Periodic Table Working Scientifically	Photosynthesis Interdependence in ecosystems Reproduction in plants Interdependence in ecosystems	Particles and energy stores Working Scientifically Calculation of fuel costs and costs in domestic settings	Observed Waves Sound Waves Energy and Waves Light Waves Working Scientifically	Nutrition and digestion Health Working Scientifically Reproduction in animals, menstrual cycle and birth	Working Scientifically Knowledge retrieval from prior learning
<b>Skills developed</b>	- present observations and data using appropriate methods, including tables and graphs	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions - present observations and data using	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions	- make and record observations and measurements - Working scientifically: drawing conclusions, identifying and classifying, observing	- make and record observations and measurements -present observations and data using tables and graphs - Evaluate data

		appropriate methods, including tables and graphs - apply sampling techniques.			- make and record observations and measurements - ask questions and develop a line of enquiry based on observations of the real world	
<b>National Curriculum Link</b>	Chemistry - The periodic table and chemical reactions	Biology - Material cycles and energy	Physics - Energy	Physics - Waves	Biology - Structure and function of living organisms	Working scientifically
<b>Flagship Link</b>		<b>Science and Geography</b> - tropical rainforest ecosystems		<b>Maths and Physics</b> - using formulae, algebra		
<b>Cross Curriculum Connections</b>		Y7 Geography - our green world	Y9 Geography - our warming world	Y7 Music - HT1 - keyboard skills	Y7 Personal Development HT4 - Puberty  Y7 D&T - Healthy eating  Y8 D&T - Impact of food on diet  Y10 H&S Care - Stages of development	
<b>Resources to support learning</b>	<a href="#">B5 - Organisms in Ecosystems</a> B6 - <a href="#">Energy in Ecosystems</a>	<a href="#">C3 - Reactions</a> <a href="#">C4 - Periodic Table</a>	<a href="#">P5 - Energy</a>	P6 - <a href="#">Light</a> and <a href="#">Sound</a>	<a href="#">B4 - Reproduction</a> <a href="#">B7 - Health &amp; Lifestyle</a>	

	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
<b>Year 9</b>						
<b>Biology topics covered</b>	B8 - Adaptation and Inheritance		B9 - Cells and Transport B10 - Cell Division			
<b>Chemistry topics covered</b>	C5 - Metals, Acids and Alkalis	C6 - The Earth		C7 - Fundamentals of Chemistry C8 - Patterns of the Periodic Table		
<b>Physics topics covered</b>		P7 - Space and Radiation			P8 - Energy and the Environment P9 - Energy Stores and Transfers	P9 - Energy Stores and Transfers P10 - Heat Transfers
<b>Knowledge Deepened</b>	Inheritance, chromosomes, DNA and genes Relationships in an Ecosystem Working Scientifically Chemical Reactions	The Earth and atmosphere Composition and structure of the Earth and atmosphere Rock cycle Carbon cycle  Space physics Understand the relationship between weight, mass and gravitational field strength The solar system Why we have seasons The light year	Pressure in fluids Cells and organisation Cells and organisation The skeletal and muscular systems Gas exchange systems Working Scientifically	Working Scientifically The particulate nature of matter Atoms, elements and compounds Pure and impure substances Describing motion Forces Pressure in fluids Balanced forces Forces and Motion The particulate nature of matter Atoms, elements and compounds	Atoms, elements and compounds Chemical reactions	Particles and energy stores Working Scientifically Nutrition and digestion Health
<b>Skills developed</b>	interpret observations and data, including identifying patterns and using observations,	Consider how scientific ideas change over time Consider the importance of peer review of	Microscopy Rearranging and applying formula Predicting, measuring,	The structure, history and development of the atom and periodic table.	The structure, history and development of the atom and periodic table.	Inputting numbers into calculations  Rearranging equations

	<p>measurements and data to draw conclusions</p> <p>present observations and data using appropriate methods, including tables and graphs</p> <p>Apply sampling techniques.</p>	scientific ideas	<p>recording and drawing conclusions</p> <p>Evaluating</p>			<p>Using correct SI units</p> <p>Scientific literacy (quality long answer questions)</p> <p>- Global environmental issues awareness.</p> <p>- Evaluation of Energy generation methods</p>
<b>National Curriculum Link</b>	<p>Biology - Genetics and evolution</p> <p>Chemistry - Chemical reactions</p>	<p>Chemistry - Earth and atmosphere</p> <p>Physics - space physics</p>	Physics - Space physics	Chemistry - atoms, elements and compounds	<p>Chemistry - The periodic table</p> <p>Physics - Energy</p>	Physics - Energy
<b>Flagship Link</b>		<b>Maths &amp; Science</b> - Graph interpretation	<b>Maths &amp; Science</b> - Rearranging equations		<b>Maths and Science</b> - converting measure and units	
<b>Cross Curriculum Connections</b>	<p><b>Maths (Measuring angles) Year 9 HT3</b></p> <p>Y7 Philosophy HT1 - Ultimate Questions</p> <p>Y8 Philosophy (HT6) - Science and Religion</p>	<b>Philosophy and Ethics (Year 7 HT1) Big questions</b>	<b>Cross-curricular - Maths - Converting measures / units (Year 10 HT4)</b>		<p><b>Curriculum links: Geography (year 9 term 3) Climate change</b></p> <p><b>Maths: Equations and inequalities (year 9 HT4)</b></p>	<b>Cross-curricular - Food technology (health and nutrition) Year 7 HT1</b>
<b>Resources to support learning</b>	<p><a href="#">Adaptation and Inheritance</a></p> <p><a href="#">Metals, Acids and Alkalis</a></p>	<p><a href="#">The Earth</a></p> <p><a href="#">Space and Radiation</a></p>	<p><a href="#">Cells and Transport</a></p> <p><a href="#">Cell Division</a></p>	<a href="#">Fundamentals of Chemistry</a>	<p><a href="#">Patterns of the Periodic Table</a></p> <p><a href="#">Energy and the Environment</a></p>	<p><a href="#">Enzymes and Digestion</a></p> <p>- <a href="#">Energy Stores and Transfers</a></p> <p><a href="#">Heat Transfers</a></p>