

**Year 9 Curriculum Overview [2022-23]**  
**Subject – Science**

Autumn Term	Composites	Knowledge & Understanding		Literacy Skills  Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
		Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
<b>HT1</b>	Genetics and Evolution 9	<ul style="list-style-type: none"> <li>Environmental variation</li> <li>Genetic Variation</li> <li><b>INVESTIGATING VARIATION</b></li> <li>Probability skills</li> <li>DNA Discovery &amp; Structure</li> <li>Genes and Extinction</li> <li>Natural Selection</li> <li>Evidence of evolution</li> <li>Literacy – Convincing arguments</li> </ul>	<ul style="list-style-type: none"> <li>Review Cell structure.</li> <li>Reproduction in humans</li> <li>Reproduction in plants</li> </ul>	<ul style="list-style-type: none"> <li>Scientific Research – DNA discovery,</li> <li>Gametes, fertilisation</li> </ul> Genetics and Variation Keywords	<ul style="list-style-type: none"> <li>Anthropology</li> <li>Osteology</li> <li>Archaeologists</li> </ul>	<b>Assessment Point 1</b> Genetics, Combustion and Reactivity
	Reactivity 7	<ul style="list-style-type: none"> <li>Metal Reactivity</li> <li>Energy and Reactions</li> <li><b>WS INVESTIGATING EXOTHERMIC &amp; ENDOTHERMIC REACTIONS</b></li> <li>Percentage change in mass</li> <li>Displacement</li> <li>Extracting metals</li> <li>Famous Chemists</li> </ul>	<ul style="list-style-type: none"> <li>Review Properties of different states of matter</li> <li>Chemical symbols and formulae</li> <li>Physical changes and Chemical reactions</li> </ul>	<ul style="list-style-type: none"> <li>Science Reports – Active and Passive Voices</li> </ul> Reactivity Keywords  Reciprocal and Scientific reading	<ul style="list-style-type: none"> <li>Cool jobs – explosive pursuits</li> </ul>	

<b>HT2</b>	<b>Forces and Motion</b> <b>6</b>	<ul style="list-style-type: none"> <li>• Forces and movement review</li> <li>• Speed</li> <li>• <b>INVESTIGATING SPEED</b></li> <li>• Acceleration</li> <li>• Equations and graphs</li> <li>• Turning Forces</li> </ul>	<ul style="list-style-type: none"> <li>• Forces</li> </ul>	<ul style="list-style-type: none"> <li>• Cohesion in Writing</li> </ul>	<ul style="list-style-type: none"> <li>• Cool jobs – motion</li> <li>• Crash investigators</li> </ul>	
	<b>Plant Growth</b> <b>4</b>	<ul style="list-style-type: none"> <li>• Plant products</li> <li>• <b>WS TESTING FOR STARCH</b></li> <li>• Growing Crops</li> <li>• Organic vs Intensive Farming</li> </ul>	<ul style="list-style-type: none"> <li>• Plant growth &amp; reproduction</li> <li>• Reactions in plants</li> <li>• Plant adaptations</li> <li>• Biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• Convincing arguments</li> </ul> <p>Keywords – lipids, carbohydrates, proteins, germination, nitrates, starch, polymer, hazard, risk</p>	<ul style="list-style-type: none"> <li>• Geneticist</li> <li>• Decision making skills</li> </ul>	

**Year 9 Curriculum Overview [2022-2023]**  
**Subject – Science**

Spring Term	Composites	Knowledge & Understanding		Literacy Skills  Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
		Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
	Plant Growth 4	<ul style="list-style-type: none"> <li>• Completion from HT2 and revision for examination</li> </ul>	<ul style="list-style-type: none"> <li>• Plant growth &amp; reproduction</li> <li>• Reactions in plants</li> <li>• Plant adaptations</li> </ul> Biodiversity	<ul style="list-style-type: none"> <li>• Convincing arguments</li> </ul> Keywords – lipids, carbohydrates, proteins, germination, nitrates, starch, polymer, hazard, risk	<ul style="list-style-type: none"> <li>• Geneticist</li> </ul> Decision making skills	
	Special Materials 7	<ul style="list-style-type: none"> <li>• Polymers</li> <li>• Peer review</li> <li>• Ceramics</li> <li>• Composite materials</li> <li>• Problems with materials</li> <li>• Biased language</li> <li>• Recycling</li> </ul>	<ul style="list-style-type: none"> <li>• The atom &amp; metal properties</li> <li>• Chemical symbols and formula</li> <li>• Production of carbon dioxide</li> </ul>	<ul style="list-style-type: none"> <li>• Science Reports – Active and Passive Voices</li> </ul>	<ul style="list-style-type: none"> <li>• STEM careers links: Materials Chemist Glass Artist</li> </ul>	<b>Assessment Point 2</b> Examination - Genetics, Reactivity, Forces and Motion
<b>HT4</b>	Forcefields 9	<ul style="list-style-type: none"> <li>• Force fields</li> <li>• <b>Literacy – Cohesion in writing</b></li> <li>• Static electricity</li> <li>• Current electricity</li> <li>• Resistance</li> <li>• <b>WS Rounding Numbers</b></li> <li>• Electromagnets</li> </ul>	<ul style="list-style-type: none"> <li>• Energy, electricity</li> </ul>	<ul style="list-style-type: none"> <li>• <b>WS equations and graphs</b></li> </ul>	<ul style="list-style-type: none"> <li>• Space travel</li> </ul>	

- **WS INVESTIGATING ELECTROMAGNETS**
- Missions in space

**Year 9 Curriculum Overview [2022-2023]**  
**Subject – Science**

Summer Term	Composites	Knowledge & Understanding		Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
		Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
<b>HT5</b>	<b>Biological Concepts</b> (KS3 Biology Review & Transition to KS4) 9	<ul style="list-style-type: none"> <li>• Microscopes</li> <li>• Plant and animal cells</li> <li>• <b>WS EXAMINING CELLS - MICROSCOPY</b></li> <li>• Specialised cells</li> <li>• Inside bacteria</li> <li>• Enzymes and nutrition</li> <li>• Enzyme action</li> <li>• Enzyme activity</li> <li>• <b>WS INVESTIGATING FACTORS EFFECTING ENZYME ACTIVITY</b></li> </ul>	Cell structure Enzymes	6 mark extended question writing (mini assessed homework)  Keywords prokaryotic and Eukaryotic	<ul style="list-style-type: none"> <li>• Doctor</li> <li>• Laboratory research</li> </ul>	
	<b>States of Matter 3</b> (KS3 Chemistry Review & Transition to KS4)	<ul style="list-style-type: none"> <li>• The Particle Model</li> <li>• State Changes &amp; Heating Curves</li> <li>• <b>WS HEATING CURVES</b></li> </ul>	KS3 Review (Year 7) Particle Theory	Extended Scientific explanations	<ul style="list-style-type: none"> <li>•</li> </ul>	

<b>HT6</b>	<p><b>Energy Conservation</b> (KS3 Physics Review &amp; Transition to KS4) 5</p>	<ul style="list-style-type: none"> <li>• Energy Stores and transfers</li> <li>• Energy Efficiency</li> <li>• Non-renewable Resources</li> <li>• Transferring Energy by heating</li> <li>• Heating homes</li> </ul>	KS3 Review Energy, Electricity, Energy names	Energy Key terms revisited	Cadent, Electrical / mechanical Engineer	<p><b>Assessment point 3</b> Genetics, Forces &amp; Motion, Forcefields, Evolution, Special Materials, Biological concepts</p>
	<p><b>Methods of Separation</b> 8</p>	<p>(Time allowing)</p> <ul style="list-style-type: none"> <li>• Mixtures</li> <li>• Filtration and Crystallisation</li> <li>• <b>WS PRACTICAL SEPARATION TECHNIQUES</b></li> <li>• Paper Chromatography</li> <li>• Distillation</li> <li>• <b>WS INVESTIGATING INKS</b> (2 lessons)</li> <li>• Drinking Water</li> </ul>	Year 7 Separating mixtures Particle model Pure substances and mixtures	<ul style="list-style-type: none"> <li>• Extended 6 mark answers – distillation</li> <li>• Devise an experiment</li> <li>• Compare and contrast</li> </ul>	Crystallographer	
	<p><b>Biological Transition</b> 5</p>	<ul style="list-style-type: none"> <li>• Genetic Engineering</li> <li>• Selective Breeding</li> <li>• Benefits and Risks</li> <li>• DNA Extraction</li> <li>• The Human Genome Project</li> </ul>	Year 9 Plant growth, Genetics topic	<p>Scientific Research – DNA discovery, human genome project</p> <p>Explicit instruction of keyterms</p>	<ul style="list-style-type: none"> <li>• Geneticist</li> <li>• Decision making skills</li> </ul>	