



**SUBJECT: SCIENCE**

Year Group	<b>YEAR 8</b>					
<b>Rationale</b>	<p>The year eight science course at St. Edmund Arrowsmith aims to build on the science content pupils have studied at key stage two and in year seven.</p> <p>Pupils will further develop their knowledge and understanding of the subject and continue to develop their practical skills.</p> <p>Students will carry out investigations, write scientifically and continue to explore the fundamental areas of science which include interdependence, disease, the reactions of metals and acids, electricity and waves.</p> <p>Pupils will also develop their knowledge and understanding of key scientific terminology, how to use their numeracy skills in science and the most effective ways to review and embed the knowledge and skills they have gained.</p>					
	<b>Autumn Term 1</b>	<b>Autumn Term 2</b>	<b>Spring Term 1</b>	<b>Spring Term 2</b>	<b>Summer Term 1</b>	<b>Summer Term 2</b>
	All pupils complete Physics Unit Two first, and then work through the other units in rotation during the course of the year. Pupils will study chemistry unit two during Y8 as they did not have the opportunity to study this content during the last academic year due to the national lockdown.					
<b>Topic/Unit</b>	<b>Physics Unit Two</b>	<b>Chemistry Unit Two</b>	<b>Physics Unit Three</b>	<b>Biology Unit Three</b>	<b>Chemistry Unit Three</b>	
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Series Circuits</li> <li>Parallel Circuits</li> <li>Current</li> <li>Potential Difference</li> <li>Conductors and Insulators</li> <li>Resistance</li> <li>Electrostatic Forces</li> <li>Magnetic Force</li> <li>Electromagnets</li> </ul>	<ul style="list-style-type: none"> <li>States of Matter</li> <li>Changes of State</li> <li>Mixtures</li> <li>Filtration</li> <li>Crystallisation</li> <li>Distillation</li> <li>Chromatography</li> <li>Earth's Atmosphere</li> <li>Global Warming</li> <li>Structure of the Earth</li> <li>Rocks &amp; the Rock Cycle</li> <li>Composites, Polymers &amp; Ceramics</li> </ul>	<ul style="list-style-type: none"> <li>Sound Waves</li> <li>Frequency of Sound Waves</li> <li>Electromagnetic Waves</li> <li>Reflection</li> <li>Refraction</li> <li>Colour</li> <li>Radioactivity</li> <li>Waves and Hazards</li> </ul>	<ul style="list-style-type: none"> <li>Variation</li> <li>Classification</li> <li>Food Chains &amp; Webs</li> <li>Pyramids of Biomass</li> <li>Quadrats &amp; Transects</li> <li>Adaptations of Animals &amp; Plants</li> <li>Micro-organisms &amp; Disease</li> <li>Defence against Disease</li> <li>Vaccination</li> </ul>	<ul style="list-style-type: none"> <li>Chemical and Physical Changes</li> <li>State Symbols</li> <li>Acids and Bases</li> <li>pH Scale</li> <li>Acid Rain</li> <li>Neutralisation</li> <li>Reactions of acids</li> <li>Exothermic and Endothermic Reactions</li> <li>Reactivity Series</li> <li>Displacement Reactions</li> </ul>	
<b>Skills</b>	<p>Pupils will be given the opportunity to investigate series and parallel circuits. Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate how the number of turns effects the strength of an electromagnet</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and evaluate their experiment, consid-</p>	<p>Pupils will be given the opportunity to investigate how to separate different mixtures using filtration, crystallisation and chromatography.</p> <p>Pupils will continue to develop their working Scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate how many dyes different inks contain.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display</p>	<p>Pupils will be given the opportunity to investigate sound and light waves.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate how materials affect energy transfer by radiation.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and evaluate their</p>	<p>Pupils will be given the opportunity to investigate how diseases spread and how to measure the distribution of organisms.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate the distribution of grass cover as you move away from a tree.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment,</p>	<p>Pupils will be given the opportunity to investigate the difference between acids and alkalis, the reactivity of different metals and the difference between endothermic and exothermic reactions.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate the temperature change when different metals react with acid.</p>	



	<p>ering whether their results are valid and why.</p> <p>Pupils will continue to use the key terms related to working scientifically.</p>	<p>their results, write a conclusion and evaluate their experiment.</p> <p>Pupils will continue to use the key terms related to working scientifically.</p>	<p>experiment, considering whether their results are valid and why.</p> <p>Pupils will continue to use the key terms related to working scientifically.</p>	<p>record and display their results, write a conclusion and evaluate their experiment, considering whether their results are valid and why.</p> <p>Pupils will continue to use the key terms related to working scientifically.</p>	<p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and evaluate their experiment, considering whether their results are valid and why.</p> <p>Pupils will continue to use the key terms related to working scientifically.</p>
<p><b>Assess-ments</b></p>	<p><b>1. Practical Write Up:</b> Pupils will carry out a practical investigation investigating how the number of turns effects the strength of an electromagnet, using criteria provided, produce a full written account of their experiment and their findings.</p> <p><b>2. End of Unit Test:</b> Physics Unit Two</p>	<p><b>1. Practical Write Up:</b> Pupils will carry out a practical investigation comparing different inks to see how many dyes they contain and then, using criteria provided, produce a full written account of their experiment and their findings.</p> <p><b>2. End of Unit Test:</b> Chemistry Unit Two</p>	<p><b>1. Practical Write Up:</b> Pupils will carry out a practical investigation to investigate how different materials affect energy transfer by radiation and then, using criteria provided, produce a full written account of their experiment and their findings.</p> <p><b>2. End of Unit Test:</b> Physics Unit Three</p>	<p><b>1. Practical Write Up:</b> Pupils will carry out a practical investigation using quadrats and a transect to measure the grass cover as you move away from a tree and then, using criteria provided, produce a full written account of their experiment and their findings.</p> <p><b>2. End of Unit Test:</b> Biology Unit Three</p>	<p><b>1. Practical Write Up:</b> Pupils will carry out a practical investigation comparing the temperature rise for the reactions of different metals and then, using criteria provided, produce a full written account of their experiment and their findings.</p> <p><b>2. End of Unit Test:</b> Chemistry Unit Three</p>