

# St Cuthbert Mayne School Curriculum Map 2023-2024



**Department: Science**

**Year 10**

**Department Intent and overview**  
Developing Scientists of the future  
**Key Stage 4 Curriculum Summary**  
Building on the fundamental concepts of Science

## ***Autumn Term 1***

<b>Topic/Unit</b>	<b>Bonding and Structure</b>	<b>Electricity</b>
<b>Knowledge (Content covered)</b>	<ul style="list-style-type: none"><li>• Ionic bonding and the properties of ionic compounds</li><li>• Covalent bonding and the properties of covalent compounds</li><li>• Metallic bonding and the properties of metallic compounds</li></ul>	<ul style="list-style-type: none"><li>• Current potential difference and resistance</li><li>• Series and parallel circuits</li><li>• Domestic use and safety</li><li>• Energy Transfers</li></ul>

<b>Skills</b>	Grasping scientific concepts which we cannot see.	Carrying out complex practical work safely. Following scientific methods
<b>Assessment</b>	Re-and Post progress check multiple choice, 2x DIRT tasks	Re-and Post progress check multiple choice, 2x DIRT tasks
<b>Gatsby 4 (Linking curriculum learning to careers)</b> <a href="#">GATSBY BENCHMARK 4</a>	Chemical Engineer	Electrical engineer

### *Autumn Term 2*

<b>Topic/Unit</b>	Magnetism	Bioenergetics
<b>Knowledge (Content covered)</b>	<ul style="list-style-type: none"> <li>● Magnetism</li> <li>● Magnetic fields</li> <li>● Electromagnets</li> <li>● Electric motors</li> <li>● Fleming's Left Hand Rule</li> </ul>	<ul style="list-style-type: none"> <li>● Photosynthesis</li> <li>● Aerobic Respiration</li> <li>● Anaerobic respiration</li> <li>● Metabolism</li> </ul>
<b>Skills</b>	Using experimental techniques to prove a scientific hypothesis	Deepening understanding of key biological concepts Following experimental methods safely
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
<b>Gatsby 4 (Linking curriculum learning to careers)</b> <a href="#">GATSBY BENCHMARK 4</a>	Mechanical Engineer	Biochemist

### *Spring Term 1*

<b>Topic/Unit</b>	Rate and the extent of chemical change	Energy
<b>Knowledge (Content covered)</b>	Calculating rates Investigating temperature Investigating surface area Investigating temperature Catalysts	Energy Transfer Kinetic energy Gravitational potential energy Elastic potential energy
<b>Skills</b>	Carrying out complex practical work safely. Following scientific method	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT, end of unit assessment
<b>Gatsby 4 (Linking curriculum learning to careers)</b> <a href="#">GATSBY BENCHMARK 4</a>	Pharmacologist	Energy Engineer

### *Spring Term 2*

<b>Topic/Unit</b>	Homeostasis and response	Quantitative Chemistry
<b>Knowledge (Content covered)</b>	The nervous system The reflex arc Blood glucose levels The menstrual cycle Contraception	Relative formula mass Calculating limiting reactants Calculating concentrations
<b>Skills</b>	Deepening understanding of key biological concepts Following experimental methods safely	Enhancing Mathematics in Science
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT ,

		end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) <a href="#">GATSBY BENCHMARK 4</a>	Biomedical scientist	Pharmacist

### *Summer Term 1*

<b>Topic/Unit</b>	Chemical Changes
<b>Knowledge (Content covered)</b>	<ul style="list-style-type: none"> <li>● Formation of metal oxides</li> <li>● Reactivity series</li> <li>● Metals and acids</li> <li>● Displacement</li> <li>● Neutralisation</li> <li>● Electrolysis</li> </ul>
<b>Skills</b>	Carrying out complex practical work safely. Following scientific methods
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) <a href="#">GATSBY BENCHMARK 4</a>	Chemist

### *Summer Term 2*

<b>Topic/Unit</b>	Using Resources
<b>Knowledge (Content covered)</b>	Water purification Recycling

<b>Skills</b>	Relating science to the real world Following experimental methods safely
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
<b>Gatsby 4 (Linking curriculum learning to careers)</b> <a href="#">GATSBY BENCHMARK 4</a>	Environmental Scientist