

# St Cuthbert Mayne School Curriculum Map 2021-2022



**Department: Science**

**Year 11**

**Department Intent and overview**

Developing Scientists of the future

**Key Stage 4 Curriculum Summary**

Building on the fundamental concepts of Science

***Autumn Term 1***

Topic/Unit	Chemical Changes	Ecology
Knowledge (Content covered)	<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></ul>	<ul style="list-style-type: none"><li>• Classification</li><li>• Adaptation</li><li>• The carbon cycle</li><li>• The water cycle</li><li>• Sampling</li><li>• Biodiversity</li><li>• Deforestation</li><li>• Global warming</li></ul>

	<ul style="list-style-type: none"> <li>Electrolysis</li> </ul>	
<b>Skills</b>	Carrying out complex practical work safely. Following scientific methods	Applying theory to investigate current environmental issues Linking mathematical understanding to scientific scenarios
<b>Assessment</b>	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	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>	Chemist	Ecologist

### *Autumn Term 2*

<b>Topic/Unit</b>	Quantitative Chemistry	Waves	Chemical Analysis
<b>Knowledge (Content covered)</b>	<ul style="list-style-type: none"> <li>Relative formula mass</li> <li>Concentration equation</li> <li>Atom economy</li> <li>Moles</li> <li>Avogadro's constant</li> </ul>	Types of wave Calculating waves The electromagnetic spectrum	Gas tests
<b>Skills</b>	Linking mathematical understanding to scientific scenarios	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science
<b>Assessment</b>	Re-and Post progress check multiple choice, 2x DIRT tasks	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>	Pharmacologist	Audiologist	Analytical Chemist

[GATSBY BENCHMARK 4](#)

**Spring Term 1**

Topic/Unit	Forces	Organic Chemistry
<b>Knowledge (Content covered)</b>	Scalar and vector quantities Resolving forces Speed Velocity Acceleration	<ul style="list-style-type: none"><li>● Crude oil</li><li>● Alkanes</li><li>● Fractional distillation</li><li>● Cracking</li><li>● Alkenes</li><li>● Polymers</li></ul>
<b>Skills</b>	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science	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	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>	Automotive engineer	Chemist

### *Spring Term 2*

<b>Topic/Unit</b>	Rate and the extent of chemical change	Inheritance variation and evolution
<b>Knowledge (Content covered)</b>	Calculating rates Investigating temperature Investigating surface area Investigating temperature Catalysts	DNA Genes Punnett Squares Sex inheritance Classification
<b>Skills</b>	Carrying out complex practical work safely. Following scientific method	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>	Pharmacologist	Geneticist

### *Summer Term 1*

<b>Topic/Unit</b>	Revision and exam preparation	
<b>Knowledge (Content covered)</b>		
<b>Skills</b>		
<b>Assessment</b>	GCSE examinations	
<b>Gatsby 4 (Linking curriculum learning to careers)</b> <a href="#">GATSBY BENCHMARK 4</a>		

## Summer Term 2

Topic/Unit	Revision and exam preparation
Knowledge (Content covered)	
Skills	
Assessment	GCSE examinations
Gatsby 4 (Linking curriculum learning to careers) <a href="#">GATSBY BENCHMARK 4</a>	