



# Year 13 Chemistry



What have students at St. Crispin's been taught to understand and be able to do?

Core Knowledge	Core Skills
<p><b>Module 5: Physical chemistry and transition elements</b></p> <p>The content within this module assumes knowledge and understanding of the chemical concepts developed in Module 2: Foundations in chemistry and Module 3: Periodic table and energy.</p> <p>This module extends the study of energy, reaction rates and equilibria, and the periodic table.</p> <p>The main areas of physical chemistry studied include:</p> <ol style="list-style-type: none"><li>1. rate equations, orders of reaction, the rate-determining step</li><li>2. equilibrium constants, <math>K_c</math> and <math>K_p</math></li><li>3. acid-base equilibria including pH, <math>K_a</math> and buffer solutions</li><li>4. lattice enthalpy and Born-Haber cycles</li><li>5. entropy and free energy</li><li>6. electrochemical cells.</li></ol> <p>The main areas of inorganic chemistry studied include:</p> <ol style="list-style-type: none"><li>1. redox chemistry</li><li>2. transition elements.</li></ol> <p><b>Module 6: Organic Chemistry and analysis</b></p> <p>The content within this module assumes knowledge and understanding of the chemical concepts developed in Module 2: Foundations in chemistry and Module 4: Core organic Chemistry.</p> <p>This module introduces several new functional groups and emphasises the importance of organic synthesis. This module also adds NMR spectroscopy to the instrumentation techniques used in organic and forensic analysis.</p>	<p><b>Module 1 - Development of practical skills in Chemistry</b></p> <p>Practical skills assessed in a written examination</p> <p>Practical skills assessed in the practical endorsement.</p> <p>Chemistry is a practical subject and the development of practical skills is fundamental to understanding the nature of Chemistry. Chemistry A-Level gives learners many opportunities to develop the fundamental skills needed to collect and analyse empirical data. Skills in planning, implementing, analysing and evaluating, as outlined in 1.1, will be assessed in the written papers.</p> <p>Practical activities are embedded within the learning outcomes of the course to encourage practical activities in the classroom which contribute to the achievement of the Practical Endorsement (Section 5) as well as enhancing learners' understanding of chemical theory and practical skills.</p>



## Year 13 Chemistry continued



**What have students at St. Crispin's been taught to understand and be able to do?**

The main areas of organic Chemistry studied include:

1. aromatic compounds
2. carboxylic acids and esters
3. organic nitrogen compounds: amines and amino acids
4. polymerisation: addition polymers and condensation polymers
5. synthetic organic chemistry and further development of practical skills
6. the importance of modern analytical techniques in organic analysis.

**How has learning been assessed?**

Students will complete regular chapter tests. This develops writing ability and helps to identify gaps in knowledge

Students will also complete a summative written mock exam twice a year.

**What is coming up in the following year?**

Many students will use their A-Level Chemistry to gain entry into University courses studying Chemistry, chemical engineering and other related courses such as Medicine and Veterinary which require an understanding of Chemistry.