

# CHEMISTRY

## WHAT TYPE OF SUBJECT IS CHEMISTRY?

Chemistry is the study of materials and their properties and structure. Students study atomic theory, chemical bonding, and the structure and properties of elements and compounds. They explore intermolecular forces, gases, aqueous solutions, acidity and rates of reaction. They study equilibrium processes and redox reactions. They explore organic chemistry, synthesis and design to examine the characteristic chemical properties and chemical reactions displayed by different classes of organic compounds.

Students develop their appreciation of chemistry and its usefulness; understanding of chemical theories, models and chemical systems. They will also develop their expertise in conducting scientific investigations. They critically evaluate and debate scientific arguments and claims in order to solve problems and generate informed, responsible and ethical conclusions, and communicate chemical understanding and findings through the use of appropriate representations, language and nomenclature.

Students learn and apply aspects of the knowledge and skills of the discipline (thinking, experimentation, problem-solving and research skills), understand how it works and how it may impact society.

## PATHWAYS

A course of study in Chemistry can establish a basis for further education and employment in the fields of forensic science, environmental science, engineering, medicine, pharmacy and sports science.

## OBJECTIVES

By the conclusion of the course of study, students will:

- describe and explain scientific concepts, theories, models and systems and their limitations
- apply understanding of scientific concepts, theories, models and systems within their limitations
- analyse evidence
- interpret evidence
- investigate phenomena
- evaluate processes, claims, and conclusions
- communicate understandings, findings, arguments, and conclusions

## STRUCTURE

Unit 1	Unit 2	Unit 3	Unit 4
<b>Chemical Fundamentals: Structure, Properties &amp; Reactions</b>	<b>Molecular Interactions &amp; Reactions</b>	<b>Equilibrium, Acids &amp; Redox Reactions</b>	<b>Structure, Synthesis &amp; Design</b>
Properties & Structure of Atoms	Intermolecular Forces & Gases	Chemical Equilibrium Systems	Properties & Structure of Organic Materials
Properties & Structure of Materials	Aqueous Solutions & Acidity	Oxidation & Reduction	Chemical Synthesis & Design
Chemical Reactions - Reactants, Products & Energy Change	Rates of Chemical Reactions		

## ASSESSMENT

In Units 1 and 2, all assessment is formative. However, the assessment in Units 3 and 4 will model that which students will encounter in Units 3 and 4. In Units 3 and 4 students complete four summative assessments. The results from each of the assessments are added together to provide a subject score out of 100. Students will also receive an overall subject result (A – E).

Unit 3		Unit 4	
Summative Internal Assessment 1 (IA1): Data Test	10%	Summative Internal Assessment 3 (IA3): Research Investigation	20%
Summative Internal Assessment 2 (IA2): Student Experiment	20%	Summative External Assessment (EA): Examination	50%