

# CHEMISTRY

**Entry Requirements:** Grade 6,6 in Combined Science GCSE or if you have studied the Sciences separately, Grade 6 in at least two, including Chemistry. Plus a Grade 5 in GCSE Maths.

**Exam board:** OCR

**Full Subject Specification website:** <http://www.ocr.org.uk/qualifications/as-a-level-gce-chemistry-a-h032-h432-from-2015/>

## Why study Chemistry:

Chemistry is everywhere in the world around you! It's in the food you eat, clothes you wear, water you drink, medicines, air, cleaners... you name it. Chemistry sometimes is called the "central science" because it connects the sciences to each other, such as Biology, Physics, Geology and Environmental Science. But why study at Stratford upon Avon School?

In Chemistry at Stratford we firmly believe in the PiXL method to making progress. Throughout the year students undergo continual diagnosis, therapy and testing. In diagnosis, areas for improvement are identified, whether this be through dialogue in lesson or more formal assessments. Once weaknesses have been identified therapy can take place. This involves afterschool revision sessions, opportunities to drop-in to teachers at lunch time or in free periods and the availability of resources that can be accessed online to develop the independent learner. Finally, we ensure that the student has progressed in the identified areas through further assessment with past paper questions.

## Subject Specification Outline:

This specification consists of six modules:

**1. Development of practical skills in Chemistry:** Chemistry is a practical subject and the development of practical skills is fundamental to understanding the nature of Chemistry. Chemistry gives learners many opportunities to develop the fundamental skills needed to collect and analyse empirical data.

Practical skills are embedded throughout all modules in this specification.

Learners will be required to develop a range of practical skills throughout the course in preparation for the written examinations.

**2. Foundations in Chemistry:** this module acts as an important bridge into A level Chemistry from the study of chemistry within science courses at GCSE level.

The importance of these basic chemical concepts is seen as a prerequisite for all further chemistry modules.

This module allows learners to develop important quantitative techniques involved in measuring masses, gas and solution volumes, including use of volumetric apparatus.

**3. Periodic table and energy:** the focus of this module is inorganic and physical chemistry, the applications of energy use to everyday life and industrial processes, and current environmental concerns associated with sustainability.

This module allows learners to develop important qualitative practical skills, especially observational skills required for analysis, and accurate quantitative techniques involved in determination of energy changes and reaction rates.

There are opportunities for developing mathematical skills when studying enthalpy changes and reaction rates and when carrying out quantitative practical work

**4. Core Organic Chemistry:** the module provides learners with a knowledge and understanding of the important chemical ideas that underpin the study of organic chemistry.

This module also provides learners with an opportunity to develop important organic practical skills, including use of Quickfit apparatus for distillation, heating under reflux and purification of organic liquids.

**5. Physical Chemistry and transition elements:** this module extends the study of energy, reaction rates and equilibria, and the periodic table. This module provides a context for synoptic assessment and the subject content links strongly with the content encountered in Module 2: Foundations in chemistry and Module 3: Periodic table and energy.

**6. Organic Chemistry and analysis:** 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. This module provides a context for synoptic assessment and the subject content links strongly with the content encountered in Module 2: Foundations in chemistry and Module 4: Core organic chemistry.

## Progress Assessment:

- Regular homework tasks of past exam questions
- In class diagnoses at the end of each topic (on average once a fortnight)
- Required practical activities (12 across the two years)
- Ongoing ½ termly progress test assessments, including whole past paper mocks.

## Self Study Requirements:

To complete an hour of work outside of lesson for each hour taught in school. This is to compliment and embed work throughout the year and identify problems as and when they arise. These may take the form of consolidating notes, answering exam questions, reading around the subject or revising for upcoming progress tests.

## Final Exam Format:

Content Overview	Assessment Overview	
Content is split into six teaching modules:	Periodic table, elements and physical chemistry (01)	37%
• Module 1 – Development of practical skills in chemistry	100 marks	of total A level
• Module 2 – Foundations in chemistry	2 hours 15 minutes written paper	
• Module 3 – Periodic table and energy	Synthesis and analytical techniques (02)	37%
• Module 4 – Core organic chemistry	100 marks	of total A level
• Module 5 – Physical chemistry and transition elements	2 hours 15 minutes written paper	
• Module 6 – Organic chemistry and analysis	Unified chemistry (03)	26%
Component 01 assesses content from modules 1, 2, 3 and 5.	70 marks	of total A level
Component 02 assesses content from modules 1, 2, 4 and 6.	1 hour 30 minutes written paper	
Component 03 assesses content from all modules (1 to 6).	Practical endorsement in chemistry (04)	Reported separately (see Section 5)

## Progression Pathways:

Chemistry complements the study of other Science subjects well. There are common themes shared with Biology and some concepts in Physics that are useful for understanding Chemistry. In addition, the style of assessment has similarities (such as completing required practicals and keeping a lab book). Maths may also help in your studies of Chemistry and if you are thinking of taking Chemistry further it is a requirement for entry to some degree courses.

A level Chemistry is a challenging and academically rigorous subject that will impress employers and universities alike in all future pathways. It is a requirement for almost all medical schools and also for veterinary medicine. A level Chemistry can lead to degrees and careers in healthcare including pharmacy and dentistry. It is also useful for reading Law as it shows you can understand challenging topics.