



A-LEVEL CHEMISTRY

TOGETHER WE SUCCEED
ACHIEVEMENT ASPIRATION HIGH EXPECTATIONS COMMUNITY

A-LEVEL CHEMISTRY

EXAM BOARD: AQA

Aims of the course:

The course is designed to encourage students to understand the key concepts of chemistry by using hands-on practical skills and data analysis skills. Students will learn to appreciate how science works and its relevance beyond the laboratory. It will also encourage students to develop an enthusiasm for chemistry through independent study and allow them to demonstrate their synoptic understanding of chemistry in a contemporary context.

Programme of Study at Year 1:

Content

- Physical chemistry - Atomic structure, Amount of substance, Bonding, Energetics, Kinetics, Chemical equilibria, Redox
- Inorganic chemistry - Periodicity, Group 2 and Group 7 chemistry
- Organic chemistry - Alkanes, Halogenoalkanes, Alkenes, Alcohols, Organic analysis

Programme of Study at Year 2:

Content – everything from Year 1, plus...

- Physical chemistry - Thermodynamics, Rate equations, Equilibrium constants, Electrode potentials, Acid and bases
- Inorganic chemistry - Properties of period 3 elements and oxides, Transition metals, Reactions of ions in aqueous solution
- Organic chemistry - Optical isomerism, Aldehydes, Ketones, Carboxylic acids and derivatives, Aromatic chemistry, Amines, Polymers, Amino acids, Proteins, DNA, NMR

Assessment for A Level Chemistry:

The final grade will be calculated from three exam papers which will take place in June of Year 13 and will cover all the material from across the two years of study. Students will also be assessed on their practical skills throughout the two years.

Paper 1 – All inorganic chemistry, some physical chemistry and practical skills
(35% of A2: 105 marks)

Paper 2 – All organic chemistry, some physical chemistry and practical skills
(35% of A2: 105 marks)

Paper 3 – Any content, any practical skills
(30% of A2: 90 marks)

Approaches to Learning:

The practical nature of the subject will require students to participate in experimental study and analysis on a regular basis. Critical analysis will require use of mathematics, whether working individually or in groups, as well as organisational skills. Independent study will also be encouraged to allow additional research of how science works application, as well as extending class learning.

This course is for you if you have a high level of interest in Chemistry and have an enthusiasm for practical work as an individual or part of a team. The course also requires good mathematical skills and a high level of commitment and organisational skills.

This course will prepare you for most medical and technological research careers e.g. Medicine, Pharmacy, Dentistry, Veterinary Science, Forensic Science, Environmental Science, Materials Science, Pharmacology, Physiotherapy, Sports Science, Food Technology, Industrial/Manufacturing Chemistry, Chemical Engineering just to name a few. The course will also equip you strong analytical skills which can be applying in sectors such as Business, Law and Finance.

Minimum Entry Requirements:

Five grade 9-5 GCSE passes including English and Maths. You are required to have a 9-6 in Maths. In addition to this you must also have a 6-6 in Double Science (Trilogy) or a 6 in Chemistry.

STEP-UP INDEPENDENT STUDY TASKS

How will the tasks support your understanding of the course?

By completing this work you will begin to gain an understanding of two of the key themes that run throughout every topic of the syllabus.

What skills will you begin to develop by completing this work?

The first task will help you develop fundamental skills including mathematical competency, which makes up 20% of A Level chemistry, and then deducing chemical formula and balancing equations. During the second task you will apply the fundamental skills from the first task in calculating the amount of substances area and atom economy.

Task 1 - Fundamental Skills for Chemistry

It is important you are confident using in standard form, significant figures, decimal places and performing unit conversions alongside being able to determine chemical formula and balance equations. Complete the question booklet to practice these skills.

The question booklet is [HERE](#)

Support

[AQA | Maths skillsbriefings for A-level sciences](#)

<https://www.my-gcsescience.com/tips-writing-chemical-formulae/>

<https://www.my-gcsescience.com/balancing-chemical-equations/>

Task 2 - Application of Skills to Chemical Problems

In chemistry an important skill is being able to apply your mathematical skills to solve chemical problems. An example is rearranging equations and balancing equations to calculate Purpose - amount of substance or moles is a fundamental of all chemistry topics. In chemistry, you sometimes need to rearrange/change the subject of an equation to find the desired values then determine percentage yield and atom economy, using the steps described on the worksheet.

Support

Save my Exams: [Percentage Yield & Atom Economy - A Level Chemistry](https://www.savemyexams.com/a-level-chemistry/percentage-yield-and-atom-economy/)

https://docbrown.info/page04/4_73calcs14other2a.html

TO DEEPEN YOUR UNDERSTANDING

https://www.sciencejournalforkids.org/scientific-field/chemistry/?sft_reading_level=middle-school

Seneca learn www.senecalearning.com class code **o4aub3ch5m** GCSE

Issac physics www.isaacphysics.org class code **2LYJMH** A level

COMPLETED TASK

Student Name			
Subject Teacher		Date:	
Form Tutor:		Date:	