

Chemistry A Level

Exam Board: AQA

Subject Specific Criteria:

- Grade 5 in GCSE Mathematics
- Grade 6,6 in combined Science/Triple Chemistry

What is A level Chemistry?

Chemistry is fundamentally an experimental subject. The A level AQA specification provides numerous opportunities to use practical experiences to link theory to reality, and equip pupils with the essential practical skills they need. A-level Chemistry provides a solid foundation for a wide range of careers, including medicine, pharmacy, engineering, and scientific research.

The AQA a level Chemistry course is split into 3 distinct topics; Organic, Inorganic and Physical Chemistry, therefore a wide range of skills are needed and also will be taught over the 2 years of study.

Assessment:

There are 3 papers for A level Chemistry. Exams include: specified content tested in each of the first two papers to help students prepare for their exams; a variety of assessment styles so students can confidently engage with the questions; multiple choice questions, which allow for a wide breadth of the chemistry from the specifications to be tested.

Paper 1: Physical and inorganic

Written examination: 2 hours

35% of qualification

Paper 2: Physical and organic

Written examination: 2 hours

35% of qualification

Paper 3: Practical skills (any content)

Written examination: 2 hours

30% of qualification

Subject Enrichment:

- Use of practical techniques in preparation for University or industry
- University visits

- Use the periodic table as the starting point for thinking
- Visualise physical and chemical processes
- Manipulate mathematical equations
- Relate observable phenomena to underlying concepts
- Write logical explanations without repetition or contradiction
- Analytical/critical thinking

Course Information:

A level chemistry is divided into 3 sub sections; organic, physical and inorganic chemistry. The following topics are covered.

Physical chemistry
3.1.1 Atomic structure
3.1.2 Amount of substance
3.1.3 Bonding
3.1.4 Energetics
3.1.5 Kinetics
3.1.6 Chemical equilibria, Le Chatelier's principle and K _c
3.1.7 Oxidation, reduction and redox equations
3.1.8 Thermodynamics
3.1.9 Rate equations
3.1.10 Equilibrium constant K _p for homogeneous systems
3.1.11 Electrode potentials and electrochemical cells
3.1.12 Acids and bases
Inorganic chemistry
3.2.1 Periodicity
3.2.2 Group 2, the alkaline earth metals
3.2.3 Group 7(17), the halogens
3.2.4 Properties of Period 3 elements and their oxides
3.2.5 Transition metals
3.2.6 Reactions of ions in aqueous solution
Organic chemistry
3.3.1 Introduction to organic chemistry
3.3.2 Alkanes
3.3.3 Halogenoalkanes
3.3.4 Alkenes
3.3.5 Alcohols
3.3.6 Organic analysis
3.3.7 Optical isomerism
3.3.8 Aldehydes and ketones
3.3.9 Carboxylic acids and derivatives
3.3.10 Aromatic chemistry
3.3.11 Amines
3.3.12 Polymers
3.3.13 Amino acids, proteins and DNA
3.3.14 Organic synthesis
3.3.15 Nuclear magnetic resonance spectroscopy
3.3.16 Chromatography

Future Opportunities:

Studying A level Chemistry helps with critical thinking and analytical thinking skills, relevant for all employment. Pupils who study A level Chemistry typically start University courses or apprenticeships in the following fields:

- Engineering
- Science and research
- Medical and healthcare
- Energy and Utilities
- Fast consumer goods
- Manufacturing

Skills Required: