

Chemistry A Level

Exam Board: AQA

Subject Specific Criteria:

Grade 6,6 in GCSE Combined Science/Triple Chemistry
Grade 6 in GCSE Mathematics

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

Skills Required:

- 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