

Chemistry

Examination Board: AQA (7405)

GCSE Required: Grade B in 2 Science subjects
(Core & additional science or
Chemistry and one other)

Skills: Practical & investigative

Further details can be found by scanning this QR code:



What is covered in the course:

Physical chemistry

Atomic structure

Amount of substance

Bonding

Energetics

Kinetics

Chemical equilibria and Le Chatelier's principle

Oxidation, reduction and redox equations

Thermodynamics

Rate equations

Equilibrium constant K_c for homogeneous systems

Electrode potentials and electrochemical cells

Acids and bases

Inorganic chemistry

Periodicity

Group 2, the alkaline earth metals

Group 7(17), the halogens

Properties of Period 3 elements and their oxides

Transition metals

Reactions of ions in aqueous solution

Organic chemistry

Introduction to organic chemistry

Alkanes

Halogenoalkanes

Alkenes

Alcohols

Organic analysis

Optical isomerism

Aldehydes and ketones

Carboxylic acids and derivatives

Aromatic chemistry

Amines

Polymers

Amino acids, proteins and DNA

Organic synthesis

Nuclear magnetic resonance spectroscopy

Chromatography

How will the subject be taught:

Teachers will facilitate the learning of the students by motivating and encouraging them and providing a stimulating learning environment. In this way we hope to develop attitudes such as enquiry, initiative, precision and insight.

All of the teaching resources and supporting material are available on the Arden VLE. In addition to revision resources, lesson work and homework all topics include pre-learning work that should be completed prior to lesson. This approach enables pupils to become familiar with key terms, definitions and concepts before the lesson.

Practical lessons will now become a more central part of the course with students being continually assessed and developed during the course to a university standard of practical ability. This practical work will take the form of projects and a wide variety of written work, presentations, calculations, problem solving and data handling. Students will build a portfolio of evidence to submit to the exam board based on their practical work and the final examinations will have a high proportion of practical based assessment.

What opportunities come with this subject:

From the moment we are born, and throughout our life, we are surrounded by chemistry - it is the air we breathe, the food we eat and the clothes we wear. As a chemist you could:

- Make a medicine to fight cancer or HIV
- Develop exciting new ice-cream flavours
- Make new materials for computers or mobile phones

Chemistry is all about:

- Discovery
- Creativity
- Problem solving
- Communication

Higher Education/Career Implications:

Chemistry 'A' level can get you in to a variety of degree courses from marine chemistry to chemical engineering, food chemistry to neurochemistry, environmental chemistry to biological chemistry, pharmaceutical sciences and beyond. It is an essential requirement for entry to a degree in Medicine, Dentistry and Veterinary Science. Careers range from the more traditional laboratory-based work through to photography, art restoration and music technology.