

Chemistry

Examination Board: AQA (7405)

GCSE Required: Triple Science: Grade 6 in
Chemistry & one other
Science/Combined
Grade 6-6
Skills: Practical & investigative

Further details can be found by scanning this QR code:



Or visit <http://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-7404-7405-SP-2015.PDF>

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 website Google sites. In addition to revision resources, lesson work and homework all topics include pre-learning tasks 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 have 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:

- Create a drug 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.