

# Chemistry A Level



**Exam Board:** AQA

**Entry requirements:** Grade 5 in Maths GCSE, Grade 4 in English GCSE and two Grade 6s in Science GCSE to include Chemistry or Combined Science

## Intent

### Structure

The AQA A Level Chemistry course has been developed to follow on from the Combined Double and Separate GCSE Chemistry courses. It will develop candidate's knowledge and understanding providing a pathway to further study in a wide variety of subject areas. It covers a wide range of different topics from the physical structure of substances and the atoms and molecules from which they are formed, to the ways in which these substances interact.

Chemistry is leading the way in a number of exciting areas of technological development, from more efficient uses/types of fuels to the development of new materials to be used in further exploration of the Universe and life saving medical procedures. Our understanding of the chemistry behind various aspects of Climate Change is vital to our chances of dealing with perhaps the biggest threat to the environment in human history. Science subjects open up a wide range of future careers choices. Chemistry combines well with a wide range of other subjects, especially Biology, Physics, Mathematics, Geography, Psychology and PE.

## Implementation

### Content & Sequencing

A level is broken down into three major sections: Physical chemistry which looks the fundamental structure of atoms and mathematical analysis. Inorganic chemistry which is the study of the elements of the periodic table and its trends and Organic chemistry which looks at the complex chemistry of carbon and living things.

#### Year 1 Study:

##### Physical chemistry

Atomic structure · Amount of substance · Bonding · Energetics · Kinetics · Chemical equilibria, Le Chatelier's principle and  $K_c$  · Oxidation, reduction and redox equations

##### Inorganic Chemistry

· Periodicity · Group 2, the alkaline earth metals · Group 7 (17), the halogens

##### Organic Chemistry

Introduction to organic chemistry · Alkanes · Halogenoalkanes · Alkenes · Alcohols · Organic analysis

#### Year 2 Study:

##### Physical chemistry

Thermodynamics · Rate equations · Equilibrium constant  $K_p$  for homogeneous systems · Electrode potentials and electrochemical cells · Acids and bases

##### Inorganic chemistry

Properties of Period 3 elements and oxides · Transition metals · Reactions of ions in aqueous solution

##### Organic chemistry

Optical isomerism · Aldehydes and ketones · Carboxylic acids and derivatives · Aromatic chemistry · Amines · Polymers · Amino acids, proteins and DNA · Organic synthesis · NMR spectroscopy · Chromatography

## Assessment Methods

The assessment for the A-level consists of three exams

Paper 1	Paper 2	Paper 3
<b>What's assessed</b> <ul style="list-style-type: none"><li>Relevant Physical chemistry topics (sections 3.1.1 to 3.1.4, 3.1.6 to 3.1.8 and 3.1.10 to 3.1.12)</li><li>Inorganic chemistry (section 3.2)</li><li>Relevant practical skills</li></ul>	<b>What's assessed</b> <ul style="list-style-type: none"><li>Relevant Physical chemistry topics (sections 3.1.2 to 3.1.6 and 3.1.9)</li><li>Organic chemistry (section 3.3)</li><li>Relevant practical skills</li></ul>	<b>What's assessed</b> <ul style="list-style-type: none"><li>Any content</li><li>Any practical skills</li></ul>
<b>How it's assessed</b> <ul style="list-style-type: none"><li>Written exam: 2 hours</li><li>105 marks</li><li>35% of A-level</li></ul>	<b>How it's assessed</b> <ul style="list-style-type: none"><li>Written exam: 2 hours</li><li>105 marks</li><li>35% of A-level</li></ul>	<b>How it's assessed</b> <ul style="list-style-type: none"><li>Written exam: 2 hours</li><li>90 marks</li><li>30% of A-level</li></ul>
<b>Questions</b> <ul style="list-style-type: none"><li>105 marks of short and long answer questions</li></ul>	<b>Questions</b> <ul style="list-style-type: none"><li>105 marks of short and long answer questions</li></ul>	<b>Questions</b> <ul style="list-style-type: none"><li>40 marks of questions on practical techniques and data analysis</li><li>20 marks of questions testing across the specification</li><li>30 marks of multiple choice questions</li></ul>





## Impact

### Onward Progression

Chemistry is essential for a large number of careers including medicine, pharmacy, veterinary science and dentistry. Students could also progress into careers in pharmaceuticals, food technology, manufacturing, petrochemicals, journalism and publishing, sales, forensics and teaching. Chemistry helps you to develop research, problem solving and analytical skills. It helps to you challenge ideas as well as working out solutions through logic and step-by-step reasoning. This subject also often requires teamwork and communication skills too, which are useful when working on projects. Useful websites to research careers and wider progression options could include The Royal Society of Chemistry, Chemistry World, All About Careers and The Apprenticeship Guide.

### Further information contact

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