

# CHEMISTRY

## Why study Chemistry?

Chemistry is and always has been fundamental to life – some current challenges it addresses includes:

- evaluating the reactions that can be used to power our cars;
- selecting what chemicals to use in new smartphone batteries;
- deciding how to produce polymers with desirable properties,
- considering how to minimise human impacts on the atmosphere;
- designing new medicines and in countless other situations.

If you have enjoyed studying Chemistry at GCSE, you will find that A-Level develops some of the topics you enjoyed in three key areas:

- Organic Chemistry – the study of molecules made from carbon chains (e.g. hydrocarbons, alcohols, polymers and biological molecules);
- Inorganic Chemistry – the reactions of much of the periodic table (e.g. groups 1, 7 and 0, the transition elements, reactions of acids);
- Physical Chemistry – linking Chemistry and Physics (e.g. atomic and electronic structure, energy changes, electrolysis and rate of reaction).

Integral to studying Chemistry at A-Level is the development of a wide range of skills which are highly prized in further education and employment, including:

- planning, carrying out and completing practical activities safely;
- analytical skills, through use of experimental observations and other relevant data to reach conclusions about reactions;
- completing activities independently and as a part of group;
- using different models to understand what is happening at microscopic and macroscopic levels;
- application of mathematics to a range of real-life contexts.

## Where does it lead?

With an A Level in Chemistry you could continue to study Chemistry or Chemical Engineering at university. There are also many related courses which require or highly recommend Chemistry, such as: Medicine, Veterinary Science, Pharmacy, Engineering and other Science subjects.

## Course Content

A-Level Chemistry covers a wide range of topics, which deal with key concepts in Chemistry and applying these to real-world applications, including:

- the occurrence and properties of elements and compounds;
- hydrocarbon fuels and measuring the energy released from them;
- extracting chemicals from sea water, their properties and uses;
- the chemical processes in the atmosphere;
- the development, structure and analysis of medicines;
- how industrial chemical processes are carried out;
- development of polymers (including DNA and proteins);
- the chemical processes in the oceans;
- the properties and reactions of the transition metals;
- developing synthetic dyes from simple hydrocarbons.

## Course Assessment

A-Level Chemistry is assessed through three exams and a total of 6 hours assessment. Assessment includes multiple choice questions, shorter and longer written questions. There are a significant proportion of questions requiring mathematical skills (20%).

The Practical Endorsement is reported in addition to your final grade. It is a pass / fail grade based on competence shown in particular skill areas, with certain pieces of equipment, experiments and types of analysis over the course of the A-Level.

**For further information,  
please contact Dr Ovens**