



SIXTH FORM

# Chemistry

EDEXCEL  
AS 8CH01  
A2 9CH01



## **WHY CHOOSE CHEMISTRY?**

Chemistry is all around us. It has to do with materials of every description – animal, vegetable or mineral – what they are made of and how they behave.

On the one hand chemistry is involved with manufactured goods materials of all kinds, from paper and plastics to fuel and fertilisers, from bricks and mortar to iron and steel; on the other hand it is concerned with the processes of living things, be they beech trees, barnacles or babies.

## **HOW USEFUL WILL IT BE?**

Chemistry is often called the central science; as a result it is a valued subject in a wide range of higher education courses and careers.

As well as its links with all the other sciences such as physics, geology, astronomy, biology and psychology, it also underlies many branches of technology from the 'high tech' sophistication of atomic energy or the silicon chip to construction and brewing.

## **WHAT WILL YOU NEED TO DO TO BE SUCCESSFUL?**

To study this subject you will need a minimum of five GCSE subjects at Grade A\*-C. To be successful in A Level Chemistry you must have commitment, the ability to work hard, an interest in this subject and in science in general. Students require a minimum of BB in GCSE Science and B in GCSE Maths to begin the AS course. However, without the attributes detailed above, students often find the course very challenging.

## **WHAT WILL YOU STUDY ON THE COURSE IN YEAR 12 – THE AS LEVEL?**

The AS Level is composed of three units:

### **Unit 1:**

Formulae, equations and amounts of substance, Energetics, Atomic structure and the periodic table, Bonding, The Periodic Table, Introductory organic chemistry, Green chemistry, Industrial processes, Nanotechnology, Biofuels, New materials.

### **Unit 2:**

Shapes of molecules and ions, Intermediate bonding, bond polarity, intermolecular forces, The periodic table – inorganic chemistry of group 7 (chlorine, bromine, iodine), Redox, Kinetics and equilibria, Chemical equilibria, Introduction to mechanisms, Modern analytic techniques, Greenhouse gases, the ozone layer and the principles of greener chemistry.

### **Unit 3: Internal assessment, Practical skills**

- Assessment of General Practical Competence
- Qualitative observation (one assessed practical)
- Quantitative measurement (one assessed practical)
- Preparation (one assessed practical)

### **HOW IS AS LEVEL ASSESSED?**

Unit 1: Exam 40% of AS, 1 hr 30 mins

Unit 2: Exam 40% of AS, 1hr 30 mins

Unit 3: Internal practical assessment 20% of AS

### **WHAT WILL YOU STUDY ON THE COURSE IN YEAR 13 – THE A2 LEVEL?**

There are a further three units of study at A2 Level:

#### **Unit 4:**

How fast? – kinetics, How far? – entropy, Equilibria, Acid/base equilibria, Further organic chemistry - carbonyl compounds, carboxylic acids and their derivatives, Spectroscopy, Green chemistry, Industrial chemistry: why reactions work, Biochemistry, Food chemistry, Polymers

#### **Unit 5:**

Redox and the chemistry of the transition metals, Further organic chemistry – arenes, organic nitrogen compounds and organic synthesis, Chemistry of breathalysers, Fuel cells, Industrial processes, Biochemistry,

#### **Unit 6:**

Internal assessment: Practical skills: as for AS but with different practicals, requiring higher level skills.

### **HOW IS A2 LEVEL ASSESSED?**

Unit 4: Exam 20% of A level 1hr 40 mins

Unit 5: Exam 20% of A level 1hr 40 mins

Unit 6 : Internal practical assessment 10% of A Level

### **HOW MUCH TIME WILL YOU HAVE TO SPEND ON PRIVATE STUDY/RESEARCH?**

AS Level: at least 4 hours per week

A2 Level: at least 5 hours per week

