A level Chemistry at

The Polesworth School

ENSURING EXCELLENCE

Why should I choose to study Chemistry?

Chemistry is the science of materials. It is about gases, liquids and solids; how they interact and how they may be made. Think about plastics, pesticides and drugs; fireworks, fuels and explosives. Chemistry is, literally, everywhere.
Do you enjoy practical laboratory work?
Are you someone who can cope fairly easily with solving logical problems? Are you intrigued by the science that you have studied so far, and prepared to work hard to find out more? Then this is the course for you!

The Course

Chemistry is an essential qualification for a large number of careers as well as being an excellent subject to study alongside any other A Level. A large number of our students move on into areas such as Applied Chemistry, Chemical Engineering, Medicine, Dentistry, Pharmacy, Biochemistry, Biotechnology and Environmental Science. Our students tell us that they really do enjoy the Chemistry course at Polesworth and for many of them it becomes a highly successful and rewarding A Level that helps them in their future careers.

What is the course content?

In your first year in A level Chemistry you will cover topics such as atomic structure, bonding and the Periodic Table. You will also learn about rates of reaction, organic chemistry, energetics and environmental issues.

In the second year the topics are covered in greater depth with further emphasis on analytical techniques and the application of chemical understanding in the world around us.

Examinations

All exams are taken at the end of the two-year course, for chemistry this is three 2-hour papers. There is no coursework module however there are a series of practical experiments which pupils will complete over the 2-year course and these may be assessed in the paper 1,2, and 3 exams.

Entry Requirements

Students must achieve at least a Grade 6 in Maths along with a minimum of a 65 in Combined Science or if Triple Science is taken, a grade 6 in Chemistry with a grade 5 in either Physics or Biology.

Students should be aware that Chemistry is an academically demanding subject and a willingness to work hard is essential. Students will be expected to complete at least 3 hours of independent work per week.

Exam Board

AQA Chemistry Syllabus 7405

Contents

Paper 1	2-hour exam – 105 marks (105 marks short and long answer Qs). 35% of A level Topic list: Relevant Physical chemistry topics • 3.1.1 Atomic structure • 3.1.2 Amount of substance • 3.1.3 Bonding • 3.1.4 Energetics • 3.1.6 Chemical equilibria • 3.1.7 Oxidation and reduction • 3.1.8 Thermodynamics • 3.1.10 Equilibrium constant Kc for homogeneous systems • 3.1.11 Electrode potentials and electrochemical cells • 3.1.12 Acids and bases Inorganic chemistry (Section 3.2) • 3.2.1 Periodicity • 3.2.2 Group 2, the alkaline earth metals • 3.2.3 Group 7, the halogens • 3.2.4 Properties of Period 3 elements and their oxides • 3.2.5 Transition metals • 3.2.6 Reactions of ions in aqueous solution • Relevant practical skills
Paper 2	2-hour exam – 105 marks (105 marks short and long answer Qs). 35% of A level Topic list: • 3.1.2 Amount of substance • 3.1.3 Bonding

	• 3.1.4 Energetics • 3.1.5 Kinetics • 3.1.6 Chemical equilibria • 3.1.9 Rate equations Organic chemistry (Section 3.3) • 3.3.1 Introduction to organic chemistry • 3.3.2 Alkanes • 3.3.3 Haloalkanes • 3.3.4 Alkenes • 3.3.5 Alcohols • 3.3.6 Organic analysis • 3.3.7 Optical isomerism • 3.3.8 Aldehydes and ketones • 3.3.9 Carboxylic acids and derivatives • 3.3.10 Aromatic chemistry • 3.3.11 Amines • 3.3.12 Polymers • 3.3.13 Amino acids, proteins and DNA • 3.3.14 Organic synthesis • 3.3.15 Nuclear magnetic resonance spectroscopy • Relevant practical skills
Paper 3	2-hour exam – 90 marks (40 marks of questions on practical techniques and data analysis 20 marks of questions testing across the specification 30 marks of multiple choice questions). 30% of A level • Any content • Any practical skills