

CHEMISTRY (EDEXCEL)

Are you interested in:

- how new and useful substances are made
- modern theories about the structure of the atom
- how cells and batteries work
- the molecules which occur in nature
- learning how to analyse the composition of a mystery liquid?

Do you enjoy:

- experiments which test your powers of observation or your accuracy
- using maths to predict the outcome of chemical reactions
- learning how to use the periodic table to understand patterns amongst the elements?
- want to learn about 'green issues' from a chemical perspective?

Chemistry - often referred to as the 'Central Science' - is important for the study of many other sciences including geology, materials science, biology, textile science, food science and the medical sciences.

We follow the Pearson Edexcel Exam Board specification. The A Level qualification consists of three externally examined papers sat at the end of the two year course leading to the 'A' level qualification. This modern syllabus provides a demanding and stimulating course covering topics in Physical, Inorganic and Organic Chemistry. Students acquire an in-depth understanding of the patterns and trends linking elements, compounds and their reactions. There is an emphasis on the relevance of the chemistry studied to industry, to everyday life and to environmental issues. A practical session is held each week.

The topics covered include:-

YEAR 12

- Atomic structure & the periodic table
- Bonding and structure (ionic, covalent and metallic)
- Redox
- Inorganic Chemistry & the periodic table
- Formulae, equations and amounts of substance.
- Organic Chemistry
- Modern analytical techniques
- Energetics
- Rates of reactions
- Reversible reactions.

There is no coursework element assessed but students will carry out sixteen core practicals which will lead to them achieving competence in core practical methods.

YEAR 13 (A LEVEL)

Paper One: Advanced Inorganic and Physical Chemistry (30% of A-Level assessment)

- Atomic structure and the periodic table
- Bonding and structure (ionic, covalent and metallic)
- Redox, Inorganic Chemistry and the periodic table
- Formulae, equations and amounts of substance
- Energetics, Equilibria
- Transition metals.

Paper Two: Advanced Organic and Physical Chemistry (30% of A-Level assessment)

- Bonding and structure
- Formulae, equations and amounts of substance
- Organic Chemistry, Modern analytical techniques
- Energetics
- Rates of reactions, Reversible reactions,

Paper Three: General and Practical Principles in Chemistry (40% of A-Level assessment)

Questions in this paper may draw on any of the topics in this specification. The paper will include synoptic questions that may draw on two or more different topics listed.

The paper will include questions that assess conceptual and theoretical understanding of experimental methods (indirect practical skills) that will draw on students' experiences of the core practicals.

TEACHING

The teaching is shared between two teachers of Chemistry. The study of this subject involves, each week:-

- 3 hours teaching
- 1½ hours practical work
- 5 hours homework: background reading, questions set by teacher each week, writing up the practical experiment

Students are given regular short tests on each topic, to provide information on progress during the course.

ASSESSMENT

A LEVEL CHEMISTRY: Papers 1, 2 and 3 Year 13

ACADEMIC ENRICHMENT AND TRIPS

We run Chemistry Clinic, Chemistry Olympiad, RSC Schools' Analyst Competition and organise lectures run by universities.

CAREERS

Advanced Level Chemistry is usually essential for the following degree courses -
Medicine, Biochemistry, Agricultural Science, Chemical Engineering, Materials Science, Dentistry, Veterinary Science, Pharmacy, Pharmacology and Geology. Chemistry supports the study of many topics in Biology and Physics.