CITY OF LONDON ACADEMY
ISLINGTON
WHERE STUDENTS SUCCEED

Chemistry

A Level Chemistry:

Why choose this subject?

If you enjoyed chemistry at GCSE, you'll love this A level course. In two years that will fly by you'll get a real in-depth knowledge of this fascinating subject, preparing you for further education or giving you the credentials to enhance your job options straight away.

Chemists have greatly improved the quality of life for the majority of people. Our A Level course is underpinned by the practical skills that we call 'How Science Works'. You also find out how chemists are real innovators, designing solutions to the problems that affect modern life.

Who takes this course?

Students with a wide range of interests enjoy the chemistry course. Whether you want a job in medicine or industry, chemistry is the solid platform upon which careers are built.

Where will success take me?

Chemistry is a great choice of subject for people who want a career in health and clinical professions, such as medicine, nursing, biochemistry, dentistry or forensic science. It will also equip you for a career in industry, for example a job in the petrochemical or drug discovery in the pharmaceutical industry.
The analytical skills gained in studying chemistry are much valued by city firms of accountants, lawyers and consultants, and the investigation and report writing skills gained doing practicals will set you up well for a career in journalism.

What Will I Be Studying?

In the first year you'll cover foundation subjects like atomic structure, periodicity and organic chemistry and work up to topics like kinetics, alkenes and analytical techniques.

Year two introduces you to more topics, including equilibria, polymers and aromatic chemistry; thermodynamics, energetics and inorganic chemistry.

Throughout the course you will be tested on your practical skills including 12 assessed practicals which contribute to your overall grade. You will carry these out individually so have plenty of opportunity to develop and refine your practical skills.

Why study Biology at COLA-I?

At COLAI we use the AQA exam board for chemistry. The course is taught by specialist physical, organic and inorganic chemists.

At COLA-I we are provide individual support for our students with intervention sessions, resources, revision and exam materials are provided for all.

Entry Criteria
At least five grades 9-5 GCSEs including English and mathematics

- **If taking combined science GCSE – grade 6-6 or above**
- **If taking triple science – grade 6 or above in chemistry GCSE and biology GCSE**
- **Grade 6 or above in mathematics GCSE**

How will I be assessed?
You will sit 3 x 2hour papers at the end of Year 13

Paper 1

- **Physical chemistry:** Atomic structure, Amount of substance, Bonding, Energetics, Chemical equilibria, Le Chatelier's principle and K_c, Oxidation, reduction and redox equations, Thermodynamics, Equilibrium constant K_p for homogeneous systems, Electrode potentials and electrochemical cells and Acids and bases.
- **Inorganic chemistr**y: Periodicity, Group 2, the alkaline earth metals, Group 7(17), the halogens, Properties of Period 3 elements and their oxides, Transition metals and Reactions of ions in aqueous solution.

Paper 2

- Physical chemistry: Amount of substance, Bonding, Energetics, Kinetics, Chemical equilibria, Le Chatelier's principle and Kc, Rate equations
- Organic chemistry: Introduction to organic chemistry, Alkanes, Halogenoalkanes, Alkenes Alcohols, Organic analysis, Optical isomerism, Aldehydes and ketones, Carboxylic acids and derivatives, Aromatic chemistry, Amines, Polymers, Amino acids, proteins and DNA, Organic synthesis, Nuclear magnetic resonance spectroscopy and Chromatography.

Paper 3 - Practical Paper: Make up a volumetric solution and carry out a simple acid–base titration**;** Measurement of an enthalpy change**;** Investigation of how the rate of a reaction changes with temperature**;** Carry out simple test-tube reactions to identify; Distillation of a product from a reaction**;** Tests for alcohol, aldehyde, alkene and carboxylic acid**;** Measuring the rate of reaction; Measuring the EMF of an electrochemical cell**;** Investigate how pH changes when a weak acid reacts with a strong base and when a strong acid reacts with a weak base**;** Preparation of a pure organic solid and test of its purity **and** a pure organic liquid**;** Carry out simple test-tube reactions to identify transition metal ions in aqueous solution**;** Separation of species by thin-layer chromatography.