

KS4 Curriculum Handbook Subject Page

Subject: GCSE Separates Chemistry

Syllabus: Pearson Edexcel GCSE (9-1) in Chemistry (1CH0)

What will I learn?

The content is split in to 9 key topics.

Topics 1 to 5 are delivered during year 10 and topics 6 to 9 are delivered during year 11.

- Topic 1 – Key concepts in chemistry
- Topic 2 – States of matter and mixtures
- Topic 3 – Chemical changes
- Topic 4 – Extracting metals and equilibria
- Topic 5 – Separate chemistry 1
- Topic 6 – Groups in the periodic table
- Topic 7 – Rates of reaction and energy changes
- Topic 8 – Fuels and Earth science
- Topic 9 – Separate chemistry 2

The key concepts delivered through these topics are:

- Matter is composed of tiny particles called atoms and there are about 100 different naturally occurring types of atoms called elements
- Elements show periodic relationships in their chemical and physical properties
- These periodic properties can be explained in terms of the atomic structure of the elements
- Atoms bond by either transferring electrons from one atom to another or by sharing electrons
- The shapes of molecules (groups of atoms bonded together) and the way giant structures are arranged is of great importance in terms of the way they behave
- There are barriers to reaction so reactions occur at different rates
- Chemical reactions take place in only three different ways: proton transfer, electron transfer, electron sharing
- Energy is conserved in chemical reactions so can therefore be neither created nor destroyed.

How will I be assessed?

There are two exams at the end of the two years both of which are 1 hour 45 minutes long and comprise of 100 marks each. Each exam consists of a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Paper 1 will consist of topics delivered during year 10 and Paper 2 will consist of topics delivered in year 11.

How will this prepare me for my next steps?

GCSE Chemistry will provide the foundations of knowledge needed to embark upon further study and careers in the Physical Sciences, as well as those in the fields of Medicine and Dentistry. Furthermore, the course will develop analytical and problem-solving skills which are essential in approaching a wide range of Further and Higher Education courses and careers.

The delivery of our GCSE Chemistry course consists of a combination of theory and practice with weekly assessments to closely track progress and tackle any issues in a timely manner. The curriculum is designed to promote a love of learning, as well as incorporate pedagogical approaches that reflect current research in the Science of Learning. The routines and structures in place will support students into becoming effective independent learners, which also supports them towards success in futures studies in Higher Education.

Contribution to UTC/Studio aims

Chemistry develops the critical thought processes needed to understand and challenge complex ideas, and apply them to contexts that are both familiar and abstract. Our delivery of GCSE Chemistry aims to provide a unique educational experience that delivers both theory and practice to the highest possible standards. By combining scientific skills with rigorous theoretical study, we aim to allow students to exceed expectations in lessons that are innovative, stimulating and exciting, leading them to successful careers and life experiences.

Careers/job ideas

According to bestcourse4me.com, the top five degree courses taken by students who have an A-level in Chemistry are:

- Chemistry
- Biology
- Pre-clinical medicine
- Mathematics
- Pharmacology

Studying a Chemistry related degree at university gives you all sorts of exciting career options, including:

- Analytical chemist
- Chemical engineer
- Clinical biochemist
- Pharmacologist
- Doctor
- Research scientist (physical sciences)
- Toxicologist
- Chartered certified accountant
- Environmental consultant
- Higher education lecturer
- Patent attorney
- Science writer
- Secondary school teacher