



GCE: Chemistry

AQA



CANNOCK CHASE HIGH SCHOOL

A C H I E V E M E N T F O R A L L

A-level Chemistry attempts to answer the big question **‘what is the world made of?’** and it’s the search for this answer that makes this subject so fascinating.

From investigating how one substance can be changed drastically into another, to researching a new wonder drug to save millions of lives, the opportunities that chemistry provides are endless.



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A C H I E V E M E N T F O R A L L

Course Content

- Formulae, equations and amounts of substance
- Atomic structure
- Bonding and structure
- Energetics and kinetics
- Equilibria
- Redox
- Inorganic chemistry and the periodic table
- Organic chemistry
- Modern analytical techniques



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A C H I E V E M E N T F O R A L L

Course Content

3.1 Physical chemistry

- 3.1.1 Atomic structure
- 3.1.2 Amount of substance
- 3.1.3 Bonding
- 3.1.4 Energetics
- 3.1.5 Kinetics
- 3.1.6 Chemical equilibria, Le Chatelier's principle and K_c
- 3.1.7 Oxidation, reduction and redox equations
- 3.1.8 Thermodynamics (A-level only)
- 3.1.9 Rate equations (A-level only)
- 3.1.10 Equilibrium constant K_p for homogeneous systems (A-level only)
- 3.1.11 Electrode potentials and electrochemical cells (A-level only)
- 3.1.12 Acids and bases (A-level only)

3.2 Inorganic chemistry

- 3.2.1 Periodicity
- 3.2.2 Group 2, the alkaline earth metals
- 3.2.3 Group 7(17), the halogens
- 3.2.4 Properties of Period 3 elements and their oxides (A-level only)
- 3.2.5 Transition metals (A-level only)
- 3.2.6 Reactions of ions in aqueous solution (A-level only)

3.3 Organic chemistry

- 3.3.1 Introduction to organic chemistry
- 3.3.2 Alkanes
- 3.3.3 Halogenoalkanes
- 3.3.4 Alkenes
- 3.3.5 Alcohols
- 3.3.6 Organic analysis
- 3.3.7 Optical isomerism (A-level only)
- 3.3.8 Aldehydes and ketones (A-level only)
- 3.3.9 Carboxylic acids and derivatives (A-level only)
- 3.3.10 Aromatic chemistry (A-level only)
- 3.3.11 Amines (A-level only)
- 3.3.12 Polymers (A-level only)
- 3.3.13 Amino acids, proteins and DNA (A-level only)
- 3.3.14 Organic synthesis (A-level only)
- 3.3.15 Nuclear magnetic resonance spectroscopy (A-level only)
- 3.3.16 Chromatography (A-level only)



meter

condenser

distillation flask

salt

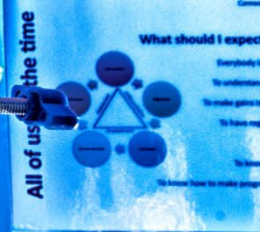
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CCHS Science department news.

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Healthy Science Week

The aim is to make sure that available to specialist centres and their partners and partners in the field.

	Specialist centre available	Full-time working	Specialist centre available	Other specialist centre	Working student	Working staff	Work shadow	Work placement available
Y1								
Y2								
Y3								
Y4								
Y5								
Y6								



Practical endorsement

- Minimum of **12 practicals**
- Need to keep **separate practical record**
- Students that achieve will receive a **PASS grade**
- Not needed for the AS qualification BUT will be assessed in the AS exams

A Level- 2 years of study

Assessments

Paper 1	+	Paper 2	+	Paper 3
What's assessed <ul style="list-style-type: none">Any content from topics 1– 4, including relevant practical skills		What's assessed <ul style="list-style-type: none">Any content from topics 5–8, including relevant practical skills		What's assessed <ul style="list-style-type: none">Any content from topics 1–8, including relevant practical skills
Assessed <ul style="list-style-type: none">written exam: 2 hours91 marks35% of A-level		Assessed <ul style="list-style-type: none">written exam: 2 hours91 marks35% of A-level		Assessed <ul style="list-style-type: none">written exam: 2 hours78 marks30% of A-level
Questions <ul style="list-style-type: none">76 marks: a mixture of short and long answer questions15 marks: extended response questions		Questions <ul style="list-style-type: none">76 marks: a mixture of short and long answer questions15 marks: comprehension question		Questions <ul style="list-style-type: none">38 marks: structured questions, including practical techniques15 marks: critical analysis of given experimental data25 marks: one essay from a choice of two titles



Why do Chemistry?

- Universities think very highly of Chemistry students; they have to be the best of the best!
- Develops transferrable thinking and application skills
- Great Chemistry students exhibit excellent teamwork, networking, research and analytical skills and have a high sense of self motivation and self esteem!



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Why do Chemistry?

Possible degree options

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.

<https://university.which.co.uk/advice/a-level-choices/what-a-levels-do-you-need-for-the-degree-you-want-to-study>

Possible career options

Studying an A-level 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.



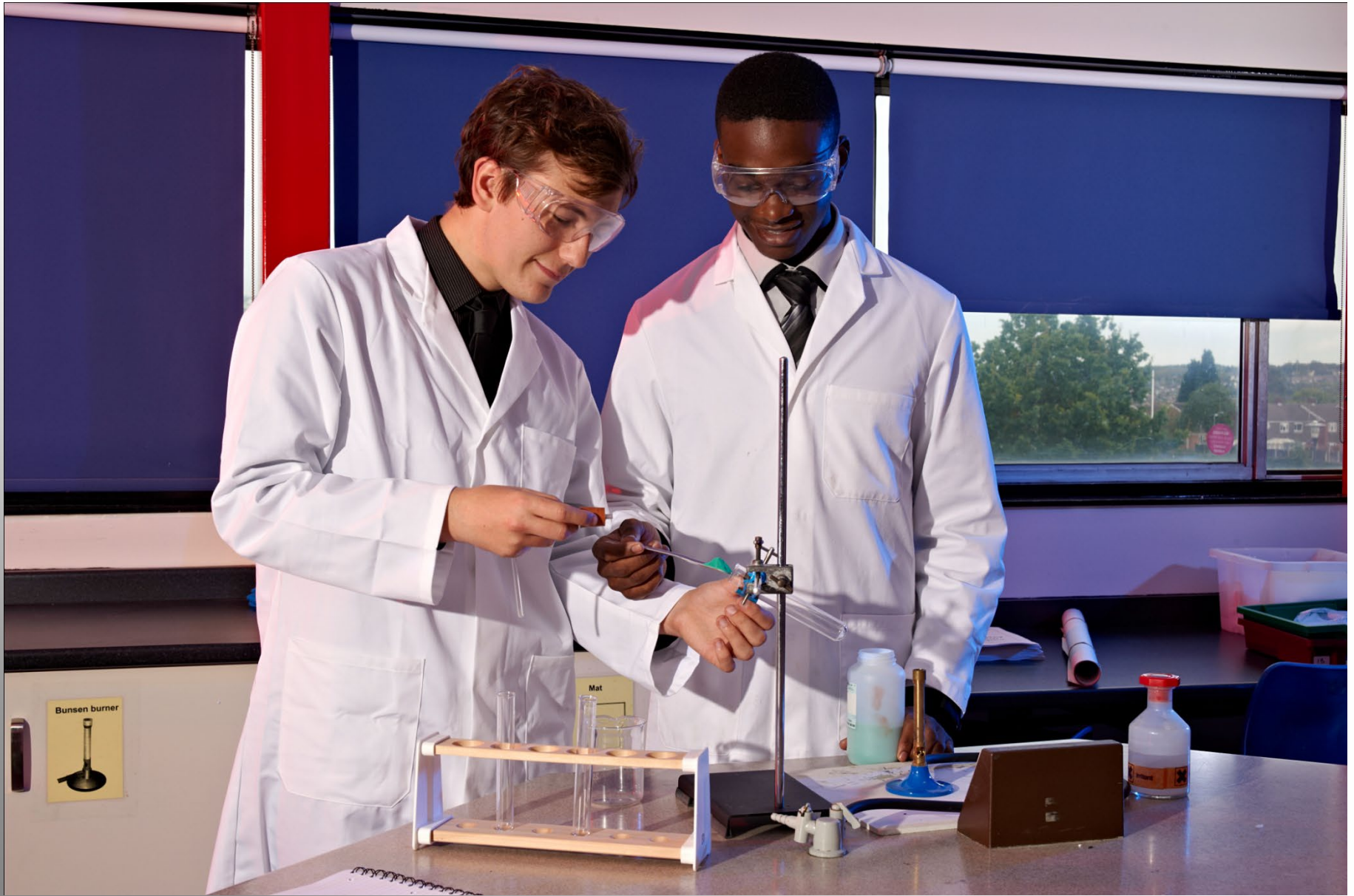
What skills do I need?

- Commitment to hard work
- **Enthusiasm, passion and skills** in science (minimum of 2 6s at Combined/ 6 in Triple Science Chemistry and a 6 in Maths) with the desire to develop a greater understanding of new concepts and principles
- Willingness to develop a high level of **experimental skills** and **safe working practice**
- Excellent **mathematical skills** (minimum grade 6 at GCSE) to use and manipulate numbers and formulae



What is expected of a level Chemists

- 5 hours of private study each week – minimum
- Reading around the subject – magazines, books etc
- To get to grips with the maths (it is tricky!)
- To revise as you go along
- To learn key words – word for word



Previous Chemistry students have gone on to great things!



MANCHESTER
1824

The University of Manchester



Courses our students have studied

- Medicine
- Pharmacology
- Chemistry
- Dentistry
- Chemical engineering
- Biomedical Science
- Maths
- Physics
- Astrophysics



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Where can you get more information?

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AQA Chemistry A level

<https://www.aqa.org.uk/subjects/science/as-and-a-level/chemistry-7404-7405>