

# HIGHAMLANE SIXTHFORM

## Context:

'What is the world made of?' If you want to search for the answer to this big question then A-Level Chemistry is for you. From understanding how pharmaceuticals interact with our bodies, how we affect the environment and how modern materials are made. In this course you will develop essential knowledge and understanding of fundamental chemical concepts, as well as a variety of areas of chemistry, and you will get to grips with how these relate to each other.

## Exam Board: AQA (7405)

## Assessment:

### A-level

Paper 1: Physical Chemistry, Inorganic Chemistry and relevant practical skills

Paper 2: Physical Chemistry, Organic Chemistry and relevant practical skills

Paper 3: Any content and practical skills

All papers last 3 hours

## Course details:

### Physical Chemistry

Atomic structure

Amount of substance

Bonding

Energetics

Kinetics

Chemical equilibria

Redox reactions

Thermodynamics

Rate equations

Equilibrium constant

Electrode potentials

Acids and bases

### Inorganic Chemistry

Periodicity

Group 2 elements

Group 7 elements

Properties of Period 3 elements

Transition metals

Reactions of ions in aqueous solution

### Organic Chemistry

Alkanes

Halogenalkanes

Alkenes

Alcohols

Organic Analysis

Optical isomerism

Aldehydes and Ketones

Carboxylic acids

Aromatic Chemistry

Amines

Polymers

Amino acids, proteins and DNA

Organic synthesis

Nuclear Magnetic Resonance

Spectroscopy

Chromatography

# CHEMISTRY

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## Other Learning Opportunities:

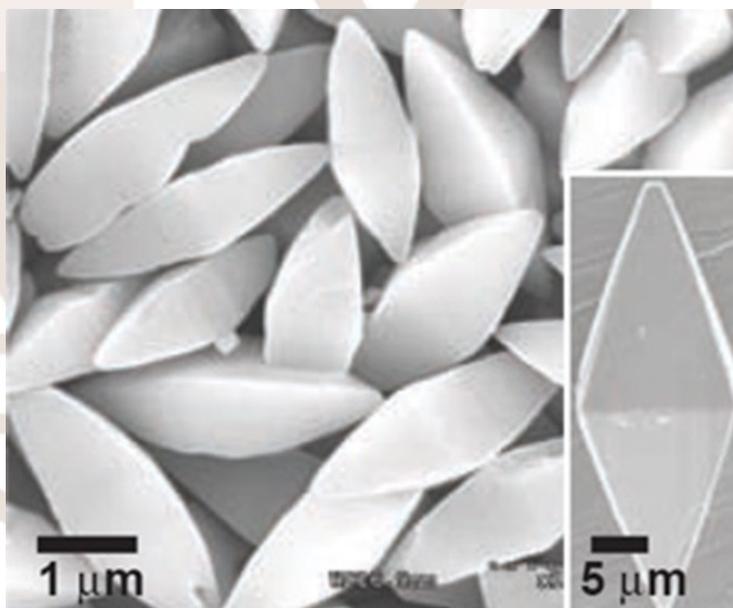
- Lecture demonstrations at local Universities
- Industry tours
- Supporting KS3/4 students in Science lessons

## Where next with this course?

A level Chemistry is often a requirement for degree courses in Medicine, Dentistry, Veterinary Science, Pharmacy, Pharmacology, Analytical Chemistry and Chemical Engineering.

Some courses that find chemistry desirable include food technology, nursing, physiotherapy, radiography, paramedical courses, law and zoology.

A degree in Chemistry could lead to opportunities in chemical industries, such as pharmaceuticals, agrochemicals, petrochemicals, toiletries, plastics and polymers. However, those who study chemistry could enter many different sectors including the food and drink industry, utilities and research, health and medical organisations, journalism and scientific research organisations and agencies.



## One example of how Chemists could improve the environment:

A carbon capturing microporous copper silicate material has been created that could offer a cheaper and simpler way of capturing carbon dioxide from the gas flues of fossil fuel power plants.