



# Chemistry

Year: 12/13

*"All sorts of things can happen when you're playing around with things."*

Stephanie Kwolek (1923-2014)

## Course Content

Inorganic, organic and physical chemistry are the three main areas of the AQA A level 2 year course, consisting of three end of course exams and 12 required practical's which are completed during lessons. 20% of the overall assessment will require mathematical skills and 15% will require knowledge of the required practical work.

### Skills developed

Studying chemistry involves a mix of practical and theory work developing mathematical and analytical skills.

### Topics covered

#### 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
- Chromatography

#### Inorganic Chemistry

- Periodicity
- Group 2, the alkaline Earth metals
- Group 7 (17) The Halogens
- Properties of period 3 elements and their oxides.
- Transition metals
- Reactions of ions in aqueous solutions

#### Physical Chemistry

- Atomic Structure
- Amount of substance
- Bonding
- Energetics
- Kinetics
- Chemical Equilibria
- Oxidation, reduction and redox equations
- Equilibrium constant  $K_p$  for homogenous systems
- Electrode potentials and electrochemical cells
- Acids and bases

### For more information

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