

Subject:

# Chemistry



HECKMONDWIKE  
GRAMMAR SCHOOL

## KS4 - Year 10 Curriculum Overview

Autumn Term

Topics being taught

**C2 Structures and bonding-**  
Ionic, Covalent and Metallic bonding and the properties of materials

**C4 Chemical changes-**  
Review of reactivity and displacement reactions and redox reactions.  
Electrolysis of melts and solutions

**C5 Energy Changes-**  
Endothermic and exothermic reactions and energy profiles. Cells, batteries and fuel cells

Term 1

What you will be assessed on

Explaining the properties of materials based on their structure and bonding e.g. why do simple molecules like oxygen boil at low temperatures

Term 2

Being able to write chemical formulae, balance chemical equations and half equations.

How you can support at home

Make sure you are familiar with the [AQA GCSE Chemistry](#) specification

[C2 Structures and bonding on bitesize](#)

[Overview of electrolysis of melts and solutions](#)

More videos on [balancing equations](#), [ionic formulae](#) and [half equations](#)

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Spring Term

Topics being taught

**C6 Rate and extent of chemical change-**  
Measuring rates of chemical reactions. Collision theory and explaining the effect of conditions on the reaction rate.  
Reversible reactions and Le Chatelier's principle. The Haber process and manufacture of fertilisers and their use.

Term 3

What you will be assessed on

Energy level diagrams for endo and exothermic reactions and calculation of energy changes using bond energies. Comparison of batteries and fuel cells.

Term 4

Being able to explain changes in the speed of reactions using collision theory. Calculating rates from gradients. Using Le Chatelier's principle to explain changes to yields of reversible reactions.

How you can support at home

Overview of [Energetics topic](#) ignore the fact it's IGCSE)

[Simple cells and fuel cells](#) – make sure you know the pros/cons!

Review [collision theory](#) and explain how temperature, pressure etc change the rate

[Le Chatelier's principle](#) is the key to understanding the effects of changing conditions on equilibria

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Summer Term

Topics being taught

**C8 Chemical Analysis-**  
Pure substances and formulations. Methods of chemical analysis including chemical tests for positive and negative ions and different gases.  
Instrumental methods of analysis.

Term 5

What you will be assessed on

Being able to describe how to test for positive ions using flame tests and sodium hydroxide solution. Being able to describe how to test for halide, carbonate and sulfate ions.

Term 6

Y10 Final Exam – covering units covered so far  
C1,C2,C4,C5,C6,C8,C9 and C10

How you can support at home

Learn the tests for positive ions – [flame tests](#) and [metal hydroxide](#) precipitates

Learn the tests for negative ions – [halide ions](#), [sulphate](#) and [carbonate ions](#)

[Instrumental analysis](#) and how it can be used to identify metals

Remember you can set your own tests on [Educake](#) to revise the different GCSE units!