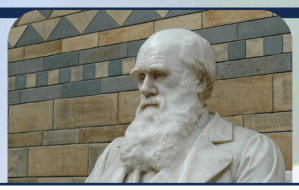
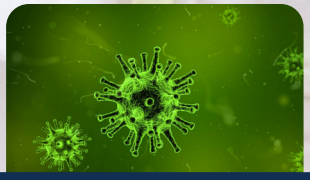
Year 10 GCSE Combined Science



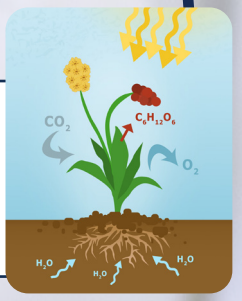
Natural selection and genetic modification
The evidence for evolution and how/ why cells can be genetically modified.

Genetics
In this subject, students learn about the fundamentals of DNA and inheritance.



Health disease and the development of medicines
In this topic, students will learn about diseases, the development of medicines and the basics of our immune system.

Plant structures and their functions
The structure of plants and how they are adapted to carry out photosynthesis.



Acids and alkalis
Investigating the reaction of acids and alkalis. As well as learning how these substances react with other chemicals.

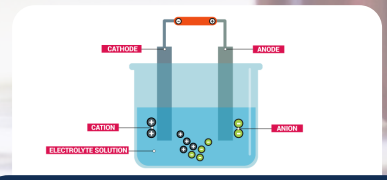
Critical or logical thinking
The ability to deduct, hypothesise, reason and seek supporting evidence.

$$A + B = C$$

Calculations involving masses
In quantitative chemistry, students learn how to predict the mass of products in a chemical reaction. They also learn how to predict the formulae of compounds when you know the mass of those compounds.

LINKING

Big picture thinking
The ability to work with big ideas and holistic concepts.



Electrolytic processes
Studying electrolysis, and what we use electrolysis for and what happens during the process.

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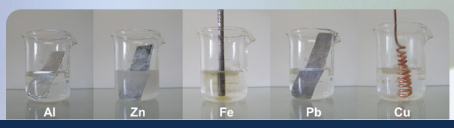


Obtaining and using metals
How we can obtain metals from their ores and alternative methods for extracting metals.

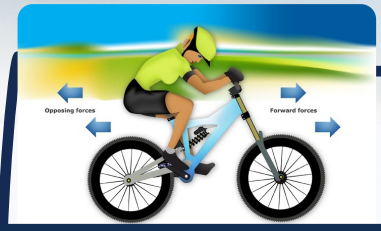
ANALYSING

Precision
The ability to work effectively within the rules of a domain.

Reversible reactions and equilibria
Students learn what a reversible reaction is and how different factors can effect reversible reactions.

Radioactivity
During this topic, students learn about radioactive decay, the different types of radiation and the uses of radioactive substances.

Meta-cognition
The ability to knowingly use a wide range of thinking approaches and to transfer knowledge from one circumstance to another.



Energy
In this topic, students learn how to calculate gravitational potential energy, they also learn how to calculate the amount of work done on an object if it is lifted.

Forces and their effects
Compare different contact and non-contact forces. Students will also learn about vectors and how to draw vector diagrams.

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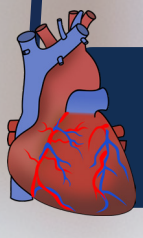
Intellectual playfulness - The ability to recognise rules and bend them to create valid but new forms.

Year 11

GCSE Combined Science

Animal Coordination, control and homoeostasis
How animals respond to external stimuli, how hormones control the body and how a constant internal environment is maintained.

Flexible thinking - The ability to abandon one idea for a superior one or generate multiple solutions.



Exchange and transport in animals
In this topic, students learn about the movement of substances in organisms and the factors which affect this movement.

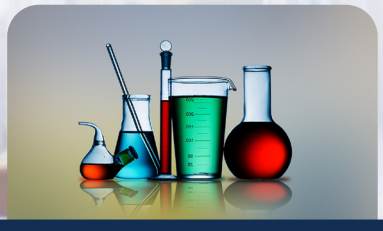
Ecosystems and material cycles
Studying the environment, and our impact, specifically, students will learn about biodiversity.

Groups in the periodic table
Learning about groups 1, 7 and 0 in the periodic table and examine the physical and chemical properties of these elements.

Rates of reaction
The rates of a chemical reaction and the factors which ultimately effect those rates.

META-THINKING

Self regulation
The ability to monitor, evaluate and self-correct.



Heat energy changes in chemical reactions
Students will examine endothermic and exothermic reactions and how these reactions can be measured.

Connection finding
The ability to use connections from past experiences to seek possible generalisations.

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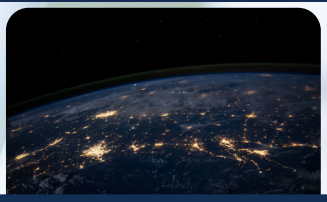
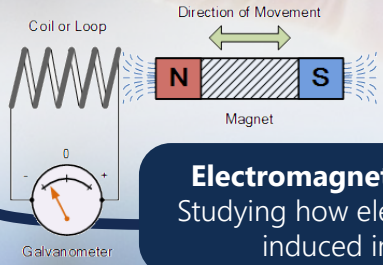
Fuels
In this topic, students will learn about the components of oil, how these components can be separated and their uses.



Earth and atmospheric Science
Our atmosphere, how it has changed over time and the impact of humans on the atmosphere.

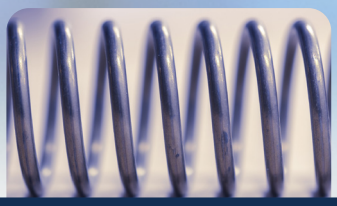
HARD WORKING
The ability to train and prepare through repetition of the same processes in order to become more proficient.

Magnetism and the motor effect
In this subject, students will learn about magnets, the electromagnetic effect around a wire, the motor effect and transformers.



Electromagnetic induction
Studying how electricity can be induced in a wire.

Particle model
As part of this topic, students learn how to calculate density and understand how kinetic theory relates to pressure.



Forces and Matter
Investigating Fick's law and the elasticity of a spring.

Imagination - The ability to represent the problem and its categorisation in relation to more extensive and interconnected prior knowledge.

GCSE Exams

At the end of Year 11, students are assessed by 6 exams:
2 x Biology 2 x Chemistry 2 x Physics which are equally weighted.
Each exam is 1h10m in duration and the final grade is based on the average score across all of the papers.
Students are awarded 2 GCSE qualifications, with a split grade, based on the strength of their average results.

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