

Combined Science (Double Award)/Separate Sciences

Science is a compulsory core subject and therefore all pupils follow a course in this area at KS4.

This GCSE qualification in Science encourages students to be inspired, motivated and challenged by following a broad, coherent, practical, satisfying and worthwhile course of study. It provides insight into and experience of how science works, stimulating students' curiosity and encouraging them to engage with science in their everyday lives and to make informed choices about further study and career choices.

Lessons

Combined Science will be delivered during **4 lessons** during the week.

Separate Sciences will have a further **3 lessons** (i.e. one option column) in addition to their 4 Combined Science lessons.

Assessment Model

All courses are now linear; so all exams will be sat at the end of Year 11.

Foundation (1-5) and Higher (4-9).

Split according to topics.

Combined Science

Biology 1 Paper 1 1hr 10 60 marks	Chemistry 1 Paper 1 1hr 10 60 marks	Physics 1 Paper 1 1hr 10 60 marks
Biology 2 Paper 2 1hr 10 60 marks	Chemistry 2 Paper 2 1hr 10 60 marks	Physics 2 Paper 2 1hr 10 60 marks

Separate Sciences

Biology 1 Paper 1 1hr 45 100 marks	Chemistry 1 Paper 1 1hr 45 100 marks	Physics 1 Paper 1 1hr 45 100 marks
Biology 2 Paper 2 1hr 45 100 marks	Chemistry 2 Paper 2 1hr 45 60 marks	Physics 2 Paper 2 1hr 45 100 marks

Module content

Biology/Combined Science

Paper 1

Overarching concepts in Biology
Cells and control
Genetics
Natural selection and genetic modification
Health, disease and development of medicines

Paper 2

Overarching concepts in Biology
Plant structures and their functions
Animal coordination, control and homeostasis
Exchange and transport in animals
Ecosystems and material cycles

Chemistry/Combined Science

Paper1

Overarching concepts in Chemistry
States of Matter
Methods of separating and purifying substances
Acids
Obtaining and using metals
Electrolytic processes
Reversible reactions and equilibria
Transition metals, alloys and corrosion*
Quantitative analysis*
Dynamic equilibria calculations involving volumes of gases*
Chemical cells and fuel cells*

Paper 2

Overarching concepts in Chemistry
Group 1,7 and 0
Rates of Reaction
Fuels
Heat energy changes in chemical reactions
Earth and atmospheric science
Qualitative analysis: tests for ions*
Hydrocarbons*
Polymers*
Alcohols and carboxylic acids*

Bulk and surface properties of matter including nanoparticles

* *Chemistry GCSE only*

Physics/Combined Science

Paper1

Overarching concepts in Physics
Waves
Light and the electromagnetic spectrum
Particle model - 1
Radioactivity
Astronomy*

Paper 2

Overarching concepts in Physics
Energy – forces doing work
Forces and their effects

Electricity and circuits
Static Electricity*
Magnetism and the motor effect
Electromagnetic induction
Particle model - 2
Forces and matter

**Physics GCSE only*

Assessing practical skills

There are 8 core practical's in each of the separate science GCSEs. There are 17 in the Combined Science GCSEs. These are based on the apparatus and techniques list in the DfE criteria.

Knowledge and understanding of these core practical's, as well as investigative skills will be tested in the exams (15% of marks).

Assessing maths skills

Set percentages of Maths within the paper, 20% over all 6 papers (10% from Biology, 20% from Chemistry and 30% from Physics).

Set list of 19 Physics equations to recall and apply in GCSE Physics (plus 9 just to apply).