

Science KS4 Learning Journey



What is the course about?

GCSE Combined Science is about how Science affects our lives and the decisions we make. It examines the evidence about issues like mobile phone masts and global warming. It also examines ethical and moral issues like stem cell research. Units taught will cover the following topics:

Biology - cell biology, transport systems, health, disease and the development of medicines, coordination and control, photosynthesis, ecosystems, and inheritance, variation and evolution.

Chemistry - atomic structure and the periodic table, structure, bonding and the properties of matter, chemical changes, energy changes in chemistry, The rate and extent of chemical change, chemical analysis, chemical and allied industries, and Earth and atmospheric science.

Physics - energy, forces, forces & motion, waves in matter, light and electromagnetic waves, electricity, magnetism and electromagnetism, particle model of matter, and atomic structure.

Studying GCSE Combined Science will broaden your understanding of the world around you, may allow you to influence and develop accepted scientific knowledge, and will give you the skills needed to approach most matters in a reasoned and analytical manner.

The more you look into science, the more fascinating it becomes. Science is all around us, continuously unfolding and giving us the chance to improve our world's social and economic future. Advances in areas such as communications, food production, health care and transport all depend on fresh knowledge emerging from Science's many disciplines.

Studying Science will enhance your understanding of the world, and contribute to your intellectual and personal development.

Simply an open mind is the only thing that a student needs to study Science at GCSE.

As well as being an option, there will be an opportunity for some students to progress further and study the Sciences separately (3 GCSEs). This will be a decision that is taken towards the end of Year 9 through consultation with class teachers, students and parents. Decisions will be made based on the student's achievement in Science and their enthusiasm for the subject. This will enable some students to gain a more detailed understanding of these subjects (Biology, Chemistry & Physics) which makes the step up to A Level easier.



What will I do and how will I be assessed?

Separate exams in Biology, Chemistry & Physics are taken. All exams are terminal and are taken in the summer of year 11.



What can I do afterwards?

It gives you the knowledge and understanding of science you need to study any combination of the Sciences in the sixth form (A Levels or BTEC) or go into a technical occupation, while keeping your other options open.



Electronic Links

[Bitesize](#)

[Teams](#)

[Tate Resources](#)

[AQA Specification](#)

GCSE
Exams

How could we communicate with life on other planets?
How did the universe begin?
Waves (inc. Sound, Seismic & Light)
Electromagnetism (inc. Generators and Transformers) & Space.

What is planet Earth's future?
Organic Chemistry (inc. Organic Reactions & Polymers),
The Earth's Atmosphere & Resources
(inc. Using our Resources) and Ecology
(inc. Decomposition & Impact of Change).

What evidence is there to support evolution?
Genetics and Reproduction, including DNA Structure & Protein
Synthesis, Gene Expression & Mutation, Cloning and Evolution .

How do we use forces everyday? (b)
Forces (inc. Moments, Impact Forces,
and Forces & Pressure).

Yr11

How do we use forces everyday? (a)
Rates of Reaction and Equilibrium.

How do we stay alive?
Respiration & Photosynthesis, Nerve & Hormonal
Control (inc. The Brain & The Eye) and
Homeostasis in Action.

How will we treat future diseases?
Disease (inc. Monoclonal Antibodies & Plant
Diseases) and Matter & Radioactivity
(inc. Fission & Fusion).

Why does matter stick together?
Structure & Bonding (inc. Nanoparticles) and
Quantitative Chemistry (including Titrations).

Yr10

How can we solve the world's energy crisis? (b)
Electricity (inc. Charges & Fields),
Chemical Reactions and Electrolysis &
energy Changes (inc. Cells & Batteries)