



Science Faculty

Subject Intent:

We believe that our students are entitled to an ambitious and engaging Science curriculum, rich in skills and knowledge. We believe that students should have regular opportunities to develop a deep understanding of how biological, chemical and physical process occur, to ignite their curiosity and to prepare them well for future learning or employment.

Our Science curriculum will give students the opportunity to:

- Develop and understand connections between science, maths and other subject areas and become aware of the big ideas underpinning scientific knowledge and understanding.
- Develop their practical and investigative skills by working scientifically.
- Enhance and reinforce their literacy skills through developing the ability to articulate scientific concepts clearly and precisely using correct subject specific vocabulary.
- Evaluate both sides of ethical or moral dilemmas in science to help develop understanding of alternative points of view.
- Identify and address misconceptions.
- Understand the uses and implications of science today and for the future, for example to evaluate how the use of fossil fuels and renewable energy sources are changing over time.
- To use problem solving skills within scientific concepts.

Course Overview:

The Exam board and unit list for:
GCSE

GCSE Science

AQA Combined Science Trilogy 8464

At the end of Year 11 students following the combined science course will sit six written exams of 1 hour and 15 minutes, each worth 70 marks and 16.7% of their GCSE; Two in Biology, two Chemistry and two Physics. Each of the papers will assess knowledge and understanding through a selection of multiple choice, structured, closed short answer, and open response questions. They will be required to demonstrate their knowledge alongside their mathematical, working scientifically and practical skills.

Course Detail:

The key content students will cover, broken down into these headings

Key stage 3

In Key stage 3 Science, students cover the following topics:

- Particle Model
- Mixtures and Separation

- Atoms, Elements and Molecules
- Cells, Tissues and Organs
- Muscles and Bones
- Forces
- Energy
- Food and Nutrition
- Breathing and Respiration
- Combustion
- The Periodic Table
- Acids and Alkalis
- Sound
- Current Electricity
- Sexual Reproduction in Animals
- Ecosystems
- Genetics and Evolution
- Reactivity
- Metals and Their Uses
- Fluids
- Forces and Motion
- Unicellular Organisms
- Light
- Energy Transfers
- Force Fields and Electromagnets
- Plant Growth

Key stage 4

In Key stage 4, students cover the following topics:

Biology

- 4.1 Cell Biology
- 4.2 Organisation
- 4.3 Infection and Response
- 4.4 Bioenergetics
- 4.5 Homeostasis and Response
- 4.6 Inheritance, Variation and Evolution
- 4.7 Ecology

Chemistry

- 5.1 Atomic Structure and the Periodic Table
- 5.2 Bonding, Structure and the Properties of Matter
- 5.3 Quantitative Chemistry
- 5.4 Chemical Changes
- 5.5 Energy Changes
- 5.6 The Rate and Extent of Chemical Change
- 5.7 Organic Chemistry
- 5.8 Chemical Analysis
- 5.9 Chemistry of the Atmosphere
- 5.10 Using Resources

Physics

- 6.1 Energy
- 6.2 Electricity
- 6.3 Particle Model of Matter
- 6.4 Atomic Structure
- 6.5 Forces

6.6 Waves

6.7 Magnetism and Electromagnetism

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Enrichment Opportunities

The Science and Computing Faculty have many enrichment opportunities for students such as a visit to the Big Bang Fair and fieldwork experience in Biology.

Useful links

GCSE Specification Page: <https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464>

Educake online learning platform: <https://www.educake.co.uk/>

Quizlet online flashcard learning platform: <https://quizlet.com/en-gb>

BBC Bitesize GCSE: <https://www.bbc.co.uk/bitesize/examspecs/z8r997h>