

Curriculum Information

Science



Subject rationale – Why study the subject? What benefits does it bring?

Science is the area of study where students are taught the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity. All pupils are taught essential aspects of the knowledge, methods, processes and uses of science. Pupils are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

KS3 curriculum overview

Our aim at KS3 is to build a body of key knowledge and concepts in such a way that pupils are enthused about their science lessons. Practical activities are used as much as possible as they make a great impression on pupils and help trigger memories about the science involved long after the lesson has ended. We take every opportunity to enrich the understanding of the science disciplines. The flexibility offered in KS3 is taken on board to make content as stimulating and horizon-widening as possible, a broad and balanced curriculum is our main aim.

Year 7 is taught using the Exploring Science scheme. Year 8 use the Activate resource.

Year 7

Pupils will explore the following topics. A revision summary sheet is provided on the school website.

- **Biology:**
7A Cells, tissues, organs and systems
7B Sexual reproduction in animals
7C Muscles and bones
- **Chemistry:**
7E Mixtures and separation
7F Acids and alkalis
7G The particle model
- **Physics:**
7I Energy
7J Current electricity
7K Forces

Year 8

Pupils will explore the following topics. A revision summary sheet is provided on the school website.:

- **Biology:**
Health and lifestyle;
ecosystems
- **Chemistry:**
Acids and alkalis; reactions,
separation techniques
- **Physics:**
Electricity and magnetism;
energy; the Earth

Year 9

Pupils will explore the following topics. A revision summary sheet is provided on the school website.

- **Biology:**
Inheritance and variation;
GCSE Topic 1: key concepts
in biology
- **Chemistry:**
Metals and acids; GCSE
Topic 2: states of matter;
methods of separating
and purifying substances;
GCSE Topic 1 : atomic
structure; periodic table;
GCSE Topic 8: Earth and
atmosphere science
- **Physics:**
Earth and space; motion
and pressure; GCSE Topic 2:
motion and forces;

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KS4 curriculum overview

Year 10 & 11

There are two pathways at Key Stage 4, which ensures that all students follow the course which is best suited to their needs and interests. The ethos of the department is to inspire students to be interested in science and to develop the curiosity and motivation to further explore topics. We encourage students to be aware of the relevance of science to our everyday life and we take every opportunity to enrich the understanding of the science disciplines. The two pathways are:

1. Edexcel GCSE (9-1) Combined Science
2. GCSE separate sciences:
 - Edexcel GCSE (9-1) Biology
 - Edexcel GCSE (9-1) Chemistry
 - Edexcel GCSE (9-1) Physics

KS4 Assessment Overview

Year 10:

November – assessments composed of GCSE questions
May - GCSE paper 1 in all three sciences

Year 11:

December - GCSE paper 1 in all three sciences
March - GCSE paper 2 in all three sciences

Click on the links below to find the GCSE specifications:



[GCSE specifications](#)

Revision Guidance

Year 7-9

Revision guides (£3) and workbooks (£5.50) can be bought through schoolcomms or directly from the science department. These are excellent resources for the pupils to be able to work independently at home.

Years 9-11

These can be bought from the science department

GCSE: separate sciences

Revision guides: £3.00

Workbook + answers: £4.00

GCSE: combined science

Revision guide (H/F): £6

Workbook + answers (H/F): £7



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Career opportunities

Chief scientific officer, doctor, nurse, weather forecaster, physiotherapist, teacher, science journalist, medical researcher, medical physicist, food scientist, arable farmer, vet, wildlife photographer, oceanographer, waste disposal manager, landscape gardener, car designer, chemical engineer, mechanical engineer, sports coach



Attachments / links / further information

A useful website to help pupils learn their science work is: [senecalearning.com](https://www.senecalearning.com)

Enter KS3 science in the search for a course box:

You will then see the following tab:

Click on this and it has all the science content for Ks3.

Seneca can also be used to revise GCSE work too.



Year 7

Year 7 are being taught our new science scheme of work using the Exploring Science publication and have access to the following textbook in lessons:

[Exploring Science: Working Scientifically Student Book Year 7](#)
ISBN 9781447959601

Useful GCSE sites:

<https://www.physicsandmathstutor.com/>

Past GCSE papers:

<https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.coursematerials.html#filterQuery=Pearson-UK:Category%2FExam-materials>