

## Science KS3 and KS4

### What are the aims of the course?

- To extend students' knowledge and understanding of Biology, Chemistry and Physics.
- To encourage students to ask questions about the world around them and to develop the skills of systematic, scientific enquiry.
- To encourage students to relate their scientific knowledge to familiar phenomena and to everyday technology so they develop an understanding of the world around them.
- To give students the opportunity to carry out practical experiments to extend their scientific understanding and to develop their practical skills.

### What is the content of the course?

Students will be taught in a specialist laboratory. During Year 9, it is expected that students will study:

**Biology:** Students will study cell biology, digestion and enzymes, the circulatory system, plant transport systems and infection and response and photosynthesis.

**Chemistry:** Students will study the extraction of important materials from the Earth and the chemistry behind some important industrial processes, the origin of the atmosphere and how our ideas about atoms have developed.

**Physics:** Students will follow a spiral curriculum that will look at particles, forces, energy, motion, magnetism, electricity and waves.

All students will study aspects of Biology, Chemistry and Physics in mixed ability groups throughout Years 9 and 10. No decision about the certification route being followed will be made at this stage. At the end of Year 10, final decisions about the appropriate certification route for each student will be made and students streamed. The most able scientists will take separate GCSEs in Biology, Chemistry and Physics, whilst the remainder will aim to study two GCSEs via the Combined Science route. Both the Combined Science and separate Science GCSE routes are suitable preparation for further study.

### What will be assessed during the course?

**Knowledge and Understanding:** Students will be assessed on their ability to recall scientific knowledge and will be expected to use their scientific knowledge to explain everyday events.

**Practical Skills:** Students will be assessed on their practical skills at various points throughout the course. The exam board has specified a number of practical activities which will allow students to develop the skills required.

**Research and Communication:** Students will be assessed on how well they can use sources of information, such as books, videos or information technology, to research a topic. They will present their findings through written reports, short presentations and posters. Assessment will be on-going.

**Exams:** This is a linear course with exams at the end of Year 11 in each of the subjects, which will count for 100% of each qualification. The exams will be tiered, foundation or higher. There will not be a separate mark for practical skills, but questions in the written papers will draw on knowledge obtained from carrying out the required practical activities in the specification, counting for 15% of overall marks.

### What equipment will be required?

- Scientific calculator, ruler and protractor, red pen and pencil.