

Science

We believe that science education should be broad and balanced and that all main areas of science should be experienced by all students. We believe that science education should be accessible and meaningful to all students such that they are encouraged to achieve the highest possible standards.

Our aim is that as well as understanding and feeling confident with the science they are studying; our students will see its relevance to their lives and find stimulus and enjoyment in it. We believe that investigations in science help to achieve this but also play an important part in developing skills in problem solving and help to develop an authentic understanding of the nature of scientific enquiry. We also believe that students should develop an awareness of the technological, environmental, social and moral implications of science. We recognise that within the overall curriculum, science must play its part in contributing to the spiritual, moral, social and cultural development of students. "Scientists have become the bearers of the torch of discovery in our quest for knowledge." Stephen Hawking.

Key Stage 3

Students at Castle Hall will follow a new, revised, and condensed scheme of work at Key Stage 3. The content is specifically adapted to teach them all of the necessary skills and knowledge they will need to enter Key Stage 4 with a strong foundation in Science.

Students entering Year 7 will complete a baseline assessment in their first few weeks at Castle Hall in order to identify areas of strength and areas for development in their knowledge. This will be completed alongside the 'Working Scientifically' topic. A topic primarily designed to give the students all the necessary skills to be able to carry out experiments, safely and efficiently in the Science Lab. Once students have completed the introductory phase, they will begin studying the Science content from the AQA curriculum. At the end of each topic, students will complete a 'Currently Working At' assessment to allow us and them to track the progress they have made. After every third topic, all students will complete a summative assessment to assess progress made in the topics covered during that cycle.

Course Content:

Year 7	Year 8	Year 9
Space Materials and the Earth Forces Chemical Reactions Atoms, Elements, and Compounds Particles Cells, Tissues, and Organs Reproduction and Variation Energy Ecology Matter	Cells Digestion and Nutrition Biological Systems and Processes Electricity and Magnetism Atomic Structure Energetics and Rates Sound Waves Light Energy Reactivity Separating Mixtures	Plants and Photosynthesis Forces and Motion Forces in Action Cells Atoms and Elements Energy of the Universe Tissues, Organs, and Organ Systems Electrical Circuits Disease and Infection

Key Stage 4

At Key Stage 4 students will be following the AQA Science courses.

All students will complete the AQA 'Trilogy' Science Qualification. The course will comprise of all three disciplines of Science; Biology, Chemistry and Physics. Students in Year 9 will form the first cohort of students to complete the three-year Key Stage 4 curriculum. Assessment will take the form of six 1 hour and 15-minute examinations, resulting in a double weighted GCSE qualification.

Around a third of our students elect to take the Separate Science Qualification in their options. This course is primarily aimed at those students who are interested in pursuing Science at both A-Level and into University. The course is divided into three separate GCSE courses, and will result in three GCSEs in Biology, Chemistry and Physics. Students will complete most of the same content as those on the 'Trilogy' course, however they will also complete extra lessons within each topic, designed to bridge the gap between GCSE and A-Level.

Course Content:

Biology	Chemistry	Physics
Cells Cell Organisation Infection and Response Bioenergetics Homeostasis and Response Inheritance, Variation and Evolution Ecology	Atomic Structure and Periodic Table Bonding and Structure of Matter Quantitative Chemistry Chemical Changes Energy Changes Using Resources Reaction Rates Organic Chemistry Chemical Analysis Chemistry of the Atmosphere	Forces Motion Particle Model Moments and Pressure Energy Electricity Electrical Energy Magnetism and Electromagnetism Atomic Structure Waves Space