



Curriculum Overview : Science

Year 7

The science course in Year 7 is designed so pupils explore the science curriculum in an investigative way. Pupils are afforded the opportunity to do as much relevant practical work as possible to help develop their planning, risk assessment skills and observational skills. Pupils will be taught how to record their observations and handle the data they collect in their lessons. Pupils are expected to be able to plan investigations, record their observations, analyse data and use scientific knowledge to form conclusions. Pupils are also encouraged to evaluate their own practical work and look for ways to improve it.

Pupils are taught distinct biology, chemistry and physics topics. The topics studied are cells, tissues and organs; sexual reproduction in animals; ecosystems; the particle model; atoms, elements and compounds; mixtures and separation; acids and alkalis; energy; current electricity; forces and sound.

Year 8

The science course in Year 8 is designed so pupils explore the science curriculum in an investigative way. Pupils are afforded the opportunity to do as much relevant practical work as possible to help develop their planning, risk assessment skills and observational skills. Pupils will be taught how to record their observations and handle the data they collect in their lessons. Pupils are expected to be able to analyse data and use scientific knowledge to form conclusions. Pupils are also encouraged to evaluate their own practical work and look for ways to improve it.

Pupils are taught distinct biology, chemistry and physics topics. The topics studied are food and nutrition; plants and their reproduction; breathing and reproduction; unicellular organisms; combustion, the periodic table; metals and their uses; rocks; fluids; light; energy transfer and earth and space. Aspects of the new science GCSE are also taught within the units so as stretch and challenge pupils as well as to prepare them for the demands of the new GCSE courses.

GCSE Courses

Year 9

GCSE Biology Course

The biology course is designed in such a way as to allow pupils to appreciate the natural world around them and make observations of natural phenomena. It aims to develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that encourages active learning through practical work for students to gain scientific knowledge, understanding and skills. The course identifies links to scientific ideas and their implications for society and helps pupils develop a critical approach to scientific evidence and methods. Whilst studying the course, pupils are expected to do practical investigations and learners will be assessed on these skills on the examinations. Topics studied include cell biology, microscopy, transport in cells, plant organ systems and some human biology.

GCSE Chemistry Course

The GCSE Chemistry course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for chemistry. Pupils are encouraged to develop a critical approach to scientific evidence and methods. There are many opportunities to carry out practical activities to enhance investigative skills. Pupils acquire and apply skills, knowledge and understanding of how science works and it's essential role in society. Pupils need to carry out practical investigations which will be assessed on the examinations. The examinations are taken at the end of the course. The topics studied include: Atomic structure and the periodic table, Particles, Elements, compounds and mixtures, Chemical reactions, Predicting and identifying reactions and products, and Chemistry practical skills.

GCSE Physics Course

The GCSE Physics course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for physics. Pupils are encouraged to develop a critical approach to scientific evidence and methods. There are many opportunities to carry out practical activities to enhance physics investigative skills. Pupils acquire and apply skills, knowledge and understanding of how science works and it's essential role in society. Pupils need to carry out practical investigations which will be assessed on the examinations. The examinations are taken at the end of the course. The topics studied include: particle model of matter, energy, electricity, atomic structure, and Physics practical skills.

GCSE Combined Course

The Combined Science course is designed to explore scientific principles and introduce the relevance of science through practical application. Pupils engage with the course by making sense of the science they come across in everyday life. It provides opportunities to develop scientific explanations and theories as well as to develop a critical approach to scientific evidence and methods. The development of practical skills is a fundamental and integral aspect of the study. Pupils are expected to carry out practical activities which will be

assessed on the examinations. Some of the units study in the course include: Cell biology, microscopy, organ systems, transport in cells, and biology practical skills, The atomic structure and the periodic table, particles, elements, compounds and mixtures, chemical reactions and chemistry practical skills. Energy, forces, electricity, particle model of matter, and Physics practical skills.

Year 10 GCSE Chemistry Course.

The GCSE Chemistry course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for chemistry. Pupils are encouraged to develop a critical approach to scientific evidence and methods. There are many opportunities to carry out practical activities to enhance investigative skills. Pupils acquire and apply skills, knowledge and understanding of how science works and it's essential role in society. Pupils need to carry out practical investigations which will be assessed on the examinations. The examinations are taken at the end of the course. The topics studied include: Atomic structure and the periodic table, Particles, Elements, compounds and mixtures, Chemical reactions, Predicting and identifying reactions and products, and Chemistry practical skills.

Year 10 GCSE Biology Course.

The biology course is designed in such a way as to allow pupils to appreciate the natural world around them and make observations of natural phenomena. It aims to develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that encourages active learning through practical work for students to gain scientific knowledge, understanding and skills. The course identifies links to scientific ideas and their implications for society and helps pupils develop a critical approach to scientific evidence and methods. Whilst studying the course, pupils are expected to do practical investigations and learners will be assessed on these skills on the examinations. Topics studied include cell biology, microscopy, transport in cells, plant organ systems and some human biology.

Year 10 GCSE Physics Course.

The GCSE Physics course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for physics. Pupils are encouraged to develop a critical approach to scientific evidence and methods. There are many opportunities to carry out practical activities to enhance physics investigative skills. Pupils acquire and apply skills, knowledge and understanding of how science works and it's essential role in society. Pupils need to carry out practical investigations which will be assessed on the examinations. The examinations are taken at the end of the course. The topics studied include: particle model of matter, energy, electricity, atomic structure, and Physics practical skills.

Year 10 GCSE Combined Science Course.

The Combined Science course is designed to explore scientific principles and introduce the relevance of science through practical application. Pupils engage with the course by making sense of the science they come across in everyday life. It provides opportunities to develop scientific explanations and theories as well as to develop a critical approach to scientific evidence and methods. The development of practical skills is a fundamental and integral aspect of the study. Pupils are expected to carry out practical activities which will be assessed on the examinations. Some of the units study in the course include: Cell biology, microscopy, organ systems, transport in cells, and biology practical skills, The atomic structure and the periodic table, particles, elements, compounds and mixtures, chemical reactions and chemistry practical skills. Energy, forces, electricity, particle model of matter, and Physics practical skills.

Year 11 GCSE Biology Course. (OCR Gateway)

The biology course is designed in such a way as to allow pupils to appreciate the natural world around them and make observations of natural phenomena. It aims to develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that encourages active learning through practical work for students to gain scientific knowledge, understanding and skills. The course identifies links to scientific ideas and their implications for society and helps pupils develop a critical approach to scientific evidence and methods. Whilst studying the course, pupils are expected to do at least 8 practical investigations and learners will be assessed on these skills on the examinations. There are 2 examination papers for biology, both weighted at 50% which they sit at the end of the course. The units studied include: Cell level systems, Scaling up, Organism level systems, Community level systems, Genes, inheritance and selection, Global challenges, Biology practical skills.

Year 11 GCSE Chemistry Course. (OCR Gateway)

The GCSE Chemistry course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for chemistry. Pupils are encouraged to develop a critical approach to scientific evidence and methods. There are many opportunities to carry out practical activities to enhance investigative skills. Pupils acquire and apply skills, knowledge and understanding of how science works and it's essential role in society. Pupils need to carry out at least 8 investigations which will be assessed on the examinations. The examinations are taken at the end of the course and consist of two papers both weighted at 50%. The topics studied include: Particles, Elements, compounds and mixtures, Chemical reactions, Predicting and identifying reactions and products, Monitoring and controlling chemical reactions, Global challenges and Chemistry practical skills.

Year 11 GCSE Physics Course. (OCR Gateway)

The GCSE physics course is designed to give pupils the opportunities to develop their interest in and their enthusiasm for physics. The course provides the foundation for

understanding the material world. Scientific understanding is changing lives and is vital to the world's future prosperity, and all learners are taught essential aspects of the knowledge, methods, process and uses of science. Pupils are helped to appreciate how the complex and diverse phenomena of the natural world can be described in terms of a small number of key ideas. Pupils are encouraged to develop a critical approach to scientific evidence and methods. Pupils acquire and apply skills, knowledge and understanding of how science works and its essential role in society.

There are many opportunities to carry out practical activities to enhance investigative skills. Pupils are expected to carry out at least 8 practical investigation activities which are assessed on the examinations. There are two examinations which are sat at the end of the course, both papers are weighted at 50%. The units studied include: Matter, Forces, Electricity, Magnetism and magnetic fields, Waves in matter, Radioactivity, Energy, Global challenges and Physics practical skills.

Year 11 GCSE Combined Science Course. (OCR Gateway)

The Combined Science course is designed to explore scientific principles and introduce the relevance of science through practical application. Pupils engage with the course by making sense of the science they come across in everyday life. It provides opportunities to develop scientific explanations and theories as well as to develop a critical approach to scientific evidence and methods. The development of practical skills is a fundamental and integral aspect of the study. Pupils are expected to carry out at least Sixteen practical activities which will be assessed on the examinations. The units study in the course include: Cell level systems, Scaling up, Organism level systems, Community level systems, Genes, inheritance and selection, Global challenges, Biology practical skills, Particles, Elements, compounds and mixtures, Chemical reactions, Predicting and identifying reactions and products, Monitoring and controlling chemical reactions, Global challenges, Chemistry practical skills, Matter, Forces, Electricity, Magnetism and magnetic fields, Waves in matter, Radioactivity, Energy, Global challenges and Physics practical skills. There are 6 examinations for this course, each examination has a weighting of 16.7%.

Year 11 GCSE Combined Science Course. (OCR Gateway)

The Combined Science course is designed to explore scientific principles and introduce the relevance of science through practical application. Pupils engage with the course by making sense of the science they come across in everyday life. It provides opportunities to develop scientific explanations and theories as well as to develop a critical approach to scientific evidence and methods. The development of practical skills is a fundamental and integral aspect of the study. Pupils are expected to carry out at least Sixteen practical activities which will be assessed on the examinations. The units study in the course include: Cell level systems, Scaling up, Organism level systems, Community level systems, Genes, inheritance and selection, Global challenges, Biology practical skills, Particles, Elements, compounds and mixtures, Chemical reactions, Predicting and identifying reactions and products, Monitoring and controlling chemical reactions, Global challenges, Chemistry practical skills, Matter, Forces, Electricity, Magnetism and magnetic fields, Waves in matter, Radioactivity, Energy,

Global challenges and Physics practical skills. There are 6 examinations for this course, each examination has a weighting of 16.7%.