Policy No: 14 (C) 4

LIFE WIRRAL SPORTS SCHOOL
SECONDARY SCIENCE SCHEME OF WORK

This policy, which applies to the whole school, is publicly available on the school website and upon request a copy (which can be made available in large print or other accessible format if required) may be obtained from school office.

Document Details

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Availability: This policy applies to all activities undertaken by the school, inclusive of those outside of the normal school hours and away from the school site and is inclusive of all staff (teaching, support and agency staff), pupils on placement, contractors, the Chief Executive Officer, the Advisory Board and volunteers working in the school. All who work, volunteer or supply services to our school have an equal responsibility to understand and implement this policy being required to state that they have read, understood and will abide by this policy and its procedural documents and confirm this by signing the *Policies Register.*

Monitoring and review:

- This document will be subject to continuous monitoring, refinement and audit by the Headteacher.
- This policy was last reviewed agreed by the Advisory Board in January 2022 and will next be reviewed no later than January 2023 or earlier if significant changes to the systems and arrangements take place, or if legislation, regulatory requirements or best practice guidelines so require.

Signed:

Sarah Quilty
Headteacher

Alistair Saverimutto
Chief Executive Officer

Intent

Introduction

Imagine a school where students will explore the exciting world of science through a practical, hands-on approach to scientific study that encourages them to develop a sense of enquiry and an ability to solve problems. Students will be able to explore resources that will inspire them to plan, conduct and evaluate experiments that will enrich their scientific knowledge of the world and develop their investigative skills. Students learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level. This is how we teach Science at LIFE Wirral Sports School.

Our curriculum is designed to offer a broad and balanced education in the core science subjects, preparing students not only to be successful at GCSE and A-level/Pre-U, but to develop the skill and passion to continue in the Sciences at university and as a career. Science is taught as a specialism from Year 9 upwards. At every level, the importance of scientific enquiry is foremost, developing the ability to formulate and test hypotheses, and analyse experimental data.

Science has a major effect on our lives. Students are encouraged to consider the benefits and drawbacks of scientific and technological developments and the social, moral, spiritual and cultural issues involved. Students should also learn how scientific knowledge raises important questions for society, which in the United Kingdom, are addressed through the legislative and judicial processes of parliament and the courts respectively. This enables our society to reach decisions about controversial issues such as assisted reproduction, cloning and animal experimentation.

The aims of Science are to enable students to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.
- You will study for the GCSE Combined Science or GCSE Chemistry, Physics, Biology

In Chemistry you will learn about atomic structure and the periodic table, bonding, structure, and the properties of matter, quantitative chemistry, chemical changes, energy changes, the rate and extent of chemical changes, energy changes, the rate and extent of chemical change, organic chemistry, chemical analysis, chemistry of the atmosphere and using resources.

In Biology you will focus on understanding yourself and understanding your environment, organisation, infection and response, bioenergetics, homeostasis and response, inheritance, variation and evolution, ecology and key ideas.

In Physics you will study energy transfer, electricity, particle model of matter, atomic structure, forces, waves, magnetism and electromagnetism and space physics.

What would be expected of students?

Students will research on your own and present your findings in a written report or as a presentation to other students, using correct technical language where relevant. An active, questioning mind is very useful as a lot of

the lessons involve discussions to explain concepts and show how scientific advances have an effect on how we live our lives. You will develop practical skills and be able to manipulate data in a variety of formats. You will develop your mathematical skills and be expected to have and be able to use a calculator in all lessons.

What skills will be developed?

You will develop research skills, listening skills and analytical skills. You will become adept at investigating and presenting your findings. You will learn to work as part of a group and to listen to the views and opinions of other students. You will be able to present an informed view of topical scientific issues and develop the ability to view the issues from both sides before coming to a conclusion.

Assessment

You will be expected to work to deadlines, complete tasks in groups, carry out both course work and terminal exams for each subject.

Teaching and Learning Style

At LIFE Wirral Sports School we use a variety of teaching and learning styles in Science lessons. Our aim is to develop students' knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the students in an enquiry-based research activity. We encourage the students to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in Science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the students in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results.

We recognise that there are students of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all students by matching the challenge of the task to the ability of the students. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all students to complete all tasks);
- grouping students by ability in the room and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the students;

KS3

Building on the basic skills developed at KS2, students begin to extend their scientific vocabulary and the sophistication of their explanations of natural phenomena. They learn to select, plan and carry out investigations within a given context. They also develop their understanding of data, applying mathematical concepts and calculations, and learn to evaluate the validity and reliability of experimental results and conclusions. They begin to study the introductory units of the GCSE course in Year 9.

KS4

Students are taught the essential aspects of the knowledge, methods, processes and uses of science. They learn to devise, plan and carry out investigations taking into account key variables and evaluating the validity and reliability of the data they obtain. Students will build up a foundational knowledge of each of the core sciences and are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. This will be achieved through effective delivery of the GCSE curriculum in all sciences subjects.

KS5

The aim in KS5 is to prepare students for the transition to higher education by providing a thorough understanding of the main theoretical concepts in each of the sciences and effective preparation for A-level/Pre-U exams. Students carry out extended research and practical projects, developing their appreciation of how scientists work in the real world. They become able to critically evaluate scientific claims and data, and to apply their knowledge to unfamiliar situations, developing strong powers of analysis and deductive reasoning.

Physics

Physics Students will develop essential knowledge and understanding in pure physics and, where appropriate, the applications of physics, and the skills needed for the use of this in new and changing situations. They will also develop mathematical skills to explain the quantitative nature of physics together with practical skills and an understanding of the link between theory and experiment. They will acquire sufficient understanding and knowledge to become confident citizens in a technological world and be able to take, or develop an informed interest in matters of scientific importance. As a result, they will be able to recognise the usefulness and limitation of scientific methods and to appreciate how they can be applied in other disciplines and in everyday life and develop an appreciation of how physics has developed and is used in present day society. Ultimately, they will be able to show the importance of physics as a human endeavour which interacts with social, philosophical, economic, industrial and environmental matters.

An A level in Physics is an extremely useful qualification. The working physicist may find themselves trying to predict the stock market, testing satellites for space missions, developing new materials for industry, developing new electronic devices and components, undertaking medical physics in a hospital, teaching the next generation of physicists, trying to predict the next major earthquakes to hit San Francisco, Japan, or Birmingham, developing flight simulation software, optimising industrial manufacturing or transformation processes, developing a new measurement instrument, performing materials testing and characterisation for special applications, launching a new software company or product, performing urban planning and optimisation. In other words, the skills developed will be useful in almost any career.

Chemistry

Chemistry is the science of matter - the composition of substances, their properties and reactions. It looks at the structures of molecules that comprise all matter, and the fundamental principles which define the appearance, behaviour and changes that molecules undergo. Molecules may be large or small, simple or complex, short-lived or inert, life-saving or fatal - some are even beautiful. As the Royal Society of Chemistry asserts, “Chemistry is everything”, from the microscopic world of atoms and molecules to the macroscopic world of stars and galaxies.

'A' Level Chemistry is an excellent base for a university degree in healthcare such as medicine, pharmacy and dentistry as well as the biological sciences, physics, mathematics, pharmacology and analytical chemistry. Chemistry is also taken by many law applicants as it shows students can cope with difficult concepts. Chemistry can also complement a number of arts subjects.

A range of career opportunities including chemical, manufacturing and pharmaceutical industries and in areas such as forensics, environmental protection and healthcare. The problem-solving skills are useful for many other areas too, such as law and finance.

Studying A-level Chemistry will require you to utilise, and allow students to develop, a wide range of key skills such as problem solving, working with others, communication, numeracy, research and independent learning, practical application and analytical thinking.

Biology

'A-level' biology has been designed to immerse students in biological situations allowing them to link concepts

together. As the course progresses, more concepts are applied to explore the subject as a whole. The course places emphasis on the scientific skills of data analysis as well as deep understanding and detailed factual knowledge.

Part of the course is also dedicated to building practical scientific skills in and beyond the laboratory. Students will carry out investigations and analyse numerical data to draw valid scientific conclusions. Students have the opportunity to develop the tools to succeed as mature and effective scientists, fitted for a wide range of careers which an A-level in Biology lends itself to. A-level Biology works well in combination with the other science courses, using the principles from GCSE chemistry and physics and seeing the implications in a biological setting.

There are many obvious higher education courses that require an A-level in biology, such as medicine and veterinary medicine. As well as this there are a wide range of career paths that biology will be useful for, such as palaeontology, pharmaceuticals, forensics, genetics, neurosciences, physiotherapy, zoology, sports sciences, nutritionists, horticulture, agriculture and many, many more.

Science Curriculum Planning

The college uses the Independent Curriculum and national scheme of work for Science as the basis of its curriculum planning. The scheme has been adapted to the local circumstances of the college in that we make use of the local environment in our fieldwork and we choose a locality where the physical environment differs from that which predominates in our immediate surroundings.

We carry out our curriculum planning in Science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. The Science subject leader works this out in conjunction with teaching colleagues in each year group. In some cases, we combine the scientific study with work in other subject areas and at other times, the students study Science as a discrete subject.

Our medium-term plans give details of each unit of work for each term. The Science subject leader keeps and reviews these plans.

The class teacher is responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific learning objectives of each lesson.

At LIFE Wirral Sports School, we have planned the topics in Science so that they build upon prior learning. We ensure that there are opportunities for students of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the students are increasingly challenged as they move up through the school.

The Contribution of Science to Teaching in Other Curriculum Areas

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The students develop oral skills in Science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

Mathematics

Science contributes to the teaching of Mathematics in a number of ways. The students use weights and measures and learn to use and apply number. Through working on investigations, they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions. They also do a significant amount of work with data, producing relevant tables and graphs.

Information and Communication Technology (ICT)

Students use ICT in science lessons where appropriate. They use it to support their work in Science by learning how to find, select and analyse information on the Internet. Students use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

Formation - Personal, Social, Economic and Health Education (PSHEE) and Citizenship

Science makes a significant contribution to the teaching of PSHEE. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of Citizenship and social welfare. For example, students study the way people recycle material and how environments are changed for better or worse. Secondly, students benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive Citizenship.

Formation - Spiritual, Moral, Social and Cultural Development

Science teaching offers students many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, students develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources. Science teaches students about the reasons why people are different and, by developing the students' knowledge and understanding of physical and environmental factors, it promotes respect for other people. Science also gives the students the chance to learn about how both animals and plants grow and reproduce and introduces the complexity and delicate nature of this topic.

Teaching Science to Students with Special Educational Needs

At LIFE Wirral Sports School we teach Science to all students, whatever their ability. Science forms part of the college curriculum policy to provide a broad and balanced education to all students. Through our Science teaching we provide learning opportunities that enable all students to make progress. We do this by setting suitable learning challenges and responding to each students' different needs.

When progress falls significantly outside the expected range, the students may have Special Educational Needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to enable the students to learn more effectively. This ensures that our teaching is matched to the students' needs.

To make science lessons inclusive, teachers anticipate what barriers to taking part and learning particular activities, lessons or a series of lessons may pose for students with particular SEN and/or disabilities. So in their planning teachers consider ways of minimising or reducing these barriers so that all students can fully take part and learn. In some activities, students with SEN and/or disabilities will be able to take part in the same way as their peers. In others, some modifications or adjustments will need to be made to include everyone. We enable students to have access to the full range of activities involved in learning Science. Where students are to participate in activities outside the classroom, for example, a trip to a science museum, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all students.

Equal Opportunities (please refer further to our Equal Opportunities / Racial Equality policy)

We believe that every student should have the opportunity to achieve the highest possible standards. We ensure that all students, irrespective of their ethnicity, attainment and ability, age, disability, gender or background, have equality of access to learning. The curriculum we offer in the college encourages students to develop positive attitudes about themselves as well as to people who are different from themselves. It encourages students to empathise with others and to begin to develop the skills of critical thinking. We recognise that students have different learning styles, making appropriate provision within the curriculum to ensure each student receives the widest possible opportunity to develop their skills and abilities. We ensure that students learning English as an additional language have full access to the curriculum and are supported in their learning.

Assessment and Recording

We assess students' work in Science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary. At the end of a unit of work they make a summary judgement about the work of each students, which supports an end of topic assessment.

When assessing students, teachers need to plan carefully to give students with SEN and/or disabilities every opportunity to demonstrate what they know and are able to do, using alternative means where necessary. For example, some students who are unable to use equipment and materials, including students with a visual or hearing impairment, may not be able to achieve certain aspects of the level descriptions. QCA (2008) advises that, when a judgement against level descriptions is required, your assessment of the students' progress should discount these aspects.

At LIFE Wirral Sports School we believe that a high-quality science education provides 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 and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

We want to ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary something which aids children's knowledge and understanding not only of the topic they are studying but also of the world around them. The Advisory Board which comprises experts in SEN and in particular ASD have been actively involved in curriculum design. This means that the curriculum is fit for purpose for children with special educational needs. A large part of the curriculum is experiential as it is important for children on the autism spectrum to be able to make cohesive links that are not abstract. A fully immersive experience is required. Examples include through World Book Day, author and poet visits and a range of trips and visits which enrich and complement children's learning.

Implementation

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. Science is taught as discrete units and lessons to ensure coverage. Our units have been created to develop children's enthusiasm for and knowledge and understanding of science. With a key emphasis on hands-on learning, children develop their investigation skills while securing their grasp of key scientific principles. Children will have the opportunity to discover more about famous scientists and their discoveries, deepening their own understanding as they do so. Through these engaging and in-depth units,

children will foster a love of science and ensure complete curriculum coverage.

Staff have access to a bespoke and whole school training programme which enables them to meet the individual needs of pupils in relation to their diagnosis of ASD and other co-morbidities together with subject specific/curriculum training. Examples include: understanding Autism, how the developing brain works, visits to other schools to observe and learn from best practice, subject specific training, memberships and participation in subject associations, participating in curriculum meetings, access to on-line resources – for example Optimus Education. Quality Assurance activities include: half-termly book monitoring, learning walks, formal and informal lesson observations, including peer to peer observations, pupil surveys and curriculum team meetings.

Impact

The impact and measure of this is to ensure children not only acquire the appropriate age-related knowledge linked to the science curriculum but also the skills which will equip them to progress from their starting points and within their everyday lives. Attainment is measured using SIMs and is designed for continuous use. Teachers record the small steps pupils make and use these steps to build a bigger picture of the pupils' learning and achievements. Regular feedback is sought from pupils through the School Council (half-termly), pupil surveys, (termly), parent surveys (annually), staff surveys (annually) Confidence, Resilience and Success are core values at LIFE Wirral Sports School. This means that the acquisition of social skills and personal development are of paramount importance to our pupils to life beyond school. Impact is therefore demonstrated through social and linguistic development which the school evidences through case studies. Pupils have significant barriers to learning which the school works hard to help pupils overcome. This means that the school works with a wide variety of partners such as medical professionals, curriculum partners, parents/carers, education professionals and the wider community to promote pupils' engagement in learning.

Statutory Guidance – Science

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Links To Other Subjects

The children are given the opportunity to research, plan, predict, test and improve their ideas using relevant ICT resources to improve understanding, aid communication and enhance presentation.

Communicating information

- ICT is used to express and communicate their findings to others through drawings, graphs, writing, e-mail, etc. Pupils are given opportunities to interpret data from charts, graphs, diagrams.
- They need not always have generated the information for themselves.

Handling Information

- Through the use of databases and spreadsheets children are encouraged to collect and present information in an ordered manner to answer questions and interpret results.

Modelling and Experimental work

- The use of computer simulations encourages children to recognise the patterns in data.
- Use video and software to study models.
- Simulation software to investigate components in a circuit.

Measurement and Control

- Use of sensors to detect sounds, light levels or record temperature changes.
- Data logging to allow for exploration of reliable data, identification of patterns and analysis of detailed data.

Applications and Effects

- Awareness of a variety of instruments to enhance observations and measurements.
- Extend their ability to identify resources which may be useful to them, including tape recorders and digital cameras.
- Encourage understanding of the limitations of scientific evidence and the need to question the accuracy of displayed information.

Secondary Science Scheme of Work

The Secondary Science Scheme of Work provides an overview of the progressive, skills-based learning covered over years 7-11. It should be noted that a pupil may join the school at any point in the school year. As each child comes to our school with a variety of prior learning and attainment levels, a baseline assessment will identify gaps and inform the School on the degree of differentiation and personalisation. For example, if a pupil needs to develop early or basic skills before they can progress onto more advanced concepts and skills, this will take priority.

The sciences will be taught in ways that ensure pupils have the knowledge to enable them to develop curiosity about the natural world, insight into working scientifically, and appreciation of therelevance of science to their everyday lives, so that pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- develop understanding of the nature, processes and methods of science, through different types of scientific enquiry that help them to answer scientific questions about the world aroundthem;
- develop and learn to apply observational, practical, modelling, enquiry, problem-solving skills and mathematical skills, both in the laboratory, in the field and in other environments.
- develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.

YEAR GROUP	Autumn Term	Spring Term	Summer Term
Year 7	**Organisms** Using a microscope to see plant and animalcells. The role of diffusion. Adaptations of unicellular organisms.Cells, tissues, organs and systems. The human skeleton, muscles and joints. **Matter** Matter and its properties. The particle model and behaviour, gas pressureand diffusion. Changing state, water, mixtures, filtering and evaporation. Chromatography and distillation. **Forces and Motion** Movement and speed.Distance-time graphs. Forces and representing forces.Gravity and weight. Balanced and unbalanced forces and forcesand	**Genetics and Evolution** What is species and variation.Adaptation Reproduction System Fertilisation and Menstrual CycleFoetal Development **Waves** Nature of Waves Sound Loudness and Amplitude Pitch and Frequency The Ear and Hearing. Using sound and ultrasound. **Electricity** Static electricity. Electric fields and charge.Circuits and current. Voltage and Resistance.Electrical relationships. **The Earth and atmosphere, space** The Earth. The rock CycleCeramics The Sun and stars and Solar System.Days and	**Ecosystems** Food chains, webs and pyramids.Competition Plant ReproductionSeed Dispersal **Reaction** Working safely with acids and alkalis.Reactions of acids and alkalis. PH scale and indicators.Making Salts Chemical Reactions Metals and Non metal Reaction of metals Displacement reactions.**Energy** Conservation of energy.Energy from food. Fuels and energy resources Energy and Power calculationsEnergy stores and dissipation

	changes in movement.	seasons. The Moon and its craters.	

YEAR GROUP	Autumn Term	Spring Term	Summer Term
Year 8	Organisms Photosynthesis Minerals from the soil Gas exchange on animals Breathing Drugs, alcohol and smoking (PSHE) Nutrition, food tests, diet and digestion Matter Atoms, elements, compounds and the Periodic Table Naming Compounds Chemical Symbols and Formulae Chemical Reactions Forces Friction Drag Turning Forces Pressure in solids, liquids and gases Stress in Solids	Ecosystems Respiration Biotechnology Photosynthesis Adaptations of the lead Plant mineral ions Reactions Atoms in chemical reactions Thermal decomposition Combustion Conservation of mass Exothermic and Endothermic reactions Energy Level diagrams Bond energies Energy Work done Heat Transfer Conduction/Convection Radiation Insulation	Electromagnetism Magnets and magnetic fields Electromagnets Parallel Circuits Wave Light as a wave Reflection Refraction of light Colour Radiation of energy Modelling waves Electromagnetic Waves Earth Global Warming Carbon cycle Climate change Extracting metals Recycling

YEAR GROUP	Autumn Term	Spring Term	Summer Term
Year 9	**Genes** Natural selection Extinction Preserving biodiversity DNA and Genetics Genetic modifications Inheritance Cell Structure and transport Microscopes Animal Plant and prokaryotic cells Specialised animal and plant cells Diffusion and osmosis Adaptations for exchange Cell Division The cell cycle and mitosis Cell differentiation and cloning plants Stem cells and potential uses and concerns Organisation and digestive system Tissues and organs Structure of digestive system Chemistry of food Enzymes in digestion and maximising efficiency Covalent bonding Simple molecular structures **Chemical Calculations** Relative masses and moleculesEquations and calculations From masses to balanced equationsYields of a chemical reaction Atom economyConcentrations	**Atomic Structure** Atoms Chemical equations Separating techniques History and structure of the atoms and Ions Electronic structure **Periodic Table** Development of Electronic structure and the periodic tableGrp 1 – alkali metals Grp 7 – halogens Explaining trends **Energy and Work** Energy stores and changesConservation of energy Gravitational potential energy storesKinetic Energy Energy and dissipation**Electrical Circuits** Static Electricity Current and Charge Potential difference and resistance Component CharacteristicsSeries Circuits	**Power and Energy Transfer by Heating** Electrical appliancesEnergy and power Energy Transfer by conductionSpecific Heat capacity Heating and insulating buildings **Structure and Bonding** States of matterAtoms into ions Ionic bonding **Molecules and Matter** Blood composition and function The heart and treating heart conditionsBreathing and gas exchange Tissues and organs in plants Evaporation and transpiration **Photosynthesis** Photosynthesis reaction and adaptations of the leaf for photosynthesis Factors affecting the rate of photosynthesisInvestigating the rate of photosynthesis How plants use glucose
KS4	Teaching in the sciences in key stage 4 continues with the process of building upon and deepening scientific knowledge and the understanding of ideas developed in earlier key stages in the subject disciplines of biology, chemistry and physics.		

	Curricula at key stage 4 will comprise of approximately equal proportions of biology, chemistry and physics. The relevant mathematical skills required are covered in the programme of study for mathematics and should be embedded in the science context.