

Science 5 Year Curriculum Plan

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Teaching and Learning Vision

Knowledge is power. Information is liberating.

Kofi Annan

At Smith's Wood Academy, we believe all students, whatever their background, are able to become **experts** in the disciplines that they study. Their expertise will be achieved through quality teaching and the dissemination of deep knowledge by highly skilled and knowledgeable subject experts. The Mastery approach to teaching will prevail – in every classroom, every lesson, every day.

Our students have the right to be introduced to **deep knowledge** and a **wealth of information** from the spectrum of subjects that they study. They will be introduced to, and understand, theories and principles that have influenced, continue to influence, and will influence in the future, the world in which they live. They will be prepared to fully engage in academic discussion about their learning.

This learning will secure a successful place in society for our students. They will go further than they ever thought possible.

Teaching and Learning Vision for the Science Department

To instil scientific knowledge that enables every child to achieve the best possible outcomes to support their future ambition.

We can turn every learner into a **scientist**.

At the end of Year 11 students in **science** will....

Know and understand

Biology:

- The structure of a variety of animal and plant cells, including specialised cells.
- The processes of cell division (mitosis and meiosis) and cell differentiation.
- How substances are transported in plant and animal cells.
- Organisational structures in plants and animals, in terms of tissues, organs and organ systems.
- The structure and function of the digestive system, the circulatory system and plant organ systems (including the role of xylem and phloem).
- The causes and possible effects of a variety of communicable and non-communicable diseases including coronary artery disease, cancer, viral diseases (such as measles, HIV and TMV), bacterial diseases (such as salmonella and gonorrhoea), fungal diseases (such as rose black spot) and protist diseases (such as malaria).
- Methods of preventing and treating diseases including the human defence system, vaccination and drugs including antibiotics.
- The process of photosynthesis, including factors that affect its rate and uses of its products.
- The processes of aerobic and anaerobic respiration, including the human response to exercise and the definition of metabolism.
- Aspects of homeostasis and response in humans including the human nervous system, the human endocrine system and control of blood glucose concentration.
- The processes of sexual and asexual reproduction, including contraception and the role of hormones in sexual reproduction.
- The role of DNA and the genome in genetic inheritance, including genetic disorders, sex determination, selective breeding and genetic engineering.
- Variation and evolution, including evidence such as fossils, causes of extinction and the problem of resistant bacteria.
- How living organisms are classified, and adaptations of specific species.
- Ecology and the distribution of living organisms, including biotic and abiotic factors.
- The processes of the carbon cycle and the water cycle.
- The effect of human interaction on ecosystems in terms are waste management, land use, deforestation, global warming and conservation.

Chemistry:

- The organisation and development of the periodic table, with specific understanding of groups 0, 1 and 7.
- The properties of metals, non-metals (including their positions in the periodic table) and alloys.
- The definitions of atoms, elements, compounds, mixtures and formulations.
- The atomic model including its development and the properties of the subatomic particles (protons, electrons and neutrons).
- Electronic structure, relative atomic mass and relative formula mass.
- Ionic covalent and metallic bonding, including both the structure and properties of ionic, covalent and metallic compounds.
- The structure and properties of allotropes of carbon including diamond, graphite, graphene and fullerenes.
- The principle of conservation of mass and the importance of balancing chemical equations.
- Chemical measurements and causes of uncertainty.
- The use of moles to calculate amount of substance or to balance equations **(HT)**.
- The definition of concentration and how to calculate it.
- The reaction of metals with oxygen and acids, including the reactivity series, neutralisation and crystallisation to produce salts.
- The pH scale and neutralisation in terms of the production of water from H^+ and OH^- ions.
- The meaning of strong and weak acids in terms of the pH scale **(HT)**.
- The extraction of metals including the process and products of electrolysis.
- Alternative methods of extracting metals, including phytomining and bioleaching **(HT)**.
- The representation of reactions at electrodes as half-equations, and the processes of oxidation and reduction in terms of electrons **(HT)**.
- The different energy changes in chemical reactions, including both exothermic and endothermic reactions.
- How to measure the rate of a chemical reaction and the explanation of chemical reactions in terms of collision theory and activation energy.
- The effect of temperature, concentration and pressure on the rate of a reaction **(HT)**.
- The use of catalysts to increase the rate of chemical reactions.
- Equilibrium and reversible reactions, including energy changes in reversible reactions.
- Aspects of organic chemistry including properties of hydrocarbons, alkanes and alkenes, fractional distillation of crude oil and cracking.
- The tests for gases including hydrogen, oxygen, carbon dioxide and chlorine.
- The definition of a pure substance and the process of chromatography for chemical analysis, including the measurement of R_f value.
- The proportions of different gases in the atmosphere, including theories about the Earth's early atmosphere and how the proportions of oxygen and carbon dioxide have changed.
- The effect of humans on the Earth's atmosphere including greenhouse gases, climate change, carbon footprint and pollution.
- The means of obtaining potable water, including waste water treatment.
- How to minimise the use of the Earth's resources for sustainable development.

Physics:

- Energy stores, changes and transfers including gravitational potential energy, kinetic energy and changes in thermal energy.
- The meanings of work done and power, and how to calculate them.
- The conservation and dissipation of energy, and the efficiency of energy transfers.
- Types of energy resources (both renewable and non-renewable) and uses of these resources.
- Electricity in terms of the flow of electrons, charge, current, potential difference (AC and DC) and resistance.
- The standard circuit diagram symbols
- The differences and benefits of series and parallel circuits, including how to calculate total resistance in each type of circuit.
- Current against potential difference graphs for ohmic and non-ohmic conductors (including filament lamps, thermistors and light-dependent resistors).
- The application of light-dependent resistors in circuits.
- The wires and colour coding in a standard three-pin plug.
- How to calculate the amount of energy transferred in an electrical circuit.
- How energy is distributed around the country via the National Grid.
- Atomic structure, including the model of the atom (and how it has developed), and the properties of the subatomic particles (protons, electrons and neutrons).
- The structure and components of atoms and isotopes in terms of mass number and atomic number.
- The definition of density and the effect of changes of state on density.
- Specific heat capacity, specific latent heat and the definition of internal energy.
- The concept of pressure and how temperature effects it in terms of the particle model of matter.
- Aspects of radioactivity including radioisotopes, the three types of nuclear radiation (alpha, beta and gamma), nuclear equations, half-life and radioactive contamination.
- Types of forces (contact and non-contact, including the relationship between gravity and weight) and how to calculate resultant forces.
- Newton's three laws of motion to explain the effect of forces on an object's motion.
- The effect of forces on elastic objects (i.e. compression and extension).
- The differences between scalar and vector quantities (including distance and displacement, and speed and velocity).
- How distance-time and velocity-time graphs give information about an object's motion over a period of time.
- The effect of forces on the stopping distance of a vehicle, and the factors that affect thinking and braking distance.
- The concept of momentum and the principle of conservation of momentum **(HT)**.
- The properties of waves (in terms of wave speed, wavelength, frequency and period) for both transverse and longitudinal waves.
- The types of electromagnetic waves, including their properties and uses.
- The concept of magnetism in terms of magnetic poles and magnetic fields.
- The phenomenon of electromagnetism and its dependence upon the size and direction of an electric current.
- The motor effect including the application of Fleming's left-hand rule **(HT)**.

Be able to

- Recognise, draw and interpret diagrams of scientific models such as the structure of an atom, bonding diagrams or force diagrams.
- Identify dependent, independent and control variables within the context of a particular investigation.
- Describe practical procedures for specified purposes.
- Identify hazards in practical procedures and suggest how risks can be minimised.
- Read measurements from a scale.
- Evaluate practical methods.
Evaluate data objectively, in terms of accuracy, precision, repeatability, reproducibility and sources of random and systematic error.
- Apply the principles of sampling to a given context.
- Make informed judgements about economic, social and ethical issues to relevant aspects of scientific development.

Mathematical skills:

- Recognise and use expressions as decimals, fractions, ratios and percentages (including calculating percentage gain and loss).
- Express numbers in terms of prefixes and standard form.
- Use order of magnitude estimations in applied contexts.
- Calculate the arithmetic mean and range of a set of numeric data, and understand the terms median and mode.
- Construct or interpret frequency tables, bar charts, histograms and scatter graphs, including selecting appropriate scales and axes.
- Draw conclusions from recorded data, including identifying a correlation between two variables on a scatter diagram.
- Use mathematical symbols including =, <, <<, >>, >, ~.
- Change the subject of an equation.
- Substitute numerical values into algebraic equations, using appropriate units for physical quantities.
- Translate data between graphical and numeric form.
- Interpret graphs, including determining the slope and intercept of linear graphs.
- Draw and use the slope of a tangent to a curve to calculate rate of change.
- Interpret distance-time and velocity-time graphs to determine speed, acceleration and distance travelled.
- Calculate areas of triangles and rectangles, and surface areas and volumes of cubes.
Interpret data from tables or graphs in order to support or dispute a particular theory.
- Make predictions or interpolations/extrapolations from data tables or graphs.
- Use an appropriate number of significant figures in calculations.
- Use SI units.
- Convert units to SI units, or vice versa.

Have been exposed to the following texts

'The Science of Everyday Life: Why Teapots Dribble, Toast Burns and Light Bulbs Shine' by Marty Jopson

'Bad Science' by Ben Goldacre

'The Science Book (Big Ideas)' by DK

'Science in Seconds: 200 Key Concepts Explained in an Instant' by Hazel Muir

'The Quantum Universe: Everything that can happen does happen' by Brian Cox

'Why Does $E=mc^2$? (And why should we care?)' by Brian Cox and Jeff Forshaw

Have been exposed to the following knowledge and theories that span beyond the GCSE specification

- Fission, fusion and cold fusion.
- The basics of relativity and quantum physics.

Developed their cultural and social capital through the following extra-curricular work

- Science club runs weekly.
- Trip to the Big Bang fair.

5 Year Curriculum Plan

Year 7 science at Smith's Wood Academy

The Smith's Wood science curriculum centers on pupils mastering the *scientific alphabet* during their first year of study; just as pupils need a solid understanding of the letters of the alphabet before progressing to reading and writing, the Science curriculum at Smith's Wood Academy is developed to teach students the crucial under-pinning aspects of science before applying their knowledge in context.

In year 7, students will develop an in-depth knowledge of cells and cell biology, the structure of the atom, and energy and waves. These are key concepts in science and the depth of knowledge that pupils will obtain will enable them to fully understand concepts and contexts that are introduced in later years.

Year 7 Units of Study

Length of unit

Unit 1	ATOMIC STRUCTURE <ul style="list-style-type: none"> • Atoms, elements, compounds and mixtures • The model of the atom, and subatomic particles • Relative atomic mass and electronic structure • The three states of matter 	16 lessons
Unit 2	THE PERIODIC TABLE <ul style="list-style-type: none"> • The development of the periodic table • Metals and non-metals • Groups 0, 1 and 7 	12 lessons
Unit 3	BONDING <ul style="list-style-type: none"> • Ionic, covalent and metallic bonding 	12 lessons
Unit 4	THE PH SCALE AND NEUTRALISATION <ul style="list-style-type: none"> • Acids, alkalis and neutral substances on the pH scale • Neutralisation reactions 	3 lessons
Unit 5	CELL BIOLOGY AND PRINCIPLES OF ORGANISATION <ul style="list-style-type: none"> • Animal and plant cells • Cell specialization and differentiation • Using microscopes • Cells, tissues, organs and organ systems 	12 lessons
Unit 6	INTRODUCTION TO FORCES <ul style="list-style-type: none"> • Force diagrams • Newton's three laws of motion 	8 lessons
Unit 7	ENERGY <ul style="list-style-type: none"> • Energy stores • Energy changes and transfers • Energy resources 	20 lessons
Unit 8	WAVES <ul style="list-style-type: none"> • Properties of transverse and longitudinal waves 	8 lessons

Year 8 science at Smith's Wood Academy

In year 8, pupils at Smith's Wood Academy will continue to develop their knowledge of fundamental and over-arching concepts in science, whilst beginning to apply some of the knowledge that they have mastered during the previous academic year.

In year 8 biology, students will develop a working knowledge of animal and plant organ systems, diseases, and the fundamental processes of photosynthesis and respiration. In chemistry pupils will begin to understand chemical reactions and gain knowledge of the principle of conservation of mass, whilst in physics they will learn about electricity and be able to apply mathematical operations to their studies.

Year 8 Units of Study

Length of unit

Unit 1	ORGAN SYSTEMS <ul style="list-style-type: none"> Blood, the heart and the circulatory system Plant organ systems 	10 lessons
Unit 2	DISEASE, INFECTION AND RESPONSE <ul style="list-style-type: none"> Non-communicable diseases and the effect of lifestyle Communicable diseases The human defence system Vaccination and antibiotics 	20 lessons
Unit 3	PHOTOSYNTHESIS AND RESPIRATION <ul style="list-style-type: none"> Photosynthesis and its products Aerobic and anaerobic respiration 	8 lessons
Unit 4	QUANTITATIVE CHEMISTRY <ul style="list-style-type: none"> Relative formula mass Conservation of mass Mass changes when a reactant or product is a gas 	8 lessons
Unit 5	REACTIONS OF METALS <ul style="list-style-type: none"> Reactions of metals with oxygen Extraction of metals Reactions of metals with acids Neutralisation and salt production 	14 lessons
Unit 6	RATES OF REACTION <ul style="list-style-type: none"> Calculating rates of reaction Factors which affect the rate of reaction 	8 lessons
Unit 7	ELECTRICITY <ul style="list-style-type: none"> Circuit diagrams Charge, current, resistance and potential difference Mains electricity Power and the National Grid 	20 lessons

Year 9 science at Smith's Wood Academy

By the time pupils at Smith's Wood Academy reach the third year of their secondary science studies, they will have a powerful working knowledge of many underpinning scientific ideas, models and theories. Concepts learnt in years 7 and 8 will serve as the strong foundation upon which they build their scientific understanding.

In year 9 pupils will begin to study the full depth and breadth of the GCSE science specification, revisiting and applying previously mastered knowledge to gain an understanding of science above and beyond the requirements for their GCSE studies.

Year 9 Units of Study		Length of unit
Unit 1	CELL BIOLOGY <ul style="list-style-type: none"> Animal and plant cells (including specialised cells, stem cells and cell differentiation) Mitosis Meiosis 	11 lessons
Unit 2	INHERITANCE, VARIATION AND EVOLUTION <ul style="list-style-type: none"> Sexual and asexual reproduction DNA Genetic inheritance Variation and evolution Selective breeding and genetic engineering 	18 lessons
Unit 3	BIOENERGETICS <ul style="list-style-type: none"> Photosynthesis and the products of photosynthesis The rate of photosynthesis Aerobic and anaerobic respiration, and the response to exercise 	8 lessons
Unit 4	ATOMIC STRUCTURE <ul style="list-style-type: none"> Atoms, elements, compounds and mixtures. The model of the atom, and subatomic particles. Relative atomic mass and electronic structure. Mass number, atomic number and isotopes (<i>physics content</i>) The development of the model of the atom (<i>physics content</i>) 	7 lessons
Unit 5	THE PERIODIC TABLE <ul style="list-style-type: none"> The development of the periodic table. Metals and non-metals. Groups 0, 1 and 7. 	4 lessons
Unit 6	STATES OF MATTER AND BONDING <ul style="list-style-type: none"> The three states of matter Ionic, covalent and metallic bonding 	12 lessons
Unit 7	ENERGY CHANGES <ul style="list-style-type: none"> Energy changes during exothermic and endothermic reactions 	3 lessons

Unit 8	CHEMICAL ANALYSIS <ul style="list-style-type: none"> • Pure substances and formulations • Chromatography • Tests for gases 	4 lessons
Unit 9	FORCES <ul style="list-style-type: none"> • Newton's laws of motion • Resultant forces • Scalar and vector quantities • Graphs of motion • Stopping distances • Weight, work done and energy transferred • Forces and elasticity 	18 lessons
Unit 10	ENERGY <ul style="list-style-type: none"> • Energy stores • Energy transfers • Power and efficiency 	15 lessons

Year 10 science at Smith's Wood Academy

In year 10, pupils at Smith's Wood Academy will continue their in-depth studies of the GCSE science specification, revisiting some key knowledge and using it as a strong base for developing understanding of scientific ideas in different contexts.

Pupils will begin to study organ systems and diseases in depth in biology, chemical reactions and changes in chemistry and radioactivity and electromagnetic waves in physics.

During this academic year, pupils will continue to apply their knowledge to contextual examples and examination questions, developing their confidence in preparation for year 11.

Year 10 Units of Study		Length of unit
Unit 1	CELL BIOLOGY <ul style="list-style-type: none"> • Animal and plant cells (including specialised cells, stem cells and cell differentiation) • Mitosis • Meiosis 	11 lessons
Unit 2	ORGANISATION AND TRANSPORT OF SUBSTANCES <ul style="list-style-type: none"> • Principles of organization • Diffusion, osmosis and active transport • The digestive system • Blood, the heart and the circulatory system • Plant organ systems and transport in plants 	12 lessons
Unit 3	ORGAN SYSTEMS IN ANIMALS <ul style="list-style-type: none"> • The digestive system 	12 lessons

	<ul style="list-style-type: none"> Breathing and gas exchange Blood, the heart and the circulatory system	
Unit 4	CLASSIFICATION AND ECOLOGY <ul style="list-style-type: none"> Classification of living organisms Adaptations of living organisms Distribution of living organisms due to biotic and abiotic factors The carbon cycle and the water cycle The effect of human interaction on ecosystems 	20 lessons
Unit 5	CHEMICAL CHANGES <ul style="list-style-type: none"> Reactions of metals with oxygen Extraction of metals Reactions of metals with acids Neutralisation and salt production Electrolysis 	20 lessons
Unit 6	ENERGY CHANGES <ul style="list-style-type: none"> Energy changes during exothermic and endothermic reactions 	3 lessons
Unit 7	THE RATE AND EXTENT OF CHEMICAL CHANGE <ul style="list-style-type: none"> Rates of reactions Reversible reactions Equilibrium Catalysts 	8 lessons
Unit 8	CHEMISTRY OF THE ATMOSPHERE <ul style="list-style-type: none"> Proportions of gases in the atmosphere and how they have changed over time Greenhouse gases, global warming and carbon footprint Atmospheric pollution 	8 lessons
Unit 9	USING RESOURCES <ul style="list-style-type: none"> Sustainable development Potable water and water treatment Ways of reducing the use of resources 	8 lessons
Unit 10	ENERGY <ul style="list-style-type: none"> Energy stores Energy transfers Power and efficiency 	15 lessons
Unit 11	ELECTRICITY <ul style="list-style-type: none"> Circuit diagrams Charge, current, resistance and potential difference Mains electricity Power and the National Grid 	10 lessons
Unit 12	RADIOACTIVITY	8 lessons

	<ul style="list-style-type: none"> • Radioisotopes • Nuclear equations • Half-lives • Radioactive contamination 	
Unit 13	WAVES <ul style="list-style-type: none"> • Properties of transverse and longitudinal waves • Properties and uses of electromagnetic waves 	9 lessons

Year 11 science at Smith's Wood Academy

In year 11 pupils will have already learnt much of what they will need to know and understand for their GCSE examinations in the summer term. A large part of this academic year will be used to consolidate their learning and further develop their understanding of how to respond to GCSE assessment questions.

By the end of this academic year, students will feel confident in their scientific knowledge and understanding of assessments and will be ready to perform exceptionally well in their science examinations.

Year 11 Units of Study

Length of unit

Year 11 Units of Study		Length of unit
Unit 1	CELL BIOLOGY <ul style="list-style-type: none"> • Animal and plant cells (including specialised cells, stem cells and cell differentiation) • Mitosis • Meiosis 	4 lessons
Unit 2	ORGANISATION AND TRANSPORT OF SUBSTANCES <ul style="list-style-type: none"> • Principles of organization • Diffusion, osmosis and active transport • The digestive system • Blood, the heart and the circulatory system • Plant organ systems and transport in plants 	10 lessons
Unit 3	DISEASE, INFECTION AND RESPONSE <ul style="list-style-type: none"> • Non-communicable diseases and the effect of lifestyle • Communicable diseases • The human defence system • Vaccination and antibiotics 	4 lessons
Unit 4	PHOTOSYNTHESIS AND RESPIRATION <ul style="list-style-type: none"> • Photosynthesis and its products • Aerobic and anaerobic respiration 	4 lessons
Unit 5	INHERITANCE, VARIATION AND EVOLUTION <ul style="list-style-type: none"> • Sexual and asexual reproduction • DNA • Genetic inheritance • Variation and evolution • Selective breeding and genetic engineering 	3 lessons

Unit 6	CLASSIFICATION AND ECOLOGY <ul style="list-style-type: none"> • Classification of living organisms • Adaptations of living organisms • Distribution of living organisms due to biotic and abiotic factors • The carbon cycle and the water cycle • The effect of human interaction on ecosystems 	14 lessons
Unit 7	THE PERIODIC TABLE <ul style="list-style-type: none"> • The development of the periodic table • Metals and non-metals • Groups 0, 1 and 7 	8 lessons
Unit 8	ENERGY CHANGES <ul style="list-style-type: none"> • Energy changes during exothermic and endothermic reactions 	2 lessons
Unit 9	CHEMICAL CHANGES <ul style="list-style-type: none"> • Reactions of metals with oxygen • Extraction of metals • Reactions of metals with acids • Neutralisation and salt production • Electrolysis 	20 lessons
Unit 10	THE RATE AND EXTENT OF CHEMICAL CHANGE <ul style="list-style-type: none"> • Rates of reactions • Reversible reactions • Equilibrium • Catalysts 	4 lessons
Unit 11	CHEMISTRY OF THE ATMOSPHERE <ul style="list-style-type: none"> • Proportions of gases in the atmosphere and how they have changed over time • Greenhouse gases, global warming and carbon footprint • Atmospheric pollution 	8 lessons
Unit 12	USING RESOURCES <ul style="list-style-type: none"> • Sustainable development • Potable water and water treatment • Ways of reducing the use of resources 	8 lessons
Unit 13	ENERGY <ul style="list-style-type: none"> • Energy stores • Energy transfers • Power and efficiency 	5 lessons
Unit 14	ELECTRICITY <ul style="list-style-type: none"> • Circuit diagrams • Charge, current, resistance and potential difference • Mains electricity 	10 lessons

	<ul style="list-style-type: none"> • Power and the National Grid 	
Unit 9	FORCES <ul style="list-style-type: none"> • Newton's laws of motion • Resultant forces • Scalar and vector quantities • Graphs of motion • Stopping distances • Weight, work done and energy transferred • Forces and elasticity 	4 lessons
Unit 13	WAVES <ul style="list-style-type: none"> • Properties of transverse and longitudinal waves • Properties and uses of electromagnetic waves 	2 lessons
Unit 6	MAGNETISM AND ELECTROMAGNETISM <ul style="list-style-type: none"> • Magnetic fields • Electromagnetism • Electric motors and Fleming's left-hand rule (HT) 	4 lessons

5 Year Curriculum Plan Overview

Year 7

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Autumn Term 1	Unit 1: Atomic Structure	Unit 1: Atomic Structure	Unit 1: Atomic Structure	Unit 1: Atomic Structure	Unit 1: Atomic Structure	Unit 1: Atomic Structure	Unit 2: The Periodic Table	
Autumn Term 2	Unit 2: The Periodic Table	Unit 2: The Periodic Table	Unit 2: The Periodic Table	Unit 2: The Periodic Table	Unit 3: Bonding	Unit 3: Bonding	Unit 3: Bonding	Unit 3: Bonding
Spring Term 1	Unit 3: Bonding	Unit 4: The pH Scale and Neutralisation	Unit 4: The pH Scale and Neutralisation	Unit 5: Cell biology and principles of organisation	Unit 5: Cell biology and principles of organisation	Unit 5: Cell biology and principles of organisation		
Spring Term 2	Unit 5: Cell biology and principles of organisation	Unit 5: Cell biology and principles of organisation	Unit 6: Introduction to forces	Unit 6: Introduction to forces	Unit 6: Introduction to forces			
Summer Term 1	Unit 6: Introduction to forces	Unit 6: Introduction to forces	Unit 7: Energy	Unit 7: Energy	Unit 7: Energy	Unit 7: Energy		
Summer Term 2	Unit 7: Energy	Unit 7: Energy	Unit 7: Energy	Unit 8: Waves	Unit 8: Waves	Unit 8: Waves	Unit 8: Waves	

Year 9

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Autumn Term 1	Unit 1: Cell Biology	Unit 1: Cell Biology	Unit 1: Cell Biology	Unit 1: Cell Biology	Unit 2: Inheritance, Variation and Evolution	Unit 2: Inheritance, Variation and Evolution	Unit 2: Inheritance, Variation and Evolution	
Autumn Term 2	Unit 2: Inheritance, Variation and Evolution	Unit 2: Inheritance, Variation and Evolution	Unit 2: Inheritance, Variation and Evolution	Unit 3: Bioenergetics	Unit 3: Bioenergetics	Unit 3: Bioenergetics	Unit 3: Bioenergetics	Unit 4: Atomic Structure
Spring Term 1	Unit 4: Atomic Structure	Unit 4: Atomic Structure	Unit 5: The periodic table	Unit 5: The periodic table	Unit 6: States of matter and bonding	Unit 6: States of matter and bonding		
Spring Term 2	Unit 6: States of matter and bonding	Unit 6: States of matter and bonding	Unit 6: States of matter and bonding	Unit 7: Energy Changes	Unit 7: Energy Changes			
Summer Term 1	Unit 8: Chemical Analysis	Unit 8: Chemical Analysis	Unit 9: Forces	Unit 9: Forces	Unit 9: Forces	Unit 9: Forces		
Summer Term 2	Unit 9: Forces	Unit 9: Forces	Unit 10: Energy	Unit 10: Energy	Unit 10: Energy	Unit 10: Energy	Unit 10: Energy	

Year 10

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Autumn Term 1	Unit 1: Cell Biology	Unit 1: Cell Biology	Unit 1: Cell Biology	Unit 2 : Organisation and transport	Unit 2 : Organisation and transport	Unit 2 : Organisation and transport	Unit 3 : organ systems in animals	
Autumn Term 2	Unit 3 : organ systems in animals	Unit 3 : organ systems in animals	Unit 4 : Classification and Ecology	Unit 4 : Classification and Ecology	Unit 4 : Classification and Ecology	Unit 4 : Classification and Ecology	Unit 5 : Chemical changes	Unit 5 : Chemical changes
Spring Term 1	Unit 5 : Chemical changes	Unit 5 : Chemical changes	Unit 6 : Energy changes	Unit 7 : The rate and extent of chemical change	Unit 7 : The rate and extent of chemical change	Unit 7 : The rate and extent of chemical change		
Spring Term 2	Unit 7 : The rate and extent of chemical change	Unit 8 : Chemistry of the atmosphere	Unit 8 : Chemistry of the atmosphere	Unit 8 : Chemistry of the atmosphere	Unit 9 : Using resources			
Summer Term 1	Unit 9 : using resources	Unit 9 : using resources	Unit 10 : Energy	Unit 10 : Energy	Unit 10 : Energy	Unit 10 : Energy		
Summer Term 2	Unit 11 : Electricity	Unit 11 : Electricity	Unit 11 : Electricity	Unit 11 : Electricity	Unit 12 : Radioactivity	Unit 12 : Radioactivity	Unit 12 : Radioactivity	

