Science: The Birchwood Way

Know more and remember more. Our scheme of work is based around three distinct disciplines: biology, chemistry, and physics. The scheme of work is ambitious as it attempts to connect science as a subject to the natural world around them. We offer the chance for pupils to understand living matter and how all-living organisms interact, the particulate model to understand how particles behave, energy and the importance of using it wisely and how particles interact in advantageous and disadvantageous ways. We have structured our scheme of work so that pupils of all abilities have the chance to study key concepts at depth before moving on to more challenging content and have designed a true spiral curriculum. Our scheme of work is designed to link new subject content to previously taught key concepts. This allows pupils to develop their understanding of the key concepts by recalling, and adding to, their existing schema.

Understand the methodology of science: Pupils will begin to understand that nature and processes of science. We start by actively encouraging inquisitive thought and seek to engage pupils by getting them to ask scientific questions about the world around them. The scheme of work then offers the chance to learn about how we begin to answer the questions asked through observation, testing and evaluation. Pupils will develop key practical skills that are interwoven within a well sequenced curriculum.

Be able to use science for future life: In today's modern world there are numerous articles using 'data' to back a particular agenda. This comes from multiple sources, some to be trusted and some to be questioned. Pupils will have the ability to critically evaluate evidence and have the confidence to have conviction in their understanding of the data provided. Pupils will have the ability to articulate scientific thought and the ability to solve problems through logical thought process. This will allow pupils to make informed choices throughout the rest of their lives.

Curriculum sequencing: The science curriculum typically delves deeper into specific areas of study that are *key concepts,* this provides a more detailed exploration and deeper understanding of 'Big Ideas in Science', compared to the broader scope of the NC**.** Our sequencing and content are influenced on BEST* and their key concepts in science. We have derived this schema from planning forward across the keys stage 1,2,3 and 4 programmes of study to ensure coverage, depth, and breadth of the science curricula.

* Links to prior learning and embedding foundations for future learning. *Links to National curriculum coverage

* Links to BEST

Year 7 Curriculum journey

Topic: Energy	What is energy?

Key schema: What is delivered?

That energy can be transferred between stores in several different mechanisms.
-Stores
-Pathways
-Dissipation
-Law of conservation of energy
-Closed systems
- Energy is quantitative rather than a substance.
-Link to real word; we store money in our pockets- analogy of money
-Energy from food
When systems change in either; motion, position or temperature its energy changes and we can calculate the amount of change.

Why is this being taught now?

This topic builds upon knowledge gained in the KS2 curriculum about electrical devices and the concepts of conductors and insulators. This topic also directly relates to the other topics taught in year 7 and provides a secure foundation of knowledge ready for the delivery of subsequent topics. An understanding of energy is necessary for all physics and some biology topics in the remainder of KS3 through to KS4. It is necessary to understanding all chemical reactions including photosynthesis and respiration.

Where Programme of study is met.

National curriculum coverage:
-energy changes on changes of state (qualitative)
-comparing energy values of different foods (from labels) (kJ)
metabolism of food, burning fuels.
-energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change

Links to Ks2 National curriculum

Key stage 2 links:
Year 2: Plant and animal growth

Year 3: light, food chains,
Year 4: sound, Electricity
Year 5: Living things
Year 6: Light and electricity

Building schema- Why is this important?

Animals get their energy from plants and other animals.

The big idea of energy as a conserved, quantitative property of a changing system is a key curriculum link underpinning many Science topics.

Energy is a fundamental principle in science and interleaves between all topics and areas of specialisms. This topic builds upon knowledge gained in the KS2 curriculum about electrical devices and the concepts of conductors and insulators. This topic also directly relates to the other topics taught in year 7. An understanding of energy is necessary for all physics topics in the remainder of KS3 through to KS4. It is necessary to understanding all chemical reactions including photosynthesis and respiration.

Science: The Birchwood Way

Topic: States of matter	What are particles how they behave?

Key schema: What is delivered?

Sc1 Recording and observing the effect of increasing temperature.
Changing state
-Melting points
-Boiling points
-Kinetic energy*
Thermal energy*
Energy transfer*

Why is this being taught now?

This topic builds on the knowledge of solids, liquids and gases taught in the KS2 curriculum This topic enables students to access the chemical reactions topic later in year 7 and the periodic table topic which follows in year 8. It underpins key scientific knowledge of particle motion so students can understand principles of science such as diffusion.

Where Programme of study is met.

National curriculum coverage:
- the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure - -changes of state in terms of the particle model.
-conservation of material and of mass, and reversibility, in melting, freezing, evaporation, sublimation, condensation, dissolving
-similarities and differences, including density differences, between solids, liquids and gases
-Brownian motion in gases
-diffusion in liquids and gases driven by differences in concentration

Links to Ks2 National curriculum

Year 4
-compare and group materials together, according to whether they are solids, liquids or gases
-observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) - identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Key stage 2 links:
Year 2: Plant and animal growth
Year 3: light, food chains, Year 4: sound, Electricity
Year 5: Living things

Science: The Birchwood Way

Year 6: Light and electricity

Building schema- Why is this important?

Particles are foundational concept which will provide the basis of many scientific concepts in all areas. This topic is also a good opportunity to introduce the idea of a model to explain observations and how ideas change over time. The rest of the unit allows students to apply the model to a range of situations and demonstrate its effectiveness at explaining macro and microscopic properties of matter.

Objects are made of particles with mass. Understanding particles helps us to design our world and explain properties of different materials and their interaction when energy is introduced to them.

Atoms are a fundamental principal of science, and we need to understand matter before we introduce elements later on in year 7.
Key concept #1 Temperature
Key concept # 5
Energy stores and transfers

Science: The Birchwood Way

Topic: Cells and organ systems	Why are cell the fundamental building blocks of life and how do they form an organism?

Key schema: What is delivered?

-Function and adaptations
-Specialised cells
-Comparison of cells from both plant and animal
-Microscope
-Tissues and organs
-Specialised cells
-Uni and multi cellular organisms
-Diffusion*
-Transfer of energy in cells*
-Store of energy in cells*
-Bioenergetics*
-Drawing conclusions*

Structure of cells, movement of substances. *
-Diffusion
-How the muscular and skeletal systems interact.
-Organ systems
-Dissections
-Single and multicellular organisms

Why is this being taught now?

This topic builds on the students' knowledge of systems from the digestion topic in the KS2 curriculum. This topic enables students to access the reproductive topic in year 8 and the digestion and nutrition topic which follows in year 8.

The microscope develops how to follow a scientific method which is essential to all practical work and introduces of mathematical formulas and the FIFA method.

Where Programme of study is met.

National curriculum coverage:
-cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope
-the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts
- the similarities and differences between plant and animal cells

-the role of diffusion in the movement of materials in and between cells
-the structural adaptations of some unicellular organisms

National curriculum coverage:

- the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms.
- the structure and functions of the human skeleton, to include support, protection, movement and making blood cells
- biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles
- the function of muscles and examples of antagonistic muscles.

Links to Ks2 National curriculum.

Year 6

-describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
-give reasons for classifying plants and animals based on specific characteristics.

Key stage 2 links:

Year 2: Materials and their properties
Year 3: Forces and states of matter
Year 5: Changes in materials and reversible changes

Year 6

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
-recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
-describe the ways in which nutrients and water are transported within animals, including humans.

Key stage 2 links:

Year 3: Animals; skeletal and nutrition.
Year 4: Digestion
Year 5: Living things.
Year 6: How to keep the body healthy.

Building schema- Why is this important?

This unit pulls together the previous learning of organisational hierarchy and introduces the function of different organ systems.
Students will then examine the respiratory system in year 9, looking at the mechanism of breathing, lung volumes and the role of diffusion in gas exchange. The impacts of This topic builds on work at Key Stage 2 Identify that some animals, including humans, have skeletons for support, movement and protection. This topic bridges the gap between KS 3 and KS 4 by providing further knowledge on the relationship between cells, tissues and organs; and describe the function of the main organ systems; and describe the structure of the gas exchange system in humans.

Science: The Birchwood Way

Students will be able to:

• Describe the function of the structures in the respiratory system using knowledge of diffusion, how gases are absorbed from the alveoli into the blood stream and explain how alveoli are adapted for their function involved in breathing and compare lung volumes in boys and girls

• Calculate means and identify the range in data collected

• Describe and explain the effects of exercise on the respiratory system

• Compare aerobic and anaerobic respiration

• Describe the effects of cigarettes on the tissues of the lungs and drugs and exercise on the respiratory and other systems will be explored.

Cells and structures: Key concept

Cell shape and size: Key concept

The structure and function of DNA lead to the work of key scientists and a model for inheritance and will be covered in yr 9.

Science: The Birchwood Way

Topic: Forces	Can we see the effect of forces?

Key schema: What is delivered?

Balanced forces
-Contact and non-contact
- Effects of forces
-Conversions between Newtons and Kilograms
-Extension of a spring*Year 8
-Links between forces and energy*

Why is this being taught now?

This topic builds upon the knowledge gained in KS2 about how objects move on different surfaces and how forces can act over distances. This topic builds upon Ht1– energy and provides the necessary groundwork for topics including 8PL -light and space, 9PF – forces and motion and KS4.

Where Programme of study is met.

National curriculum coverage:
-Laws of motion
forces as pushes or pulls, arising from the interaction between two objects
-using force arrows in diagrams, adding forces in one dimension and balanced forces
-forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces,
-forces measured in newtons,
-other processes that involve energy transfer: changing motion, dropping an object,
-non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets and forces due to static electricity
-change depending on direction of force and its size.

Links to Ks2 National curriculum

Year 3
-compare how things move on different surfaces

-notice that some forces need contact between two objects, but magnetic forces can act at a distance

Year 5

- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Building schema- Why is this important?

Forces are a fundamental part of the physics curriculum. As a method for energy transfer pupils can relate the action of forces directly to the changes that occur in the motion of objects. The topic introduces several key equations which will continue to be used into KS4 Working scientifically skills include planning an investigation, presenting data in a variety of formats and plotting line graphs and calculating gradients.

Key concept#2

Describing forces

Key concept #3

Balanced and unbalanced forces

Key concept #4 Friction

Science: The Birchwood Way

Topic: Core chemistry	What is an element?

Key schema: What is delivered?

- the varying physical and chemical properties of different elements
-The difference between elements, mixtures, compounds
-Introduction into elemental symbols
-The structure of the periodic table
-Properties and links
-States of elements*
-Graph drawing*
-Conducting exploratory investigations*
Endothermic *
-Exothermic *
-Physical and chemical changes
-Recognising reactions
-Elements, mixtures, and compounds*
-Changes of state*
-Conservation of mass*
-Mass*
-Energy stored within bonds*
Using pH scale
-Neutralisation
-Everyday examples of acids and alkali's
-Bases
-Acid and alkali produce salt + water
-Reactions of metals and acids
-Chemical formula*
-Chemical reactions*

Why is this being taught now?

This topic builds on the knowledge of solids, liquids and gases taught in the KS2 curriculum This topic enables students to access the chemical reactions topic later in year 7 and the periodic table topic which follows in year 7 and year 8. Undertaking distillation allows students to **identify hazards** and **risks** and to suggest appropriate safety precautions.

This unit provides knowledge on chemical change and evidence of a chemical reaction. The topic introduces several general word equations for reactions students will continue to investigate throughout KS 3 and 4. It provides opportunity to use particle diagrams to support the idea of the conservation of mass, which is introduced in lesson 1 and simple calculations show that mass in = mass out.

Undertaking making and using indicators alongside other important class investigations allows students to **identify hazards and risks** and to suggest **appropriate safety precautions.**

The learning then moves onto acids and alkalis, using simple indicators and neutralisation as a further common chemical reaction.

Where Programme of study is met.

National curriculum coverage:

-the principles underpinning the Mendeleev Periodic Table*

the Periodic Table: periods and groups; metals and non-metals

-how patterns in reactions can be predicted with reference to the Periodic Table

-the properties of metals and non-metals

- the chemical properties of metal and non-metal oxides with respect to acidity.

- Comparison of elements, mixtures and compounds

- Elemental symbols and names

-Classification of elements based upon properties*

National curriculum coverage:

-chemical reactions as the rearrangement of atoms -Representing chemical reactions using formulae and using equations

- combustion, thermal decomposition, oxidation and displacement reactions

-the difference between chemical and physical changes

National curriculum coverage:

-defining acids and alkalis in terms of neutralisation reactions

- the pH scale for measuring acidity/alkalinity; and indicators

-Reactions of acids with metals to produce a salt plus hydrogen

- reactions of acids with alkalis to produce a salt plus water*

- what catalysts do*

Links to Ks2 National curriculum

Year 4
-Compare and group materials together, according to whether they are solids, liquids or gases
-observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)
-identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Year 5
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
-know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution

Changes in materials; groups and hardness, new materials.
-Using simple indicators and neutralisation as a further common chemical reaction.

Key concept #4 Neutralisation

Key stage 2 links:
Year 2- Materials
Year 3: Animals; skeletal and nutrition.

Building schema- Why is this important?

Particles are foundational concept which will provide the basis of many scientific concepts in all areas. This topic is also a good opportunity to introduce the idea of a model to explain observations and how ideas change over time. The rest of the unit allows students to apply the model to a range of situations and demonstrate its effectiveness at explaining macro and microscopic properties of matter.

Key concept #2
Particles in solution
Key concepts #2 Symbols and formulae
This topic builds on topics from Ht1 and KS2 by using particle theory to identify, describe and explain chemical reactions and reinforces evidence-based conservation of mass. By studying this topics student will have the prior knowledge to access topics taught in year 8 and year 9 and, underpins the basics of chemistry for GCSE.

Science: The Birchwood Way

Chemical reactions occur in cells and allow transfer of energy building on knowledge acquired at the beginning of the year.

Recognising that energy changes can our when new substances are formed.
*Key concept #4
Particles in solution
Key concept #2 Formula and symbols
Key concept #1
Atoms and molecules
Key concept #1 Reactions in solutions
Key concept #2
Combustion
Formulation of a new substance

Science: The Birchwood Way

Topic: Classification and biomechanics	How do adaptations enable survival?

Key schema: What is delivered?

- Classification is a universal principle to help scientists identify new organisms
-Binomial names
-Classification of organism based upon
-Adaptations for survival
-Vertebrates and invertebrates
-Arthropods and insect classification
-Endo and exoskeletons
-Joints and ligaments
-Muscles and antagonistic pairs

Why is this being taught now?

Students have studied organs and organ systems, and this is to study how organism interact and study the skeletal system in more depth.

Where Programme of study is met.

-the skeletal and muscular systems
-the structure and functions of the human skeleton, to include support, protection, movement and making blood cells
-biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles
-the function of muscles and examples of antagonistic muscles.
- the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
*the importance of plant reproduction through insect pollination in human food security
-how organisms affect, and are affected by, their environment, including the accumulation of toxic materials.
.

Links to Ks2 National curriculum.

Year 3
- identify that humans and some other animals have skeletons and muscles for support, protection and movement.
Year 4
-recognise that living things can be grouped in a variety of ways
- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
-recognise that environments can change and that this can sometimes pose dangers to living things.

Science: The Birchwood Way

Year 6
-describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
-give reasons for classifying plants and animals based on specific characteristics.

Building schema- Why is this important?

Students will identify major muscle groups involved in common movements and describe how some of the muscular tissue in our organs work and measure the force of some of the skeletal muscles in the body. Students have to focus on organ systems in detail. This topic builds on work at Key Stage 2 Identify that some animals, including humans, have skeletons for support, movement, and protection.

This topic bridges the gap between KS 3 and KS 4 by providing further knowledge on the relationship between cells, tissues and organs; and describe the function of the main organ systems; and describe the structure of the gas exchange system in humans.

Key concept #3 The human skeleton and muscles

Science: The Birchwood Way

Topic: Space science	How is our solar system organised.

Key schema: What is delivered?

-Space
-Solar system
-Planets
-Seasons
-Day and night
-Moon phases

Why is this being taught now?

It underpins topics in both Combined GCSE and Triple science. This topic enables students to access explanations for GCSE in parts. This topic builds on the students' knowledge of the forces and calculation. This topic builds on the students' knowledge from the Light & Shadows and Earth & Space topics in the KS2 curriculum.

Where Programme of study is met.

- non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets and forces due to static electricity
-gravity force, weight = mass x gravitational field strength (g), on Earth g=10 N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only)
-our Sun as a star, other stars in our galaxy, other galaxies
-the seasons and the Earth's tilt, day length at different times of year, in different hemispheres
-the light year as a unit of astronomical distance.
.

Links to Ks2 National curriculum.

Year 5
-Describe the movement of the Earth, and other planets, relative to the Sun in the solar system
-describe the movement of the Moon relative to the Earth
-describe the Sun, Earth and Moon as approximately spherical bodies
-use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Building schema- Why is this important?

Forces are a fundamental part of the physics curriculum. As a method for energy transfer pupils can relate the action of forces directly to the changes that occur in the motion of objects. The topic introduces several key equations which will continue to be used into KS4 Working scientifically skills include planning an investigation, presenting data in a variety of formats and plotting line graphs and calculating gradients.

The solar system and beyond: Key concept
Gravity: Key concept
The night sky, stars and galaxies
Days and seasons

Topic: Ecology	How do organisms depend on each other for survival?

Key schema: What is delivered?

- Food chains and Webs
- Disruption of food chain and webs
- Ecosystems
- Competition
-Interdependence
-Transfer of energy*

Why is this being taught now?

The Ecology topic will enrich student's knowledge of the world and will develop ideas of the interdependence between people and nature that is vital for food production, maintaining clean air and water, and sustaining biodiversity in a changing climate.

Where Programme of study is met.

National curriculum coverage:

-the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
-how organisms affect, and are affected by, their environment, including the accumulation of toxic materials

Links to Ks2 National curriculum.

Year 2

identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other -identify and name a variety of plants and animals in their habitats, including microhabitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Year 4

recognise that environments can change and that this can sometimes pose dangers to living things.

Building schema- Why is this important?

This topic builds on the students' knowledge from the everyday materials topic at KS2. It also builds on knowledge from the particles and chemical reactions topic which was taught earlier in the year. This topic enables students to access the reactivity topic in year 9.

*Understanding of energy transfer
*The requirements of energy within an ecosystem

*Peer review
*Scientific theory

Key concept #2 Interdependence and ecosystems

Topic: Electricity, current and circuits.	What is current?

Key schema: What is delivered?

-Parallel circuits
-Series circuit
-Resistance
-Components
-Voltages and current *
-Calculations*
-Graph drawing*
-Analysis and conclusions*
-Energy transfers*

Why is this being taught now?

This topic builds upon knowledge gained in KS2 regarding electrical appliances and building simple circuits. This topic builds upon the topic 7PE -energy. This topic lays the groundwork for the electricity topic studied in KS4

Where Programme of study is met.

National curriculum coverage:

-electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge
-potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current
-differences in resistance between conducting and insulating components (quantitative)
- completing an electrical circuit

Links to Ks2 National curriculum.

Year 4:

-identify common appliances that run on electricity
-construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
-identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
-recognise that a switch opens and closes a circuit and associate this with whether a lamp lights in a simple series circuit
-recognise some common conductors and insulators, and associate metals with being good conductors.

Science: The Birchwood Way

Year 6
associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
-compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
-use recognised symbols when representing a simple circuit in a diagram.
Year 5: Changes in materials; groups and hardness, new materials

Building schema- Why is this important?

This will help the students to develop their understanding of what electricity is and what happens within a circuit. Understand the scientific concepts of what happens with in circuits and how component affect the circuit. Students will have and opportunity to investigate further their learning by having an opportunity to carry out various practical's, which will also build on their skills in building circuits.
The everyday world is a result of the flow of electrical charge transferring energy *

Key concept #1 Making circuits
Key concept #2 Electric current

Topic: Waves	What is a sound wave?

Key schema: What is delivered?

-Amplitude
-Oscillation
-Superpose
-Longitudinal
-Wavelength
-Frequency
-Pitch
-Medium
-Reading sound wave diagrams
-The ear
-Energy*
-Transfer of sound between mediums*
-Vacuums*

Why is this being taught now?

Students will learn how energy is transferred by a sound wave. They will learn how to describe the properties of a wave and how that is related to the sound they hear. They will learn how the body detects soundwaves and how that information is transferred to the brain.

Where Programme of study is met.

National curriculum coverage:

-frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound
-sound needs a medium to travel, the speed of sound in air, in water, in solids
- sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal
-auditory range of humans and animals.
-pressure waves transferring energy; use for cleaning and physiotherapy by ultra-sound; waves transferring information for conversion to electrical signals by microphone

Science: The Birchwood Way

Links to Ks2 National curriculum.

Year 4

-identify how sounds are made, associating some of them with something vibrating
-recognise that vibrations from sounds travel through a medium to the ear
- find patterns between the pitch of a sound and features of the object that produced it
-find patterns between the volume of a sound and the strength of the vibrations that produced it
-recognise that sounds get fainter as the distance from the sound source increases.

Building schema- Why is this important?

This topic build upon the work of topics previously taught in KS3 such as Ht2- Cells, Ht1 Energy, Ht1 Space, Year 7 Electricity and year 8 Magnetism. This topic lays the groundwork for further study of the human body in KS4 and beyond and in the Y11 topics Waves & Electromagnetism

Key concept # 1 Production of sound

Step up programme	Step up to year 8

As students' progress through the curriculum, it is important that they understand how their prior learning provides the foundation for their future success. The knowledge, skills and understanding developed throughout year 7 are not separate from year 8; they are the building blocks that students will continue to develop and apply as they move into year 8

The 'Step Up to Year 8' programme marks an important transition for our Year 7 students as they begin to experience the knowledge, language, skills and expectations associated with a deeper level of understanding of key scientific concepts. Rather than viewing year 7 as singular learning, students will begin to make meaningful connections between their existing learning and the demands of their future learning.

Through a carefully sequenced series of lessons, students will revisit and strengthen key concepts from their prior learning before extending their knowledge and applying it in increasingly challenging contexts. This approach ensures that students recognise the value of what they have already learned, while developing the independence, resilience and confidence needed to become successful scientific learners.