



KEY STAGE 5

SPRING 2
C4 Chemical Changes - Pupils will learn about Acids and Alkali substances and how to test for pH. We will learn how to make soluble salts and how different metals react. We will also introduce and learn the basics of electrolysis.
P2 Circuits - Pupils will review current, potential difference and resistance and how these change in series and parallel circuits. We will discuss LDRs and Thermistor components. We will also learn about energy in the home and understand the purpose and components of the national grid.

SUMMER 1
C5 Energy Changes - Pupils will learn about energy changes in reactions and link this to the terms exothermic and endothermic, we will look at the reaction profiles of these reactions and the energy contained within the bonds of different compounds.
B3 Infection and Response - Pupils will compound knowledge on communicable and non-communicable diseases. We will learn how bacteria and viruses make you ill and how to our bodies prevent diseases. We will learn about vaccines and the origins of drugs and how they are developed.

SUMMER 2
C6 The Rate and Extent of Chemical changes - We will learn the effects of pressure, surface area, concentration and temperature on chemical reactions. We will also learn about reversible reactions and le Chatelier's principle.
P3 the particle Model of Matter - Pupils will learn what is meant by density and how to calculate this in both regular and irregular objects. We will also learn about latent heat and particle motion in gases

AUTUMN 1
C7 Organic Chemistry - We will review the process of fractional distillation of crude oil and link this to the varying properties of alkanes and alkenes that are produced and how these are cracked.
B4 Bioenergetics - Pupils will review key aspects of photosynthesis and link this to the structure of a leaf and key specialised cells. We will review the properties of aerobic and anaerobic respiration and link this to exercise
P4 Atomic Structure - Pupils will discover the history of the atom, review isotopes, nuclear decay and irradiation and contamination

SUMMER 1
Revision and Examinations - Revision on key identified areas based on lesson observations, exam practice books and mock examinations. We will also complete independent exam practice.
AUTUMN 2
C8 Chemical Analysis - Pupils will learn about purity and formulations and further expand their knowledge of Chromatography. We will also learn how to test for common gases.
B5 Homeostasis and Response - Pupils will learn how our body maintains various levels necessary to human life. We will explore the role of hormones in glucose control and how our bodies respond to stimuli.
P5 Forces - Pupils will review everything forces. We will learn how to interpret velocity and distance time graphs

SPRING 1
C9 Chemistry of the Atmosphere - Pupils will learn how the gases in our current atmosphere have evolved throughout the Earth lifetime and review the causes behind climate change.
B6 Inheritance, Variation and Evolution - Pupils will compound knowledge on DNA, mitosis and reproduction. We will review chromosomes and inheritance in view of variation and explore selective and genetic breeding.
P6 Waves - Pupils will compound their knowledge on waves and calculate wave speed. We will also review the Electromagnetic spectrum and its uses.

SPRING 1
C3 Quantitative Chemistry - Pupils review and calculate the relative formula mass of different compounds. Pupils will learn what is meant by a mole and how to calculate moles in given substances as well as determine limiting reactants.
B2 Organisation - Students will learn the structure and functions of the lungs, Heart and blood vessels. We will learn about communicable and non-communicable diseases and how are bodies combat the different types of pathogens.

AUTUMN 2
C2 Structure and Bonding - Pupils will learn how atoms bond to form different substances ionically, covalently and metallically. We will also learn what is meant by allotropes of carbon.
P1 Energy - Pupils will review energy stores and transfers. We will learn about Specific heat capacity, and efficiency. We will also review renewable and non-renewable energy resources and evaluate their properties and uses in different situations.

AQA GCSE Combined Science Trilogy
AUTUMN 1
C1 Atomic Structure - Pupils will expand their knowledge on the structure of atom and the properties of the subatomic particles. We will also learn how to calculate the number of each of these particles using the atomic mass and atomic number of elements and their electronic structure
B1 Cell Biology - Pupils will compound knowledge on structures and functions of sub cellular structures in plant and animal cells including specialised cells for each, we will also learn the steps of mitosis, what chromosomes are and begin to understand the sue of stem cells.

SUMMER 2 -
C4 - Useful chemical reactions - Pupils will further expand their understanding of the properties of different metals and their subsequent uses. We will also learn how to calculate relative formula mass and product percentages,
P4 - Electricity and magnetism - Pupils will expand upon previous knowledge of Current, Potential difference and Resistance. We will learn how to calculate current and Potential difference in both series and parallel circuits. We will also review real world uses of electromagnets.

SUMMER 1 -
P3 Waves, Sound and light - Pupils will apply what they have learnt about light and sound waves. We will also review and expand our knowledge on colours within the visible light spectrum and introduce the Electromagnetic spectrum.
B4 - Variation and natural selection - Pupils will expand on previous knowledge around inherited characteristics and review and make predictions using dot and cross diagrams.

SUMMER 1 -
P3 -Motion and pressure - Pupils will learn the pressure of gas depends on temperature and volume and why atmospheric pressure changes with height. We will also learn how forces make objects move, turn and pivot.
B4 - Inheritance - Pupils will learn about characteristics and determine whether they are inherited or environmental. We will also learn about the evolution of species through the process of natural selection.

SUMMER 2
C4 - The Earth - Pupils will learn how Carbon atoms move through and between our atmosphere, the Earth and the sea. We will review the impact increasing Carbon levels have on climates and environments
Revision - We will review year 8 curriculum learning. Specific focus will be given to individual need driven by observation and assessment.

AUTUMN 1 -
B1 - Cells - Students will learn about the development of microscopes and understand specialised and adapted cells in greater detail. We will also learn about prokaryotic cells and investigate diffusion and active transport.
C1 - Particle model and state change - Pupils will learn about each state of matter in greater detail as well as changes of state. We will also begin to review the limitations of the particle model.

AUTUMN 2 -
P1 - Forces and motion - Pupils will be expanding their knowledge of motion and graphs and Newtons laws. We will also be learning about resultant forces and the difference between scalar and vector quantities.
B2 - Cell systems - We will learn more detail about the levels or organisation in the human body. We will look at how different surfaces in plants and animals are adapted for their function and link this to the movement of substances.

SPRING 1 -
C2 - Atoms and periodic table - Pupils will learn about the idea of atoms in greater detail and investigate into the position and properties of subatomic particles. We will also begin to look at the different ways atoms bond together.
P2 - Energy - Pupils will build on their knowledge or energy stores and transfers and apply this to various data. We will also learn about how power stations produce energy and thermal and electrical transfer.

SPRING 2 -
B3 - Fertilisation and implantation - Pupils will compare how plants and animals reproduce, we will review methods of contraception and key stages within the menstrual cycle.
C3 - Chemical changes - We will build on pupils existing knowledge of chemical and physical properties. We will practice writing word equations and balanced symbol equations for these.

SPRING 2 -
B3 - Ecosystems and adaptation - Pupils will learn about the feeding relationships and food chains in different ecosystems. We will also learn what is meant by interdependence and how different food webs are affected by this.
C3 - Metals and other materials - Pupils will learn about the properties of metals, ceramics, polymers and composites. We will review patterns in these properties to determine the origin of the materials.

SPRING 1 -
C2 - Separation techniques - Pupils will learn about mixtures and how they relate to compounds. Pupils will be reviewing and completing various techniques to separate soluble and insoluble materials from substances as well as chromatography.
P2 - Energy - Pupils will learn about energy in foods in and fuels and compare its production in both renewable and non-renewable sources. Pupils will also learn about energy transfers in different systems.

AUTUMN 2 -
P1 - Electricity and magnetism - Pupils will learn about current, potential difference and resistance in electrical circuits. We will also look at magnetic fields and apply them to both permanent and induced magnets.
B2 - Biological processes - Pupils will learn how plants make food through the process of photosynthesis and how their leaves are adapted to maximise this reaction. We will also learn how energy is transferred through food in respiration reactions.

AUTUMN 1 -
B1 - Health and Lifestyle - Pupils will review the components of a balanced diet and healthy lifestyle. We will study the main organs in the digestive systems and role enzymes play in digestion. We will also look at the effects of drugs on the body focusing on smoking and alcohol.
C1 - The periodic table - Pupils will learn about metal and nonmetal elements and their properties. We will also look at how the elements are arranged in the periodic table to show patterns and properties.

SUMMER 2 -
P4 - Space - Pupils will learn about what we see in the night sky, and how far away things are. We will learn about the planets and the formation of our solar system. We will review seasons, why we have them, and why they are different in different places. We will also look at the phases of the moon and why there are eclipses.
Revision
Pupils we recap key information taught in each topic through each term.

SUMMER 1 -
P3 - Light - Pupils will learn about where it comes from, and the journey it takes from a source to a detector, like an eye or a camera. We will look at colours and filters and how they can be used to change the way that objects look.

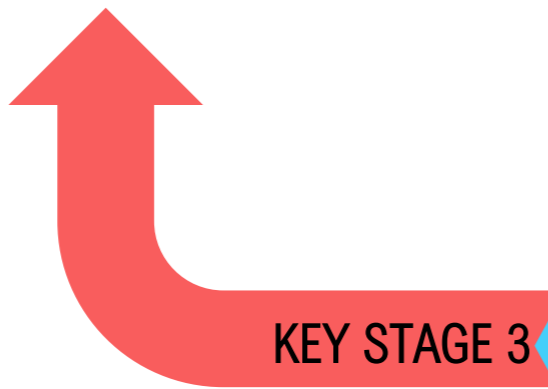
AUTUMN 1 -
B1 - Cells - Pupils will be learning about the building blocks that make all living organisms. Using microscopes, we will observe cells and their structures and discuss the special jobs that some of these cells do.
C1 - Particles and their behaviour - Pupils will learn how the arrangement, movement and separation of particles give their substances properties - as well as what happens when substances melt, boil and condense

AUTUMN 2 -
P1 - Forces - Pupils will begin to learn about different types of forces and where they come from. They will find out about contact and non-contact forces and how you know that forces are there.
B2 - Structure and function of bodily systems - Pupils will look at the levels of organisation that

SPRING 1 -
C2 - Elements, atoms and compounds - Pupils learn about atoms that make up elements and how they join in different combinations to make up all the substances on Earth and the universe.
P2 - Sound - Pupils will learn how sound is produced, how it travels, and its speed. We will begin to link this to wave properties, how we hear and how sound is used in ultrasound in everyday life.

SPRING 2 -
B3 - Reproduction - Pupils will learn about the biology of sexual reproduction between a male and female. We will also look at the physical and emotional changes that take place in males and females during adolescence.
C3 - Reactions - Pupils will learn about chemical reactions. We will look at how atoms join differently to make new substances, and why the total mass does not change. We will also introduce word equations to classify chemical reactions.

C4 - Acids and alkalis - Pupils will learn about acids, bases and alkalis. We will use indicators and the pH scale to find out how acidic or alkaline a solution is, and how to work safely with these solutions.



<p>SUMMER 2</p> <p><b>Fossils</b>-investigating fossils, their formation and how this has happened.</p> <p><b>Year 7 projects</b>-utilising scientific skills, investigate fizzes, colour changes, property changes and energy changes to result in a selection of scientific 'tricks'</p>	<p>SUMMER 1</p> <p><b>Biology - Variation</b> -investigating the variations and characteristics that can be seen in both plants and humans.</p> <p><b>Biology - Adaptations</b> -investigations about the adaptations that animals, humans and plants have to make to live within a certain environment.</p>	<p>SPRING 2</p> <p><b>Biology - The Circulatory system</b>-Talking about the circulatory system and how it works.</p> <p><b>Biology - Diet, drugs and lifestyle</b>,-discussing human diets, animals' diets and how this help to keep them functioning in society. Discussing how drugs can help or hinder lifestyles.</p>
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<p>SPRING 2</p> <p><b>5B2 Animals including humans</b></p> <p>Gestation period Growing up The rest of your life</p>	<p>SUMMER 1</p> <p><b>5P1 Forces</b></p> <p>Gravity and air resistance Friction and water resistance Machines</p>	<p>SUMMER 2</p> <p><b>5HSW Science careers</b></p> <p>Biology based careers Chemistry based careers Physics based careers</p>	<p>AUTUMN 1</p> <p><b>Biology - Living things and their habitats.</b></p> <p><b>UKS2:</b></p> <p>-understanding the different kingdoms of living things, including the animal kingdom and being able to draw keys to describe the relationships within animals</p>	<p>AUTUMN 2</p> <p><b>Physics – Electricity, Renewable/Sustainable Energy</b> understanding the concept of electricity, including circuit diagrams and changing components within a circuit such as lightbulbs, cells and buzzers</p> <p><b>Forces</b> Gravity and air resistance Friction and water resistance Machines</p>	<p>SPRING 1</p> <p><b>Physics - Light/Light Pollution</b></p> <p>-investigations into lines of light, understanding the light pollution and what issues it can cause and what cause them and thinking about how light becomes coloured and why colour is useful in everyday life.</p>
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<p>SPRING 1</p> <p><b>5C2 Earth and Space</b></p> <p>The earth in space The sun, moon and earth Movement of the earth</p>	<p>AUTUMN 2</p> <p><b>5C1 Properties and changes of materials</b></p> <p>Properties of Materials Physical processes Chemical processes</p>	<p>AUTUMN 1</p> <p><b>5B1 Living things and their habitats</b></p> <p>Reproduction in plants Insects and amphibians Birds and mammals</p>	<p>SUMMER 2</p> <p><b>Biology – The digestive system</b> –Understanding how the digestive system works and how to keep it healthy.</p> <p><b>Biology – Food Chains –</b></p> <p>-Understanding food chains and how one small change can affect everything. This will link into grouping and classifying.</p>	<p>SUMMER 1</p> <p><b>Biology – Data Collection C</b> -Understanding how to collect scientific data.</p> <p><b>Biology – Habitats</b> -understanding the different kingdoms of living things, including the animal kingdom and being able to draw keys to describe the relationships within animals</p> <p><b>Sustainability – Deforestation</b> – -Understanding what deforestation is doing to countries and how this can affect animals and their habitats.</p>
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<p>SUMMER 1</p> <p><b>3P2 Forces and Magnets</b></p> <p>Contact and non-contact forces Magnets Roller coasters - trip?</p>	<p>SUMMER 2</p> <p><b>3HSW Minecraft Science – ICT</b></p> <p>Gravity Biomes Earth resources Electricity (redstone)</p>	<p>AUTUMN 1</p> <p><b>Biology – Grouping and Classifying Living Things</b> – - understanding that animals and living things can be grouped and classified</p> <p><b>Biology –Data Collection A</b></p> <p>-Understanding how to collect scientific data.</p>	<p>AUTUMN 2</p> <p><b>Chemistry -</b></p> <p><b>States of Matter –</b></p> <p>-understanding the states of matter and how they can affect human and animals lives.</p>	<p>SPRING 1</p> <p><b>Physics – Sound</b> – -understanding how sound travels.</p> <p><b>Biology – Data Collection B</b> -Understanding how to collect scientific data.</p>	<p>SPRING 2</p> <p><b>Physics – Electricity</b> – understanding the concept of electricity, including circuit diagrams and changing components within a circuit such as lightbulbs, cells and buzzers</p> <p><b>Sustainable – Energy</b> – -Understanding what sustainable energy is and how it is used in other countries compared to the UK.</p>
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<p>SPRING 2</p> <p><b>3B2 Animals including Humans</b></p> <p>Life Cycles Animal Survival Keeping Healthy</p>	<p>SPRING 1</p> <p><b>3P1 Light – Art</b></p> <p>Light and dark Refraction Safety Shadows Edison – lightbulb</p>	<p>AUTUMN 2</p> <p><b>3C1 Rocks - Geography/history stone age</b></p> <p>Types of rocks Fossils Soil Uses of rocks Mary Anning</p>	<p>AUTUMN 1</p> <p><b>3B1 Plants - Food Technology</b></p> <p>Flowers How plants grow Seeds Plants as food Plant Hunters</p>
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