

KS2 Curriculum Planning Year 1– Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p> <p>Core Knowledge, Skills and Concepts</p>	<p>Plants</p> <ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal <p>Weekly Focus</p> <ol style="list-style-type: none"> Parts of Plants What Do Plants Need to Grow Well? What Have You Found Out? SC1 skills lesson Moving Water Pollination Fertilisation. Life Cycle 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> 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 describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics <p>Weekly Focus</p> <ol style="list-style-type: none"> Grouping living things Vertebrates/invertebrates Classification keys Habitats Environmental changes Plants Reproduce Mammals/Jane Goodall Metamorphosis Life Cycles Classifying Animals Linnaean System Microorganisms Classifying organisms in the local Habitat. 	<p>Properties and changes of materials</p> <ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> Properties of Materials thermal conductors and insulators electrical conductors Dissolving Separating Mixtures Irreversible changes 	<p>Rocks</p> <ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter <p>Weekly Focus</p> <ol style="list-style-type: none"> Types of rocks Grouping rocks Fossils Mary Anning’s contribution to palaeontology. Soil Formation Permeability of different soils. 	<p>Forces</p> <ul style="list-style-type: none"> compare how things move on different surfaces notice that some forces need contact between 2 objects, but magnetic forces can act at a distance observe how magnets attract or repel each other and attract some materials and not others compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials describe magnets as having 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing. 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> Pushes and pulls Speed with different surfaces Magnetic and non-magnetic Magnetic strength Magnetic poles Attract or repel Forces Gravity Air resistance Water resistance Friction Simple Mechanisms 	<p>Light and sound</p> <ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change 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 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> Light and dark/How do we see? Reflective surfaces/Reflecting light Using mirrors Refraction

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KS2 Curriculum Planning Year 2– Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p> <p>Core Knowledge, Skills and Concepts</p>	<p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey • describe the changes as humans develop to old age • 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Nutrition Skeleton(bones and function) 2. Muscles Digestive system 3. Teeth/tooth decay Food chains 4. Human timeline/life expectancy 	<p><u>Electricity</u></p> <ul style="list-style-type: none"> • 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 or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors • 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 	<p><u>Evolution and Inheritance</u></p> <ul style="list-style-type: none"> • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Inheritance 2. Adaptation 3. Theory of Evolution 4. Evidence for Evolution 5. Evidence for Evolution in Humans 6. Adaptation, Evolution and Human Intervention 	<p><u>Earth and Space</u></p> <ul style="list-style-type: none"> • 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Spherical Bodies 2. The Planets (Inner and outer planets) 3. Geocentric Versus Heliocentric 4. Night and Day 5. Night and Day International 6. Movement of the moon 	<p><u>States of matter</u></p> <ul style="list-style-type: none"> • 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 <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Solid, Liquid or Gas? 2. Investigating Gases 3. Heating and Cooling 4. Water changing state 5. Evaporation Investigation 6. The Water Cycle 	<p><u>Scientists and inventors</u></p> <p>To research and find key information about different Scientists and inventors throughout history. Using books and ICT and to record this information to present their findings.</p> <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Stephen Hawking - will learn about the life and work of Stephen Hawking, and carry out an investigation into Hawking’s theories on black holes. Libbie Hyman - will learn about Libbie Hyman, a zoologist whose work on invertebrates informs much of what we know about the characteristics and classification of these creatures. 2. The DNA Race - will find out about the scientists who raced to prove the structure of DNA, and the controversies surrounding this discovery. They will learn about the role of DNA in inheritance, and create their own model of a DNA molecule. Alexander Fleming - will find out about Alexander Fleming and his discovery of penicillin, and will interpret data in a scatter graph to come to a conclusion about the effects of penicillin.

	<p>Growth of babies/gestation periods</p> <p>5. Puberty Changes in old age</p> <p>6. Circulatory system Transporting water and nutrients</p> <p>7. Healthy lifestyle/exercise Drugs and Alcohol</p>	<ul style="list-style-type: none"> • use recognised symbols when representing a simple circuit in a diagram <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Electricity Electrical Appliances 2. Electrical Circuits 3. Conductors and Insulators 4. Simple circuits using switches Investigating Switches 5. Major discoveries in electricity Circuit symbols 6. Voltage 7. Electricity investigation 				<p>3. Mary Leakey - will look at the evidence for human evolution, and will learn about Mary Leakey and her role in finding significant fossil evidence, and what her fossils prove about evolution.</p> <p>Steve Jobs - will find out about the life and work of Steve Jobs, and his development of new electronics and technologies.</p> <p>4. David Attenborough - will learn about the life and work of David Attenborough and create a documentary about a living thing of their choice.</p> <p>CSI- will learn about how CSI technicians use scientific techniques to analyse evidence and prove or disprove theories. They will use chromatography to analyse the ink used in a spelling test and use this evidence to support their own theories.</p> <p>5. Margaret Hamilton Mission to the Moon - will find out about Margaret Hamilton and her invention of the software and computer code that enabled Apollo 11 to go the Moon. They will research into her achievements completing a timeline about her life.</p> <p>Neil deGrasse Tyson The Solar System - will look at the classification of planets and create fact files on the planets in our solar system through finding out about Neil deGrasse Tyson's role in the reclassification of Pluto.</p> <p>6. Eva Crane – The children will explore the Eva Crane's research into bees and will play a game about the life cycle of bees.</p> <p>Stephanie Kwolek - will investigate the hardness of materials and consider Stephanie Kwolek's invention of Kevlar. Furthermore, they will learn about Leonardo da Vinci's ideas about the</p>
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Year 7 Curriculum Planning – Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p> <p>Core Knowledge, Skills and Concepts</p>	<p>Cells – the Building Blocks of Life</p> <p>This unit is about the structure and function of specialised plant and animal cells, organisation in multicellular organisms, different types and adaptations of unicellular organisms and how plants and humans are adapted to reproduce. They will explore linked processes, including diffusion, pollination, seed dispersal, menstruation and fertilisation. They will consider environmental factors in discussing the role of insects and reasons for their demise.</p> <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Comparing plant and animal cells. Describing cells. 2. Understanding unicellular organisms 3. Organisation in multicellular organisms Comparing flowering plants 	<p>Mixing, Dissolving and Separating</p> <p>This unit will extend and further develop their ideas on separation from KS2 – for example revisiting the use of sieving and developing this to include filtration. New separation techniques – chromatography and distillation – are introduced. Students investigate dissolving, consider solubility and apply the Law of Conservation of Mass. They are asked to apply their knowledge of changes of state and of solubility to explain their uses. Students are introduced to ideas about atoms, compounds and mixtures, including the use of simple circle models.</p> <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Working safely in a laboratory Recording experiments 	<p>Forces and their effects</p> <p>This unit is about ideas of forces, friction, movement and speed. They will learn how to represent the location, size and direction of forces using arrows. They will meet situations in which forces are balanced and others in which they are unbalanced. They will also learn to identify reaction forces.</p> <p>The students will consider the effects that forces have – stretching, compressing, turning around a fulcrum, causing changes in speed or direction. They will learn that movement continues at the same speed and in the same direction unless a force acts. In analysing the force of friction, they will consider where it is desirable, where it is unwanted and how it can be increased or reduced. They will have the opportunity to investigate the effect of</p>	<p>Eating, Drinking, Breathing</p> <p>This unit is about the human digestive system and breathing system; about the role of each of the organs involved and the way that each organ is adapted to its particular function. They will learn more about a healthy diet and the consequences of not having one, and about the effects of some lifestyle choices and diseases on the breathing system. They will also learn about the links between the digestive system, breathing system and circulatory system and study how the products of digestion and breathing are exchanged in our bodies.</p> <p>They will also start to learn about how we use some of the products of breathing and digestion to generate energy.</p> <p>Weekly Focus</p>	<p>Elements, compounds and reactions</p> <p>This unit is about the ideas of atoms, elements and compounds, and ways that scientists represent them using symbols and formulas. They will learn how scientists have developed the Periodic Table and will start to learn about its groups, patterns and trends. Various elements are explored with regard to their different chemical and physical properties. Students will learn how to understand chemical reactions in terms of a rearrangement of atoms and how to represent these using circle diagrams, formulas and equations. They will study metals, non-metals and oxides.</p> <p>This unit offers a number of opportunities for students to investigate materials and reactions at first hand and use evidence to construct explanations. They explore evidence that reactions have occurred and how the properties of materials determine their applications.</p> <p>Weekly Focus</p>	<p>Energy Transfers and sound</p> <p>This unit is about how energy makes things happen, can be stored and transferred in many different ways. They will learn about useful and useless energy transfers. Students will learn about burning of fuels and how different fuels store and transfer different amounts of energy.</p> <p>They will be about to understand that sound energy is transmitted by waves being passed on by air particles. They will learn how echos occur, how the ear works and how animals can communicate with sounds that we can not hear.</p> <p>Weekly Focus</p> <ol style="list-style-type: none"> 1. Exploring energy transfers Understanding potential energy and kinetic energy Doing work 2. Looking at dynamos Understanding elastic potential energy

	<p>4. Knowing how pollination leads to fertilisation</p> <p>5. The challenges facing pollinators. Formation and dispersal of seeds.</p> <p>6. Dispersal of fruit seeds, The male reproductive system</p> <p>7. The female reproductive system, fertility, puberty and how the foetus develops</p>	<p>Recognising materials, substances and elements</p> <p>2. understanding water</p> <p>Dissolving</p> <p>Separating mixtures</p> <p>3. Dissolving and evaporating</p> <p>Extracting salt</p> <p>Understanding distillation</p> <p>4. what is air made of?</p> <p>Exploring chromatography</p> <p>5. Using chromatography</p> <p>6. Finding the best solvent</p> <p>7. modelling mixtures and separation</p>	<p>streamlining in order to develop their understanding of water and air resistance.</p> <p>The concept of speed will be explored and students will learn and practise the method for calculating it.</p> <p>This chapter offers a number of opportunities for students to relate hands-on experience to slightly more abstract ideas. They will use a range of thinking and personal skills to help their learning and support their peers.</p> <p>Weekly Focus</p> <p>1. Discovering and measuring forces.</p> <p>Understanding weight on other planets.</p> <p>Exploring the effects of forces</p> <p>2. understanding stretch and compression</p> <p>Hooke's Law</p> <p>3. friction</p> <p>The benefits of friction</p> <p>4. air and water resistance</p> <p>Streamlining</p> <p>Forces and motion</p> <p>5. how forces affect speed and direction</p> <p>speed calculations</p> <p>6. turning forces</p> <p>moments</p>	<p>1. Exploring a healthy diet</p> <p>Testing foods</p> <p>Comparing energy needs</p> <p>2. Exploring Obesity and starvation</p> <p>Deficiency diseases</p> <p>Understanding the Human Digestive System</p> <p>Understanding the start of digestion</p> <p>3. the role of digestive organs</p> <p>Introducing enzymes</p> <p>The role of bacteria</p> <p>4. How we breathe</p> <p>Measuring breathing</p> <p>5. Evaluating gas exchange in Humans</p> <p>Investigating Diffusion</p> <p>6. Exploring the effects of disease and lifestyle</p>	<p>1. Identifying metalloids</p> <p>Discovering the origin of metals</p> <p>2. Choosing elements for a purpose</p> <p>3. Combining elements</p> <p>Using models to understand chemistry</p> <p>4. Understanding what happens when an element burns</p> <p>Observing how elements react in different ways</p> <p>5. Identifying the special features of carbon</p> <p>Understanding oxidation</p> <p>6. Investigating carbonates</p> <p>Explaining changes</p>	<p>3. Knowing the difference between heat and temperature</p> <p>Thinking about fuels</p> <p>4. Investigating fuels</p> <p>5. Exploring sound</p> <p>Describing sound</p> <p>Measuring the speed of sound</p> <p>6. Understanding how sounds travels through materials</p> <p>Learning about the reflection and absorption of sound</p> <p>Hearing sounds</p> <p>7. Understanding factors affecting hearing</p> <p>Finding out about sounds we cannot hear</p>
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Year 8 Curriculum Planning – Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p> <p>Core Knowledge, Skills and Concepts</p>	<p>Getting the energy Your Body Needs</p> <p>1. Exploring the human skeleton</p> <p>Analysing the skeleton</p> <p>Understanding the role of skeletal joints</p> <p>2. Investigating muscle strength</p> <p>Analysing muscle strength</p> <p>Examining interacting muscles</p>	<p>Explaining Physical Changes</p> <p>1. Using particles to explain matter</p> <p>Understanding solids</p> <p>Exploring Brownian motion</p> <p>2. Understanding liquids and gases</p> <p>Changing state</p> <p>Understanding evaporation</p> <p>3. Exploring thermal expansion.</p> <p>Making sense of models</p>	<p>Exploring Contact and Non-Contact Forces</p> <p>1. Understanding magnetic fields</p> <p>Investigating static charge</p> <p>2. Explaining static charge</p> <p>Understanding electric fields</p> <p>Applying what we know about electrostatics</p> <p>3. Exploring gravity on Earth</p> <p>Applying our understanding of gravity to space travel</p>	<p>Looking at Plants and Ecosystems</p> <p>1. Understanding the importance of plants</p> <p>Exploring how plants make food</p> <p>Looking at leaves</p> <p>2. Exploring the role of stomata</p> <p>Investigating photosynthesis</p> <p>3. Exploring the movement of water and minerals in plants</p>	<p>Explaining Chemical Changes</p> <p>1. Exploring acids</p> <p>Exploring alkalis</p> <p>Using indicators</p> <p>2. Using universal indicator</p> <p>Exploring neutralisation</p> <p>Explaining neutralisation</p> <p>3. Understanding salts</p> <p>Exploring the reactions of acids with metals</p> <p>Exploring the reactions of acids with carbonates</p> <p>4. Investigating the effectiveness of antacids</p>	<p>Magnetism and Electricity</p> <p>1. Finding out the history of magnets</p> <p>Exploring magnetic materials</p> <p>2. Testing the strength of magnets</p> <p>Describing the Earth's magnetic field</p> <p>3. Investigating electromagnetism</p> <p>Using electromagnetism</p> <p>4. Exploring D.C. motors</p> <p>Investigating batteries</p> <p>5. Describing electric circuits</p> <p>Energy in circuits</p> <p>6. Explaining resistance</p>

<p>3. Exploring problems with the skeletal system Understanding how our muscles get energy</p> <p>4. Investigating respiration Analysing adaptations for respiration</p> <p>5. Interrogating links between respiration and body systems Exploring respiration in sport</p> <p>6. Understanding anaerobic respiration Investigating fermentation</p> <p>7. Comparing aerobic and anaerobic respiration</p>	<p>4. Explaining density of solids and liquids Explaining the density of gases</p> <p>5. Explaining concentration and pressure Exploring diffusion</p> <p>6. Conserving mass Deciding between physical and chemical changes</p> <p>7. Explaining the properties of mixtures. Using particle models</p>	<p>4. Exploring pressure on a solid surface Calculating pressure</p> <p>5. Exploring pressure in a liquid Explaining floating and sinking</p> <p>6. Exploring pressure of a gas Working with pressure</p>	<p>Investigating the importance of minerals to plants Making food differently</p> <p>4. Transferring energy Exploring the importance of insects</p> <p>Looking at other examples of interdependence</p> <p>5. Interacting with the environment Keeping a balance</p> <p>6. Understanding the effects of toxins in the environment Living together</p>	<p>Understanding the importance of acids and alkalis</p> <p>5. Exploring combustion Understanding combustion and the use of fuels</p> <p>6. Exploring the effects of burning Understanding acid rain</p>	<p>Investigating factors affecting resistance</p> <p>7. Explaining circuits using models</p>
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Year 9 Curriculum Planning – Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p> <p>Core Knowledge, Skills and Concepts</p>	<p><u>Variation and Inheritance</u></p> <p>1. Exploring differences 2. Looking closer at variation Exploring the causes of variation</p> <p>3. Learning about selective breeding Finding out how organisms survive</p> <p>4. Exploring why siblings are different Looking inside the nucleus</p> <p>5. Extracting DNA Exploring human chromosomes</p> <p>6. Passing on genes Looking at cloning</p> <p>7. Learning about extinction</p>	<p><u>Obtaining Useful Materials</u></p> <p>1. Obtaining metal ores Decomposing metal carbonates</p> <p>2. Displacement reactions Using carbon to extract iron</p> <p>3. Using carbon to extract other metals Explaining issues with metal extraction</p> <p>4. Understanding exothermic reactions Comparing endothermic and exothermic reactions</p> <p>5. Explaining ceramics and their properties Matching properties of ceramics to their uses</p> <p>6. Explaining natural polymers Using man-made polymers Explaining natural composites</p> <p>7. Using metal and ceramic-based composites Using plastic-based composites</p>	<p><u>Motion on Earth and in Space</u></p> <p>1. Drawing a distance–time graph Explaining a distance–time graph</p> <p>2. Describing relative motion Understanding equilibrium</p> <p>3. Exploring equilibrium Understanding a gravitational field</p> <p>4. Applying ideas about gravitational fields Looking at motion in the Solar System</p> <p>5. Describing stars and galaxies Explaining the effects of the Earth's orbital motion</p> <p>6. Measuring distances in the Universe</p>	<p><u>Our Health and the Effects of Drugs</u></p> <p>1. Exploring types of drugs. Understanding the impact of smoking</p> <p>2. Considering the dangers of cannabis Understanding the effects of alcohol</p> <p>3. Understanding the effects of other drugs Exploring addiction</p> <p>4. Understanding how diseases are spread Exploring the body's defences</p> <p>5. Exploring microbes Investigating the growth of bacteria</p> <p>6. Understanding antibiotics Understanding vaccination</p>	<p><u>Using our Earth Sustainably</u></p> <p>1. Understanding our atmosphere Exploring the effects of human activity</p> <p>2. Understanding the global warming debate Understanding how carbon is recycled</p> <p>3. Exploring damage to the Earth's resources Considering the importance of recycling</p> <p>4. Understanding the structure of the Earth Exploring igneous rocks</p> <p>5. Studying sedimentary rocks Using metamorphic rocks</p> <p>6. Understanding the rock cycle</p>	<p><u>Waves and Energy Transfer</u></p> <p>1. Making waves Exploring light waves</p> <p>2. Explaining properties of light waves Exploring the ray model</p> <p>3. Understanding energy transfer by light Exploring coloured light</p> <p>4. Understanding fuels and energy Explaining conduction and radiation</p> <p>5. Quantifying energy transfers</p>

Year 10 Curriculum Planning – Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
<p>Weekly focus</p>	<p>Unit 2 – Chemistry and our Earth (Investigate chemical reactivity and bonding) In this unit you will:</p>	<p>Unit 3 – Energy and Our universe (Understand ionising radiation, its uses and sources)</p>	<p>Unit 4 – Biology and our environment (investigate the relationships different organisms have with each other and their environment)</p>	<p>Unit 2 – Chemistry and our Earth (Investigate the factors involved in the rate of chemical reactions and the</p>	<p>Unit 3 – Energy and our universe (Know how electrical energy produced from different sources are transferred to homes and industry)</p>	<p>Unit 4 – Biology and our environment (Investigate the relationships different organisms have with each other and</p>

Core Knowledge, Skills and Concepts	A investigate chemical reactivity and bonding B investigate how the uses of chemical substances depend on their chemical and physical properties C investigate the factors involved in the rate of chemical reactions D understand the factors that are affecting the Earth and its environment	In this unit you will: A understand ionising radiation, its uses and sources B know how electrical energy produced from different sources can be transferred through the National Grid to homes and industry C know the components of the Solar System, the way the Universe is changing and the methods we use to explore space.	In this unit you will: A investigate the relationships that different organisms have with each other and with their environment B demonstrate an understanding of the effects of human activity on the environment and how these effects can be measured C explore the factors that affect human health	factors affecting the earth's environment) In this unit you will: A investigate chemical reactivity and bonding B investigate how the uses of chemical substances depend on their chemical and physical properties C investigate the factors involved in the rate of chemical reactions D understand the factors that are affecting the Earth and its environment	In this unit you will: A understand ionising radiation, its uses and sources B know how electrical energy produced from different sources can be transferred through the National Grid to homes and industry C know the components of the Solar System, the way the Universe is changing and the methods we use to explore space.	In this unit you will: A investigate the relationships that different organisms have with each other and with their environment B demonstrate an understanding of the effects of human activity on the environment and how these effects can be measured C explore the factors that affect human health
	1. -Atoms and atomic structure and the periodic table	1. Ionising radiation	1. Variation	1. Rates of reaction – Concentration, pressure and surface area.	1. Power- The National Grid, Transformers	1. How fertilisers affect ecosystems Pesticides and ecosystems
	2. Types of bonding	2. Radioactive decay and half life	2. Evolution	2.. Rates of reaction – Temperature of catalysts	2. A journey into our solar system The Universe, solar system and stars	2. Pollution indicators Lichen, Freshwater shrimps and algae
	3 Group 1 and Group 7 – Properties and trends	3. Uses of ionising radiation	3. Interdependence	3. Industrial Processes - Yield and atom economy	3. Optical Telescopes and Other Telescopes	3.Reducing the effects of pollution
	4. Physical properties and uses of chemicals, word equations and chemical equations	4. Nuclear fission	4. Classification and Keys	4.. Our changing atmosphere and oceans	4.Space Telescopes and Space Probes and Robots	4. Infectious disease diseases
	5.Properties of ionic and covalent substances	5. Safety in nuclear reactors	5. Agriculture and ecosystems	5. The effect of human activity	5. The changing universe - Waves of the EM Spectrum Red shift	5. Vaccination and Antibiotics
	6. Physical and chemical properties, Fractional Distillation Suitability of substance for their uses	6 Nuclear Fusion	6. Transportation and ecosystems	6. Sustainable development – choice and solutions	6. Cosmic Microwave Background Radiation, The Death of Stars	6. Lifestyle, environment and diseases
7. Concentration investigation Particles size investigation	7. Investigating electrical circuits			7 The origin of the universe: The Big bang	7. Physical activity keeps the body healthy	

Year 11 Curriculum Planning – Science

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Weekly focus	<i>Unit 1 - Principles of applied science</i>	<i>Unit 1 – Principles of applied Science</i>	<i>Unit 1 – Principles of applied Science</i>	Teacher to analyse pupil data and assess which units' pupils need to complete/achieve a higher grade.	<i>Revision sessions</i> <i>Intervention sessions</i>	
Core Knowledge, Skills and Concepts	In this unit pupils will: explore cells, organs and genes, explore the roles of the nervous and endocrine systems in homeostasis and communication, explore atomic structure and the periodic table, explore substances and chemical reactions, explore the	1. Atomic structure, Isotopes and relative atomic mass 2. The periodic table, Electronic configurations 3.Elements, Compounds and Mixtures 4.Neutralisation reactions 5. Acids and Salts, Equations for neutralisation reactions	1. Energy and it's uses 2. Energy transformations and transfers 3.Thermal energy transfer. Measuring energy 4.Energy for everything, sources of renewable energy 5. Wave Characteristics Electromagnetic Spectrum and its uses	Unit 2 – Chemistry and our Earth Unit 3 – Energy and our universe Unit 4 – Biology and our environment	<i>Final Exam – BTEC LEVEL 1 /2 Principles of Applied Science</i> Recap on learning Completing missing units (if any)	

	<p>importance of energy stores, energy transfers and energy transformations, explore the properties and applications of waves in the electromagnetic spectrum.</p> <p>1. Cells – Structure and function 2. Specialised cells 3. Organs and organ system 4. DNA and Chromosomes 5. Monohybrid inheritance 6. Homeostasis, with examples 7. How nerves carry information</p>	<p>6 Acids and metals, acids and Carbonates 7. Hazards of acids and bases</p>	<p><u>6. Assessment</u> <i>Mock exam past paper taken from Pearson's</i></p>	<p>This information should be included in T&L files</p>	<p>Signing paperwork ready to be sent to the examiners.</p>	
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