



Bowdon Church School Subject Overview for Science

Reception	Autumn 1 - Ourselves/ bodies	Autumn 2 - Seasons and weather	Spring 1 - Space	Spring 2 - Life cycles	Summer 1 - Habitats	Summer 2 - Forces
Coverage of EYFS Framework <i>Understanding the World</i>	<p><i>Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.</i></p>					
Early Learning Goals linked to Science	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants. (ELG 1)</p>		<p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. (ELG 2)</p>		<p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG 3)</p>	
General Themes	<ul style="list-style-type: none"> - My family and how I have changed. - Healthy and unhealthy foods/ staying healthy /human body. - People who help us in the community. 	<ul style="list-style-type: none"> - Changing seasons, winter and Autumn - bonfire story, staying safe on bonfire night - Remembrance, advent, 	<ul style="list-style-type: none"> - Neil Armstrong, Tim Peake - What does Earth look like? - Space, forces, light and dark, Moon observations 	<ul style="list-style-type: none"> - Life cycles - hibernation, spring, mini beasts - night and day 	<ul style="list-style-type: none"> - Safari, animals around the world - animal patterns, - habitats, climates, David Attenborough, - Protect the Jungle, weather 	<ul style="list-style-type: none"> - Around town, how do I get there? - Where in the world have you been? - Vehicles past and present - design your own transport, maps, floating and sinking
End Points	<ul style="list-style-type: none"> - say who is in ‘my family’ - give examples of healthy food -give examples of unhealthy food. -understand that brushing our teeth will help keep our bodies healthy. 	<ul style="list-style-type: none"> -say changes you can see/feel in the winter. - Colder weather, darker days, no leaves on trees etc. 	<ul style="list-style-type: none"> - we live on Earth. -name key parts of the solar system- sun, earth, some planets, stars and moon. - the moon changes shape. - astronauts go into space -the sun gives light/heat. - Tim Peake as a British astronaut. 	<ul style="list-style-type: none"> - know what a seed needs to help it grow. - know parts of a plant. - describe the changes we see in spring (lambs, daffodils, chicks, buds, weather, lighter nights, leaves on trees) - explain the life cycle of a caterpillar. 	<ul style="list-style-type: none"> - compare the climate in the jungle to Bowdon. -know some animals that live in the jungle. - know the effects of deforestation. 	<ul style="list-style-type: none"> -To notice the changes in Summer and explain how we can keep ourselves safe and cool in the sun. Draw what we can see in Summer Experiment with objects (floating and sinking) To begin to make a prediction.



<p>Skills</p>	<ul style="list-style-type: none"> - recognise and discuss the autumnal changes. - describe the features of our school grounds. - describe what we can see, hear and smell on our school grounds. 	<ul style="list-style-type: none"> - describe what we feel and hear in the outside world- Bollin walk - observe and interact with natural processes. - observe and describe the changing seasons- - observe the way animals change in Winter(hibernation) - identify why some environments are different to the ones that we live in (arctic focus) 	<ul style="list-style-type: none"> - observe and interact with natural processes- light, shadows - observe and describe sound vibration, magnets. 	<ul style="list-style-type: none"> - explain how we can care for the world around us - notice the effects of Spring and changes. - explain the lifecycle of a butterfly and the changes it goes through. 	<ul style="list-style-type: none"> - describe habitats and the animals that live there (sea, jungle, Desert, woodland) - explain how we can look after our planet and the natural world around us. 	<ul style="list-style-type: none"> - discuss the changes in Summer. - observe the natural world around us and draw what we can see. - explore floating and sinking.
<p>Vocabulary</p>	<p>family, mum, dad, mother, father, sister, brother, uncle, auntie, Grandma, Grandad. Healthy, unhealthy, hearts, bodies, fat, sugar, teeth, brushing</p>	<p>seasons, autumn, winter, cold, dark, sun, frost, ice, snow</p>	<p>Sun, moon, earth, space, solar system, star, constellations, gas, planets, astronaut</p>	<p>Caterpillar, egg, chrysalis, emerge, butterfly, transform. Plants, roots, stem, leaf, flower, petal, water, sunlight, soil, seed.</p>	<p>hot, cold, humid. rainforest, savannah, jungle, Amazon river,</p>	<p>Computer, ipad, phone, laptop, internet, information, internet safety car, bus, tram, van, train, plane, aeroplane, bike, scooter, travel, transport, vehicle globe,</p>
<p>Key Texts</p>	<p>Funny bones (Our bodies/healthy)</p>	<p>Leaf Man Stickman Tree Autumn and Winter (non fiction)</p>	<p>Whatever next Aliens love underpants How to catch a star Man on the moon Goodnight spaceman</p>	<p>The very hungry caterpillar Superworm What the ladybird heard</p>	<p>Handa's surprise Meerkat mail We're going on a lion hunt</p>	<p>Clean up Somebody swallowed Stanley</p>
<p>Purposeful enrichment opportunities</p>	<p>Nurse/doctor/dentist visit Visit from roles in school Creating a healthy fruit salad face In class talent show What do I want to be when I grow up</p>	<p>Autumn walk</p>	<p>Making space biscuits Making paper mache planet Earth Moon diary Making a rocket</p>	<p>Science week Making a bug hotel/ edgehog house Planting seeds Nature scavenger hunt</p>	<p>Monitor the weather Weather experiments Make a weather forecast video Send a postcard</p>	<p>Walk in the local area</p>



Year 1	Autumn 1 - Animals inc Humans	Autumn 2 - Seasonal Changes	Spring 1 - Everyday Materials	Spring 2 - Animals inc Humans	Summer 1 - Plants	Summer 2 - Recap/ consol
No. of lessons	6	6	6	5	5	5
Curriculum Questions Each lesson revisit <i>What is Science?</i> <i>What is a Scientist?</i> <i>What do they do?</i>	1. What are the names of human body parts? 2. What are the stages of the human life cycle? 3. What is sound and what body part is it associated with? 4. What is taste and what body part is it associated with? 5. What is touch and texture? 6. What is smell and what body part is it associated with?	1. What are the names of the four seasons and how are they identified? 2. What is a light source and which are natural/man made? 3. Which animals are nocturnal and which are diurnal? 4. Why do we have day and night? 5. How are shadows made? 6. What is darkness?	1. What is the difference between an object and the material? 2. What is the name of some materials? 3. What are the properties of some materials? (1) 4. What are the properties of some materials? (2). 5. What makes a material natural or man made? 6. How do you know if a material is magnetic or non-magnetic?	1. What food do different animals eat? 2. Whose poo is it? 3. What are the features of amphibians and reptiles? 4. What are the features of birds and fish? 5. What are the features of a mammal?	1. What are the different parts of a flowering plant and a tree? 2. What is the method for a planting experiment? 3. What are some common trees in our locality? 4. What are some common plants in our locality? 5. What were the results of my planting experiment (recording).	1. What are the different stages in the life cycle of a butterfly? 2. What are the different stages in the life cycle of a frog? 3. What animals and plants are found in a pond? 4. What parts and features does pondlife have? 5. <i>What are the main planets in our Solar System? (space topic - planetarium visit as part of our aviation history topic).</i>
Key Questions:	What will we do? (plan), What do you think will happen? (prediction), What happened? (results), What have we found out? (conclusions)					
End Points	<ul style="list-style-type: none"> - parts of the human body - stages of a human life cycle - sound gets louder the closer you are - the ear is the part of the body we hear with -the tongue is the part of the body we taste with - we sense touch through our skin - we smell with our nose - we need our sense of 	<ul style="list-style-type: none"> -name the four seasons - name some human made and natural light sources - know that nocturnal means active at night and diurnal means active in the day. - know that Earth spins to give us day and night. - know that a shadow is formed by an object blocking the ray of light from a light source. 	<ul style="list-style-type: none"> - name the material an object is made of. - group objects based on their property eg soft/hard. - distinguish whether a material is human-made or natural - know some magnetic and non magnetic materials. 	<ul style="list-style-type: none"> - identify a herbivore, carnivore and omnivore. - explain what a herbivore, omnivore and carnivore eat. - name mammals, amphibians, reptiles and birds and their features. - name common animals (including wild, pets, farm, sea) 	<ul style="list-style-type: none"> - name the parts of common flowering plants and trees - know that plants need water, sunlight and soil to grow. - name and identify some common trees found in the UK e.g.: evergreen, birch, oak. - name and identify some common plants found in the UK e.g: bluebell, pansies, daffodils, roses 	<ul style="list-style-type: none"> - name the stages of the life cycle of a butterfly (eggs, caterpillar, chrysalis, butterfly). - name the stages of the life cycle of a frog. - know what metamorphosis means - identify some animals and plants found in a pond. - <i>I can name the planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn,</i>



	smell to taste food - we see with our eyes	- know that darkness is the absence of light.			etc.	Neptune and Uranus).
Coverage of NC	A1.4	S1.1, S1.2	M1.1, M1.2, M1.3, M1.4	A1.1, A1.2, A1.3	P1.1, P1.2	
Vocabulary Scientific Topic based	Living, non living, compare, same, different, describe, explore, Head, body, eyes, ears, mouth, teeth, leg. Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue, baby, teenager, adult	Variation, features, variety, natural, compare, describe, identify, question, observe Light source, light, dark, nocturnal, diurnal, earth, spins, shadow, might, day.	Compare, describe, difference, explore, findings, identify, classify, group Object, material, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, rough, smooth, shiny,dull, see-through,	Living, non living, compare, different, features, similarities, differences, observe, measure Tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves	Data, compare, measure, scientific enquiry, experiment, fair test, variables, observe, findings, predict, Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud	Consolidation and recap of vocabulary already visited in the previous topics.
Key texts	My 5 senses Give me my bones back	The growing story				The tadpoles promise
Purposeful enrichment opportunities	- visit from a pregnant relative/ midwife/ baby					- Frogspawn (if possible) - Butterfly life cycle set to observe metamorphosis
Relevant prior learning	- self and 'their bodies'. - know that humans grow and change. - aware of senses possibly not by name or role.	- weather/ seasons - understanding of daytime/night time - know animals come out at different times	- experience of different textures - experiences of different materials	- looked at different animals - looked at animal babies - know humans are animals	- aware of the life cycle of a plant - have observed changes from seed to plant	
Useful links/ CPD	BBC Bitesize KS1 Explorfy (free) School Learning Zone					
Cross curricular links	PSHE - healthy bodies PE - healthy bodies/ balanced diet		RE - Our wonderful world/ natural/ man made PSHE - looking after our world/ Eco		Art - observational drawing of plants/ trees	



Year 2	Autumn 1 - Living things and their habitats	Autumn 2 - Animals inc Humans	Spring 1 - Use of everyday Materials	Spring 2 - Plants	Summer 1 - Using narrative - WILD	Summer 2 - Inventors and Scientists
No. of lessons	6	5	5	5	5	5
Curriculum Questions Each lesson revisit <i>What is Science?</i> <i>What is a Scientist?</i> <i>What do they do?</i>	- What do animals need to survive? How do their habitats provide this? - What things in the environment are living, dead or have never been alive? - What habitats are there in the world? - What is a microhabitat? - How do animals get food from plants and animals in their habitat? - What questions can I ask using my scientific enquiry skills to find out more about a habitat?	- What are some animal babies? - What happens to animals including humans as they grow? - What is included in a healthy diet? - How does exercise help keep our bodies healthy? - How do humans keep themselves clean? How does this keep us healthy?	- What are some everyday objects and what materials are they made from? - What are the properties of some materials? - Which materials are used for different purposes and why? - How can we change the shape of different materials? - What is recycling and how can I sort materials?	- What are the parts of a flowering plant and trees? - What do seeds and plants need to grow? - What is the life cycle of a plant? - What do plants need to grow well? - What foods do we eat and which part of the plant is it?	- How are animals suited to their habitat? - What materials can we use to make a suitable shelter? - What does a human need to keep themselves healthy? - What are the similarities and differences between different habitats? - Can I create my own habitat following certain criteria?	- Are doctors scientists? - How do we know so much about the ocean? - How can we grow tropical plants in England? - Who made raincoats waterproof? - Who taught us to wash our hands?
Key Questions:	What will we do? (plan), What do you think will happen? (prediction), What happened? (results), What have we found out? (conclusions)					
End Points	- describe an animal and the habitat it lives in, including why it lives there. - name some animals that live in a microhabitat. - name something that is living, dead and has never been alive. - describe a simple food chain.	- explain the different life stages of an animal. - say that living things need air, water and food to survive. - describe the ways that humans stay clean.	- name materials and describe a property they have e.g. metal is rigid. - name everyday objects that materials are used for eg table - wood. - identify different ways that materials can change shape .	- describe how plants grow from seeds to mature plants (Life cycle). - describe what plants need to grow healthily including sunlight, water and a suitable temperature. - use observation skills to describe what has happened to plants in	- describe how animals in the jungle are suited to their environment. - describe why I have chosen materials for a shelter. - explain the basic needs of humans and how these are achieved. - explain the similarities and differences between the habitat of a human	- Drs are scientists. They help to keep us healthy. - Elizabeth Garrett Anderson taught us how to keep ourselves healthy. - Rachel Carson taught us about foodchains -how pollution is effecting oceans and our foodchain - what the Eden Project is and why we have it in England.



				different conditions.	and the habitat of a wild animal.	- Charles Mackintosh discovered waterproof material - explain how Louis Pasteur helped us to stay healthy and why.
Coverage of NC	L2.1, L2.2, L2.3, L2.4, L2.5	A2.1, A2.2, A2.3	M2.1, M2.2	P2.1, P2.2	L2.2, L2.3, A2.3, M2.1	
Vocabulary Scientific Topic based	Scientific, investigate, questioning, recording, diagrams, observations, process, compare, findings Living, dead, never alive, suitable, basic needs, food chain, shelter, habitats, microhabitats.	Scientific, investigate, questioning, diagrams, observations, process, notice, pattern, offspring, reproduction, growth, child, young/old stages, exercise, heartbeat, breathing, hygiene, germs, disease, food types	Observe, investigate, explore, effective, characteristics, properties, classify, measure, experiment opaque, transparent and translucent, reflective, non-reflective, flexible, rigid push, pull, twist, squash, bend, stretch.	Investigate, predict, compare, observe, measure, record, conclusions, experiment As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy.	Measure, trial and error, predict, investigate, similarities, differences, fair test, explore habitat, shelter, materials, waterproof, effective, basic needs, dry, warm, strong, fir for purpose	Compare, impact, effect, scientist, impact, evaluate Healthy, doctors, ill, poorly, ocean, food chain, environment, pollution, eco system, chemicals, greenhouse, biomes, tropical rainforest, horticulturalists, Eden Project, waterproof, liquid rubber, bacteria, germs, microscope
Key texts	The most important animal of all			The wall and the wild	Wild	Scientists are saving the world
Relevant prior learning	- features of mammals, reptiles, amphibians, birds and fish.	- human body parts, life cycle of a human and senses.	- difference between object vs materials, natural/ man made and magnetic/ non-magnetic.	- the parts of a plant/ tree/ flower and started to look at the life cycle of plants.	- the parts of a plant/ tree/ flower. - classification of different groups of animals.	- awareness of significant individuals who have impacted our lives today.
Useful links/ CPD	BBC Bitesize KS1 Explorfy (free) School Learning Zone					
Cross curricular links	PSHE - looking after the environment	PE - Healthy bodies	PSHE - Eco schools reduce, reuse and recycle	Science - healthy eating PE - healthy bodies	DT - construction processes	Eco - Ocean Pollution Geography - Biomes/ climate



Year 3	Autumn 1 - Animals including Humans	Autumn 2 - Magnets and Forces	Spring 1 - Rocks	Spring 2 - Plants	Summer 1 - Plants (2)	Summer 2 - Light
No of lessons	6	6	6	6	6	6
<p>Curriculum Questions</p> <p>Each lesson revisit</p> <p><i>What is a Scientist?</i></p> <p><i>What do they do?</i></p>	<ol style="list-style-type: none"> 1. What are the main food types? 2. Do all animals have the same diet? 3. Can you name 6 bones in the human skeleton? 4. What are the 3 types of skeletons? 5. Why do animals need a skeleton? 6. Why do we need muscles and what do they do? 	<ol style="list-style-type: none"> 1. How does a magnet work? 2. Why are some materials magnetic? 3. What are everyday uses of magnets around the house and school? 4. Are push and pull opposite forces? 5. What is friction? How does friction affect the movement of objects? 6. What is gravity? 	<ol style="list-style-type: none"> 1. What do you know about rocks, soil and fossils? 2. Are there different types of rocks? 3. How are rocks formed? 4. Are all rocks the same? 5. What is a fossil? 6. What is soil and how is it formed? 7. Why are some soils more permeable than others? 	<ol style="list-style-type: none"> 1. What are the parts of a plant? 2. What do plants need to grow? 3. How does water travel around the plant? 4. How do plants and flowers reproduce? 5. How do plants spread their seeds? 6. What is the life cycle from germination to seed dispersal? 	<ol style="list-style-type: none"> 1. To identify, sketch a variety of plants at the different stages of their life cycle. 2. To observe plants that are pollinated in a variety of ways. 3. To carry out a minibeast/bug hunt <p>Bean Germination Investigation</p>	<ol style="list-style-type: none"> 1. What is light and dark? 2. Which surfaces best reflect light? 3. How are shadows formed? 4. How does a shadow change when the distance from the light source changes? 5. Does the position of the sun affect the shape and size of the shadow? 6. How can we protect our eyes from the sun?
Key Questions:	What do we change? What do we keep the same? What are we measuring?					
End Points	<ul style="list-style-type: none"> - name the food types - identify and describe a herbivore, carnivore and omnivore. - name the skull, rib cage, shoulder backbone, pelvis and jaw. - describe the different functions of endoskeletons, exoskeletons and hydrostatic skeletons. - describe the functions, protection, support and movement of skeletons and that there are 	<ul style="list-style-type: none"> - describe that there are push and pull forces - attract and repel and that gravity is a force. - name magnetic materials including cobalt, nickel or iron. - explain that magnets are found in everyday objects such as fridges, clasps, cars, underground trains, doors and compasses., - know the effect of friction on different surfaces. 	<ul style="list-style-type: none"> -there are man-made rocks and natural rocks. - different kinds of rocks - sedimentary, metamorphic or igneous -rocks are formed through erosion, sedimentation, settlement, heat and pressure. - rocks have different properties: permeability, durability. - fossils are only found in sedimentary rock/ know how they are formed. - soil is made from rock and 	<ul style="list-style-type: none"> - describe the function of the different plant parts. - describe if plants grow better with fertiliser. - describe the route water takes around a plant. - name the different parts of the anatomy of the flower. - understand the process of pollination. - name different methods of seed dispersal. - name the stages of the life cycle i.e Germinating, growing and flowering, pollination, fertilisation and seed dispersal. 	<ul style="list-style-type: none"> - know that dark is an absence of light and that light is needed to see things. - know that we see things because the light reflects off them. That different materials reflect light differently. - opaque objects block the light. - the further away the light source the shorter the shadow. - the position of the sun in the sky affects the length 	



	different types of joints. - know that muscles work in pairs to move		organic matter - leaves, twigs and dead minibeasts.		of the shadow.
Coverage of NC	A3.1, A3.2	F3.1, F3.2, F3.3, F3.4, F3.5, F3.6	R3.1, R3.2, R3.3	P3.1, P3.2, P3.3, P3.4	L3.1, L3.2, L3.3, L3.4, L3.5
Vocabulary Scientific Topic based	Classify, compare, describe, diagram, gather, observe, research, review, identify Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints	Comparative test, compare, conclusion, criteria, data, describe, explanation, observe, predict, question, research Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar, ring, button, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, north/ south pole	Changes, classify, identify, group, describe, difference, explain, investigate, observe, research, similarity, difference Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	Answers, changes over time, conclusion, describe, diagram, equipment, findings, investigate, measure, observe over time, prediction, record, results, review Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)	Accurate, changes, compare, conclusion,, describe, develop, diagram, equipment, fair, test, findings, investigate, measure Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous
Key texts		Guided reading Texts about Sir Isaac Newton and Magnes the Shepherd	LPBig Dreams: Mary Anning The street beneath my feet Stone girl Bone girl		
Purposeful enrich opportunities				RHS Trip	
Relevant prior learning See KS1 Curriculum for more detail	- animal species and their needs/ habitats (inc humans) - what a carnivore, herbivore and omnivore is - the importance of exercise/ balanced diet.	- some materials can be changed by squashing, bending, twisting and stretching	- object vs material is different - identify/ name a variety of materials and explain their properties (grouping them accordingly).	- know that seeds grow into plants - know life cycle of plants - know what plants need to grow.	- know some sources of light - links to seasons - nocturnal and diurnal animals - what darkness it - how shadows are made
Useful links/ CPD	BBC Bitesize Y3 Explorify - (free) School Learning Zone				
Cross curricular links	PE - movement	DT - levers and linkage	History - Stone age		



Year 4	Autumn 1 - The Digestive System	Autumn 2 - States of Matter	Spring 1 - Electricity	Spring 2 - Sound	Summer 1 - Living Things and their Habitats	Summer 2 - Living Things and their Habitats - Conservation
No of lessons	6	6	6	6	6	6
<p>Curriculum Questions</p> <p>Each lesson revisit</p> <p><i>What is a Scientist?</i></p> <p><i>What do they do?</i></p>	<ol style="list-style-type: none"> 1. What are the parts of the digestive system? 2. What are the functions of parts of the digestive system? 3. Why and how do we digest food? (practical) 4. What are the functions of our different teeth? 5. What causes tooth decay? (experiment) 6. What are the roles of different plants and animals in the food chains? 	<ol style="list-style-type: none"> 1. What are the 3 states of matter? 2. What are the properties of the states of matter, inc their particles? 3. How can we change materials between solids and liquids - what are these processes called? 4. How can we turn materials between liquid and gas and what are these processes called? 5. What changes in state occur in the water cycle? 6. How can we separate different materials? 	<ol style="list-style-type: none"> 1. What is electricity? 2. What is an electrical conductor? 3. How can we be safe around electricity? 4. What does a switch do in a circuit? 5. What are the various parts of a circuit? 6. What are volts and how can they be managed in a circuit? 	<ol style="list-style-type: none"> 1. What is sound? 2. How are different sounds made? 2. How does sound travel through different materials? 3. How do we hear sound? 4. What happens when you change the pitch and volume of sound? 5. What is the best insulator / conductor for sound? 	<ol style="list-style-type: none"> 1. Explore different habitats 2. Research a habitat 3. Explore how animals can be classified 4. Create a classification key 5. Adaptations and classification within species 6. Explore and classify pond plants 	<ol style="list-style-type: none"> 1. Describe ecosystems and how they are affected by changes in the seasons 2. Understand human impact on the environment through deforestation 3. Explore air pollution 4. Understand water pollution 5. Explore methods that can be used to conserve water 6. Understand that humans can have a positive impact on nature
Key Questions:	What do we change? What do we keep the same? What are we measuring?					
End Points	<ul style="list-style-type: none"> - know the parts of the digest system - know the functions of parts of the digestive system - Know why and how we digest food in our bodies. - Know the importance of our teeth and the causes of tooth decay. - Know how plants and animals depend on each 	<ul style="list-style-type: none"> - know that materials exist in 3 states of matter: solids, liquids/ gases. - Know that materials can change state through processes of solidification, melting, evaporation and condensation. - Know the changes of state within the water 	<ul style="list-style-type: none"> - electricity is the flow of electrons. - name the components of an electrical circuit - make an electrical circuit - name electrical conductors and insulator - troubleshoot a broken circuit - explain how to be safe around electricity 	<ul style="list-style-type: none"> - Sound is vibrations - vibrations travel differently through solid, liquids and gases - height of the wave shows the volume of sound - frequency shows the pitch - know parts of the ear and how they function. 	<ul style="list-style-type: none"> - Understand and describe the characteristics of different habitats. - Create and use classification keys to group animals and plants. - Explain how adaptations support species survival and classification. 	<ul style="list-style-type: none"> - Describe how ecosystems are affected by seasonal changes. - Evaluate human impacts on the environment, including deforestation and pollution. - Explore conservation methods and how humans can positively impact nature.



	other through food chains.	cycle and why it is important globally.				
Coverage of NC	A4.1, A4.2, A4.3	Sm4.1, Sm4.2, Sm4.3	S4.1, S4.2, S4.3, S4.4, S4.5		E4.1, E4.2, E4.3, E4.4, E4.5	L4.1, L4.2, L4.3
Vocabulary Scientific Topic based	Aim, changes, conclusion, describe, diagram, equipment, evaluate, fair test, findings, investigate, measure, predict, record, scientific enquiry nutrition, mouth, teeth, oesophagus, stomach, acid, bile, pancreas, duodenum, small and large intestine, rectum, anus, enzyme, producer, consumer, predator, prey	Answers, changes, chart, data, describe, diagram, difference, equipment, explain, findings, gather, identify, investigate, method, observe, plan, predict, question, results solid, liquid, gas, heating, cooling, particle, energy, properties, melting, evaporation, condensation, solidification, freezing	Changes, compare, conclusion, describe, diagram, difference, explanation, group, identify, investigate, observe, present, question, record, similarity Pitch, volume, vibration, wave, frequency, particles, ear drum, ear canal, electric signal.	Compare, impact, develop, investigate, evidence, findings, method, present, plan, question, research Environmental science, influence, legacy, chemist, physicist, mathematician, research, code breaking, enigma, logical reasoning	Accurate, aim, answers, changes, fair test, conclude, data, describe, diagram, impact, equipment, findings, identify, investigate, key, predict, record Atoms, electrons, insulators, conductors, cell, circuit, bulb, buzzer, wire, switch, crocodile clips, voltage, appliance.	Identify, classify, grouping, compare, criteria, describe, similar, different, observe, sort Animals, plants, fungi, prokaryotes, protoctista, mammals, birds, reptiles, fish, amphibians, vertebrates, invertebrates, arachnids, molluscs, crustaceans, insects and annelids
Key texts				Little People, Big Dreams collection		
Purposeful enrich opportunities			Play instruments, string phones, sound detectives/ sound mapping	Project on a scientist of their choice and present to class.	Make a working circuit. Measure the brightness of bulb.	Bug hunts, data collection
Relevant prior learning See KS1 and Y3 Curriculum for more detail	- can name body parts - humans have skeletons/ muscles - food is body's fuel - humans are animals	-experience of solids when looking at properties of materials - experience of liquids in their daily life	- the 5 senses. What they are and which body part is responsible for each one.	- understand the concept of significant individuals - have learnt about different significant scientists (see above)	- looked at sources of light, including electric lights - learned about light and dark	- learned about habitats and how different animals need different habitats - know the basic needs of animals and humans
Useful links/ CPD	BBC Bitesize Y4 School Learning Zone Explorify - (free)					
Cross curricular links			Music, geography	Computing, RSE, science, English, geography	English, DT.	Maths, geography, computing



Year 5	Autumn 1 - Earth and Space	Autumn 2 - Forces	Spring 1 - Properties and changes in materials	Spring 2 - Living things and their habitats	Summer 1 - Human reproduction	Summer 2 - Scientists
Number of lessons	6	6	6	12 for both topics including minimum 3 weeks on RSE-linked work		6
<p>Curriculum Questions</p> <p>Each lesson revisit</p> <p><i>What do experts in Science know? (substantive)</i></p> <p><i>What do experts in Science do? (disciplinary)</i></p>	<ol style="list-style-type: none"> 1. What is space? 2. What is the movement of the Earth relative to the sun and the moon relative to the earth? 3. What causes day and night and the seasons? 4. What is the difference between Geocentric V Heliocentric models? 5. Who are some key scientists in this field and what is their legacy? 6. What are the current affairs regarding space? 	<ol style="list-style-type: none"> 1. What is a force and what do they do? 2. What is gravity and who 'discovered' it? 3. What is air resistance and what are its effects? 4. What is water resistance and buoyancy? 5. What is friction and what are the effects of it? 6. What are the advantages of leavers, pulleys and gears in machinery? 	<ol style="list-style-type: none"> 1. What are the materials and properties of everyday materials? 2. What is thermal insulation and conductivity? 3. What is a reversible change? 4. What is an irreversible change? 5. What is electrical conductivity? 6. What have we learnt during this topic? 	<ol style="list-style-type: none"> 1. What is asexual and sexual reproduction? 2. What is the lifecycle of an insect? 3. What is the lifecycle of an amphibian? 4. What is the lifecycle of a bird? 5. What is the lifecycle of a human and how do we change with age? 6. What have we learnt during this topic? 	<ol style="list-style-type: none"> 1. Recap - how does the human body change throughout life? 2. How does the human body change during puberty? 3. What are the different types of relationships we have as humans? 4. How are human babies made? 5. How are human babies born? 6. What have we learnt during this topic? 	<ol style="list-style-type: none"> 1. Who is Sir Isaac Newton and what is his legacy? 2. Who is Galileo Galilei and what is his legacy? 3. Who is Archimedes and what is his legacy? 4. Who are Spencer Silva and Ruth Benerito? 5. Who is Dmitri Mendeleev? 6. Who is Jane Goodall and what is her legacy?
Key Questions:	What do we change? (independent variable), What are we measuring? (dependent variable), What do we keep the same? (control variable)					
End Points	<ol style="list-style-type: none"> 1. To understand the terms universe, galaxy, solar system, stars, planets and moons. 2. Know the order of the planets in the solar system. 3. Know what causes day and night and seasons. 4. Explain the difference between Geocentric and Heliocentric models and explain why the former 	<ol style="list-style-type: none"> 1. Understand how forces act on objects to make them speed up, slow down, change direction or change shape 2. Know how the first theory of gravity was developed 3. Understand the effect gravity has on an object and how gravity is measured 	<ol style="list-style-type: none"> 1. Compare and group everyday materials by their properties 2. Suggest reasons for the particular uses of everyday materials 3. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 4. Suggest how mixtures 	<ol style="list-style-type: none"> 1. Compare and contrast asexual and sexual reproduction 2. Describe the life cycle and reproduction of a plant. 3. Describe the life cycle and reproduction of an insect 4. Describe the life cycle and reproduction of an amphibian 5. Describe the life cycle 	<ol style="list-style-type: none"> 1. Describe the stages of the human lifecycle 2. Describe the changes that happen during puberty and the reason for these changes 3. Describe the process of human conception 4. Know the gestation period of humans 5. Understand how babies are born 	<p>Understand and explain the legacies of:</p> <ol style="list-style-type: none"> 1. Isaac Newton 2. Galileo Galilei 3. Archimedes 4. Spencer Silva & Ruth Benerito 5. Dmitri Mendeleev 6. Jane Goodall



	theory gave way to the latter. 5. observe, measure, record and identify patterns for the movement of the planets over time.	4. Know the effects of air resistance and buoyancy 5. Know the effects of water resistance 6. Know the effects of friction. 7. Understand the usages of machines to deliver mechanical advantage.	might be separated, including filtering, sieving and evaporating 5. Know that dissolving and mixing are reversible changes 6. Understand that some chemical changes result in the formation of new materials, and that this kind of change is not reversible	and reproduction of a bird		
Longitudinal Studies	1. Space: Mapping the positions of of the planets in the solar system every 2 months over an academic year 2. Earth: Recording length and direction of a shadow in a fixed point over an academic year					
Coverage of NC	E5.1, E5.2, E5.3, E5.4	F5.1, F5.2, F5.3	M5.1, M5.2, M5.3, M5.4, M5.5, M5.6	A5.1, L5.1, L5.2		
Vocabulary Scientific Topic based	classify, conclusion, data, describe, diagram, evaluate, evidence,, gather, identify, record, pattern seeking, justify, observation, prediction, repeat readings Asteroid, Mercury, Atmosphere, Orbit, Moon, Heliocentric, Planet names, Comet, Celestial Bodies, Pluto (dwarf planet) Rotate, Core, Equator, Gravitational Pull, Poles, Spherical, Universe, Galaxy, Milky Way, NASA	Accuracy, compare, conclusion, data, describe, develop, diagram, difference, equipment, evaluate, evidence, explain, findings, investigate, justify, measure, observe, reasons, relationship, results Forces, Gravity, Earth's Gravitational Pull, Weight, Mass, Friction, Air Resistance, Water Resistance, Buoyancy, Streamlined, Mechanism, Pulleys, Levers, Cogs, Gears, Isaac Newton, Forcemeter	Compare, conclusion, data, describe, diagram, equipment, evaluate, explanation, findings, gather, investigate, measure, justify, observations, plan, precision, prediction, record, review Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, permeable, reversible/non-reversible change, burning, rusting, new material	Relationship, compare, describe, difference, similarities, observations, question Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Impact, legacy, conclusion, criteria, develop, evidence, explain, findings, gather, observations, results, review, impact	
Key texts	Phoenix					
Relevant prior learning	- 4 seasons and the changes - linked this to weather changes and the length of	- know about magnets and how forces can act between 2 objects	- identify/compare suitability of materials. - know that objects made	- know about the life cycle of humans and that we grow into adults - know that flowers play a significant part in cycle of	- know some other key scientists that have developed/ modified key	

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<p>See KS1, Y3 and 4 Curriculum for more detail</p>	<p>the day/ nighttime</p>	<ul style="list-style-type: none"> - know how magnets attract or repel each other. - group magnetic/ non magnetic materials together. 	<ul style="list-style-type: none"> from some materials can change shape. - group materials according to properties - know about solids, liquids and gases/ changes in state 	<p>flowering plants - pollination, seed formation and dispersal.</p>	<p>ideas linked to the ways we live our lives today</p>	
<p>Useful links/ CPD</p>	<p>BBC Bitesize - Y5 School Learning Zone Explorify - (free)</p>					
<p>Cross curricular links</p>				<p>PSHE - about relationships</p>	<p>PSHE - about relationships</p>	



Year 6	Autumn 1 - Healthy Bodies	Autumn 2 - Healthy Bodies	Spring 1 - Living things/habitats	Spring 2 - Evolution and inheritance	Summer 1 - Light <small>(Taught as extra lessons across the year)</small>	Summer 2 - Electricity <small>(Taught as extra lessons across the year)</small>
No of lessons	6	6	6	6	4	6
Curriculum Questions Each lesson revisit <i>What do experts in Science know? (substantive)</i> <i>What do experts in Science do? (disciplinary)</i>	1. What is the function of the heart? 2. Experiment- How does exercise affect your heart rate? 3. How do I display scientific data accurately? 4. How does a double circulation work? 5. What is in our blood and why do we need it? 6. Different components of blood - RBC,WBC, platelets 6. (Writing) My day as a red blood cell.	1. Are all drugs bad for us? 2. What are the effects of a socially acceptable drug on the human body? 3. How do illegal drugs affect us? 3. How does sleep benefit us physically and mentally? 4. What does it mean to have a balanced diet? 5. Healthy lifestyle - diet, mental health etc 6. (Writing) Letter to our future self.	1. What is classification? 2. What is a species? 3. Vertebrate classes 4. To use and construct a branching database for classification 5. To research Carolus Linnaeus. 6. Create a biography / fact file of Carolus Linnaeus	1. Why do offspring look like their parents? 2. What is adaptation? 3. How does variation enable 'survival of the fittest'? 4. What is evolution? 5. Work like a scientist - bird beak experiment. 6. How do fossils support the theory of evolution?	1. How does light travel from a light source to our eyes? 2. How can we see things that are not sources of light? 3. How are shadows formed? 4. Why is the shape of a shadow the same shape as the object itself?	1. What will the effect of adding more cells to a circuit have on the component? 2. What will happen to a bulb if you use a cell with a higher voltage? 3. What will happen if you add more components to a circuit? 4. What will happen if a switch is turned off/ on? 5. Draw symbols for wire, cell, bulb, motor and buzzer.
Key questions:	What do we change? (independent variable), What are we measuring? (dependent variable), What do we keep the same? (control variable)					
End Points	- The heart pumps blood in the blood vessels around to the lungs and body. - To understand why exercise affects the heart (increase pulse to get blood and thus oxygen to muscles) - To be able to accurately	- Understand that diet, exercise, drugs and lifestyle have an impact on the way our bodies function. - Alcohol, caffeine, smoking - to create a poster about the effects of one on the body. -To understand the	- Living things can be formally grouped according to characteristics. -Plants and animals are two main groups but there are other living things that do not fit into these groups e.g. bacteria and yeast, and fungi.	- living things have offspring - features are inherited from the parents. - offspring are not identical to parents and vary from each other. - Plants and animals have characteristics that make them suited (adapted) to	- Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. - The light may come directly from light sources, but for other objects some light must be reflected from the	- Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. - If you use a battery with a higher voltage, the same thing happens. - Adding more bulbs to a circuit will make each bulb



	<p>record results and evaluate them.</p> <ul style="list-style-type: none"> - To understand how the double circulation works. - To know that nutrients, water and oxygen are transported in the blood. - To understand the function of the components of blood. -To be able to write a first person summary about blood. 	<p>dangers of illegal drugs.</p> <ul style="list-style-type: none"> -Understand the importance of sleep. -The importance of a nutritional diet and the impact an unbalanced diet has on our bodies. -To be able to write a letter about healthy living. 	<ul style="list-style-type: none"> -Animals can be divided into two main groups: (vertebrates); (invertebrates). -Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. - To create and use branching databases effectively - To produce a fact file about Linnaeus 	<p>their environment.</p> <ul style="list-style-type: none"> - If environment changes rapidly, some species may not survive -If environment changes slowly, some species can survive in greater numbers to reproduce and pass on features. - evolution. - Fossils give evidence of what lived on Earth millions of years - evidence to support evolution theory - Darwin and Wallace observed how living things adapt to different environments. 	<p>object into our eyes for the object to be seen.</p> <ul style="list-style-type: none"> - Objects that block light (are not fully transparent) will cause shadows. - Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object. 	<p>less bright.</p> <ul style="list-style-type: none"> - Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. - Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. - Can recognise and draw the symbols for electrical circuits
Coverage of NC	A6.1, A6.2, A6.3		Lh6.1, Lh6.2	Ev6.1, Ev6.2, Ev6.3	L6.1, L6.2, L6.3, L6.4	E6.1, E6.2, E6.3
Vocabulary Scientific Topic based	<p>Accuracy, repeated results, bar chart, compare, conclusion, criteria, data, describe, difference, explain, fair test</p> <p>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle</p>	<p>impact, conclude, describe, identify, group, justify, observations, pattern seeking, question, reasoning, refute, relationship, review</p> <p>Carbohydrates, fats, protein, fatigue, concentration, memory substance abuse, prescription, controlled drugs, caffeine, cigarettes, nicotine, tobacco, alcohol, addicted</p>	<p>Classify, group, identify, relationship, compare, data, criteria, diagram, explain, present, database</p> <p>Classification MRS GREN</p> <p>Vertebrates, birds, fish, amphibians, reptiles, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering, Carl Linnaeus</p>	<p>Relationship, classify, group, identify, justify, changes over time, measure, criteria, evaluate, observations over time, pattern seeking</p> <p>Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, Charles Darwin</p>	<p>Aim, answers, changes, compare, record, conclude, criteria, variable, evidence, explain, fair test, findings, measure, method, observe, predict, present, question, results</p> <p>Light, plus straight lines, light rays, shadow, transparent, opaque, reflect, bounce</p>	<p>Answers, compare, conclude, develop, diagram, equipment, evaluate, explain, fair test, findings, gather, investigate, justify, method, observations, predict, present, record, results, variable</p> <p>Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</p>
Key texts	Pig Heart Boy					
Relevant prior learning	<ul style="list-style-type: none"> - life cycle of a human and changes in bodies - sexual reproduction 	<ul style="list-style-type: none"> - significance of healthy lifestyles - knowledge of balanced diet 	<ul style="list-style-type: none"> - differences in habitat and species - different species need 	<ul style="list-style-type: none"> - lifecycle of humans 	<ul style="list-style-type: none"> - sources of light - definition of darkness - how shadows are formed/ 	<ul style="list-style-type: none"> - what electricity is - what volts are - safety around electricity

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<p>See KS1, Y3,4 and 5 Curriculum for more detail</p>	<ul style="list-style-type: none"> - puberty - some body parts and their function 	<ul style="list-style-type: none"> - knowledge of the digestive system - skeletons and muscles 	<ul style="list-style-type: none"> different habitats, - 5 animal kingdoms@ - vertebrates and invertebrates 		<ul style="list-style-type: none"> altered - movement of the sun - surfaces and light reflection 	<ul style="list-style-type: none"> - use of switches - what conductors are
<p>Useful links/ CPD</p>	<p>BBC Bitesize Y6 School Learning Zone Explorify - (free)</p>					
<p>Cross curricular links</p>	<p>English -Cross curricular writing Maths - time/ timing beats PE - physical exercise on body</p>	<p>English - cross curricular writing PSHE - self worth and looking after ourselves.</p>	<p>ICT - databases and classification</p>	<p>English - cross curricular writing RE - Creation and Evolution</p>		



National Curriculum Statutory requirements (referenced in the above table)			
Working Scientifically Year 1 and 2	<p><i>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: asking simple questions and recognising that they can be answered in different ways; observing closely, using simple equipment; performing simple tests; identifying and classifying; using their observations and ideas to suggest answers to questions; gathering and recording data to help in answering questions.</i></p>		
Year 1	Animals, including humans (A1)	Everyday materials (M1)	Seasonal changes (S1)
	<p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (A1.1)</p> <p>identify and name a variety of common animals that are carnivores, herbivores and omnivores (A1.2)</p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) (A1.3)</p> <p>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (A1.4)</p>	<p>distinguish between an object and the material from which it is made (M1.1)</p> <p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock (M1.2)</p> <p>describe the simple physical properties of a variety of everyday materials (M1.3)</p> <p>compare and group together a variety of everyday materials on the basis of their simple physical properties (M1.4)</p>	<p>observe changes across the four seasons (S1.1)</p> <p>observe and describe weather associated with the seasons and how day length varies. (S1.2)</p>
			Plants (P1)
			<p>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (P1.1)</p> <p>identify and describe the basic structure of a variety of common flowering plants, including trees (P1.2)</p>
Year 2	Living things and their habitats (L2)	Animals including humans (A2)	Uses of everyday materials (M2)
	<p>explore and compare the differences between things that are living, dead, and things that have never been alive (L2.1)</p> <p>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 (L2.2)</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats (L2.3)</p> <p>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain (L2.4)</p> <p>identify and name different sources of food (L2.5)</p>	<p>notice that animals, including humans, have offspring which grow into adults (A2.1)</p> <p>find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (A2.2)</p> <p>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (A2.3)</p>	<p>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses (M2.1)</p> <p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (M2.2)</p>
			Plants (P2)
			<p>observe and describe how seeds and bulbs grow into mature plants (P2.1)</p> <p>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (P2.2)</p>



<p>Working Scientifically Year 3 and 4</p>	<p><i>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: asking relevant questions and using different types of scientific enquiries to answer them; setting up simple practical enquiries, comparative and fair tests; making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables; reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; identifying differences, similarities or changes related to simple scientific ideas and processes; using straightforward scientific evidence to answer questions or to support their findings.</i></p>		
<p>Year 3</p>	<p>Plants (P3)</p>	<p>Forces and magnets (F3)</p>	<p>Light (L3)</p>
	<p>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers (P3.1)</p> <p>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 (P3.2)</p> <p>investigate the way in which water is transported within plants (P3.3)</p> <p>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (P3.4)</p>	<p>compare how things move on different surfaces (F3.1)</p> <p>notice that some forces need contact between two objects, but magnetic forces can act at a distance (F3.2)</p> <p>observe how magnets attract or repel each other and attract some materials and not others (F3.3)</p> <p>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 (F3.4)</p> <p>describe magnets as having two poles (F3.5)</p> <p>predict whether two magnets will attract or repel each other, depending on which poles are facing. (F3.6)</p>	<p>recognise that they need light in order to see things and that dark is the absence of light (L3.1)</p> <p>notice that light is reflected from surfaces (L3.2)</p> <p>recognise that light from the sun can be dangerous and that there are ways to protect their eyes (L3.3)</p> <p>recognise that shadows are formed when the light from a light source is blocked by a solid object (L3.4)</p> <p>find patterns in the way that the size of shadows change. (L3.5)</p>
	<p>Rocks (R3)</p> <p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties (R3.1)</p> <p>describe in simple terms how fossils are formed when things that have lived are trapped within rock (R3.2)</p> <p>recognise that soils are made from rocks and organic matter. (R3.3)</p>		<p>Animals including humans (A3)</p> <p>identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat (A3.1)</p> <p>identify that humans and some other animals have skeletons and muscles for support, protection and movement. (A3.2)</p>
<p>Year 4</p>	<p>Living things and their habitats (L4)</p>	<p>Electricity (E4)</p>	<p>States of matter (Sm4)</p>
	<p>recognise that living things can be grouped in a variety of ways (L4.1)</p> <p>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment (L4.2)</p> <p>recognise that environments can change and that this can sometimes pose</p>	<p>identify common appliances that run on electricity (E4.1)</p> <p>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and</p>	<p>compare and group materials together, according to whether they are solids, liquids or gases (Sm4.1)</p> <p>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) (Sm4.2)</p>



	dangers to living things (L4.3)	buzzers (E4.2)	identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Sm4.3)
	Sound (S4)	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 (E4.3)	Animals including humans (A4)
	identify how sounds are made, associating some of them with something vibrating (S4.1)	recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit (E4.4)	describe the simple functions of the basic parts of the digestive system in humans (A4.1)
	recognise that vibrations from sounds travel through a medium to the ear (S4.2)	recognise some common conductors and insulators, and associate metals with being good conductors. (E4.5)	identify the different types of teeth in humans and their simple functions (A4.2)
	find patterns between the pitch of a sound and features of the object that produced it (S4.3)		construct and interpret a variety of food chains, identifying producers, predators and prey. (A4.3)
	find patterns between the volume of a sound and the strength of the vibrations that produced it (S4.4)		
	recognise that sounds get fainter as the distance from the sound source increases. (S4.5)		

Working Scientifically Year 5 and 6

Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; using test results to make predictions to set up further comparative and fair tests; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations; identifying scientific evidence that has been used to support or refute ideas or arguments.

Year 5	Properties and changes of materials (M5)	Earth and space (E5)	Living things and their habitats (L5)
	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 (M5.1)	describe the movement of the Earth, and other planets, relative to the Sun in the solar system (E5.1)	describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird (L5.1)
	know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution (M5.2)	describe the movement of the Moon relative to the Earth (E5.2)	describe the life process of reproduction in some plants and animals. (L5.2)
	use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating (M5.3)	describe the Sun, Earth and Moon as approximately spherical bodies (E5.3)	Forces (F5)
		use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. (E5.4)	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object (F5.1)



	<p>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic (M5.4)</p> <p>demonstrate that dissolving, mixing and changes of state are reversible changes (M5.5)</p> <p>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. (M5.6)</p>	<p>Animals including humans (A5)</p> <p>describe the changes as humans develop to old age (A5.1)</p>	<p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces (F5.2)</p> <p>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (F5.3)</p>
Year 6	Living things and their habitats (Lh6)	Animals including humans (A6)	Evolution and inheritance (Ev6)
	<p>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 (Lh6.1)</p> <p>give reasons for classifying plants and animals based on specific characteristics. (Lh6.2)</p>	<p>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood (A6.1)</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function (A6.2)</p> <p>describe the ways in which nutrients and water are transported within animals, including humans. (A6.3)</p>	<p>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago (Ev6.1)</p> <p>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents (Ev6.2)</p> <p>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Ev6.3)</p>
	Light (L6)	Electricity (E6)	
	<p>recognise that light appears to travel in straight lines (L6.1)</p> <p>use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye (L6.2)</p> <p>explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes (L6.3)</p> <p>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (L6.4)</p>	<p>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit (E6.1)</p> <p>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 (E6.2)</p> <p>use recognised symbols when representing a simple circuit in a diagram. (E6.3)</p>	