

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	<u>ELG: Listening, Attention and Understanding:</u> Children listen attentively, make comments about and ask questions about scientific understanding. <u>ELG: Speaking:</u> Children use subject-specific vocabulary that they have been introduced to, when speaking. Children offer explanations about why things happen. <u>ELG: Managing Self:</u> Children understand their own basic hygiene and personal needs and manage themselves. <u>ELG: Numerical Patterns:</u> Children compare quantities in different contexts. <u>ELG: Past and Present:</u> Children understand the role of historical scientists. <u>ELG: People, Culture and Communities:</u> Children describe their immediate environment. <u>ELG: The Natural World:</u> Children explore the natural world around them, making observations and recording. They understand important processes and changes.	- ask simple questions <i>that are raised as a result of their exploration of the world</i> - recognise that questions can be answered in different ways <i>including:</i> <i>through different types of scientific enquiries, including first-hand practical activities, as the main form of answering questions</i> <i>ask people questions to find answers</i> <i>use simple secondary sources to find answers (e.g. books, photographs, videos)</i> - observe closely <i>observe how something changes over time</i> - use simple equipment when observing <i>including hand lenses, egg timers</i> - perform simple tests <i>notice patterns and relationships in observations</i> - use own observations and ideas to suggest answers to questions - gather and record data to support in answering questions <i>using scientific language</i> <i>record and communicate findings in a range of ways</i> - identify and classify <i>using simple features to compare objects, materials and living things</i> - make decisions about how to sort and group objects, materials and living things - be able to read and spell subject-specific scientific language	- asking relevant questions and using different types of scientific enquiries to answer them - setting up simple practical enquiries, comparative and fair tests, giving suggestions as to how a test should be set up and making decisions about how to conduct an enquiry - making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment (discussing which equipment is best to use), including thermometers and data loggers. - deciding which data to collect and how to gather it from their own observations, then, 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 from the changes and patterns they have identified, make predictions for new values within or beyond the data they have collected, and find new ways to improve what they have done. - identifying differences, similarities or changes (in connection to scientific concepts explored) with support - using straightforward scientific evidence to answer questions or to support their findings. - Recognise when secondary sources might help to answer questions that cannot be answered through practical investigations	<i>explore ideas and raise different kinds of questions</i> - plan different types of scientific enquiries (<i>choosing the most appropriate for the investigation</i>) to answer questions, including recognising and controlling variables where necessary (<i>and explaining which variables should be controlled and why</i>) <i>recognise when and how to set up comparative and fair tests</i> - take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate <i>make decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them</i> <i>make decisions about the most appropriate equipment to make measurements and explain how to use it accurately</i> <i>use and develop keys and other information records to identify, classify and describe living things and materials</i> <i>use and develop keys and other information records to identify patterns that might be found in the natural environment</i> <i>decide how to record data and results of increasing complexity using</i> - scientific diagrams and labels, - classification keys, - tables, - scatter graphs, - bar graphs - line graphs - use test results to make predictions to set up further comparative and fair tests <i>deciding when further tests and observations might be needed</i> - report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations, - identify scientific evidence <i>from their results</i> to support or refute ideas or arguments <i>that have been explored</i> <i>recognise which secondary sources would be most useful to research their ideas and begin to separate opinion from fact</i> <i>use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas</i> <i>talk about how scientific ideas have developed over time</i>			
Animals including Humans: Knowledge		- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals - identify and name a variety of common animals that are carnivores, herbivores and omnivores - describe and compare the structure of a variety of common animals (fish, amphibians, retiles, birds and mammals including pets) - identify, name, draw and label the basic parts of the human body - say which part of the body is associated with each sense <i>know the name of the main body parts (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes</i>	- notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food, air) - describe the importance for humans of exercise - describe the importance for humans of eating the right amounts of different types of food - describe the importance for humans of hygiene <i>explain the reproduction and growth in animals e.g., egg, chick, children; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep; baby, toddler, child, teenager, adult (focus on questions to understand and recognise growth; pupils are not expected to understand how reproduction occurs)</i>	- identify that animals, including humans, need the right types and amount of nutrition - identify that animals, including humans, cannot make their own food; they get nutrition from what they eat - identify that humans and some other animals have skeletons for support and protection - identify that humans and some other animals have muscles for support and movement <i>name the main body parts associated with the skeleton</i> <i>name the main muscles in the body</i> <i>explain the functions of these body parts</i>	- 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 pray <i>name the main body parts associated with the digestive system (mouth, tongue, teeth, oesophagus, stomach, small and large intestine)</i> - explain what these body parts do	- describe the changes as humans develop to old age <i>explain the changes experienced in puberty</i>	- Identify and name the main parts of the human circulatory system - 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 <i>build upon prior learning from year 3 4 about the skeletal, muscular and digestive system, exploring and answering questions to understand how the circulatory system enables the body to function</i> - learn how to keep their bodies healthy and how their bodies might be damaged

Animals including Humans: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about body of animals, including humans		- <i>use the local environment throughout the year to explore and answer questions about animals in their habitat</i> - <i>understand how to take care of animals from the local environment and the need to return them safely after study</i> - <i>use observations to compare and contrast animals at first hand or through videos and photographs</i> - <i>describe how to identify and group animals</i> - <i>group animals according to what they eat</i> - <i>use own senses to compare different textures, sounds and smells</i>	- <i>observe through video of first-hand observation and measurement, how different animals, including humans, grow</i> - <i>ask questions about what things animals need for survival and what humans need to stay healthy</i> - <i>suggest ways to find answers to questions</i>	- identify and group animals with and without skeletons - observe and compare the movement of animals with skeletons and those without - explore ideas about what might happen if humans did not have skeletons - compare and contrast the diets of different animals (including their pets) decide on ways of grouping animals (including their pets) according to what they eat - research different food groups and how they keep us healthy - design meals based on research	<i>Example investigations include:</i> - <i>comparing the teeth of carnivores and herbivores and suggest reasons for difference</i> - <i>find out what damages teeth and how to look after them</i> - <i>draw and discuss their ideas about the digestive system and compare them with models or images</i>	<i>draw a timeline to indicate stages in growth and development of humans</i> <i>Example investigations include:</i> - <i>research the gestation periods of other animals and compare them with humans</i> - <i>find out about and record the length and mass of a baby as it grows</i>	<i>explore the work of scientists and scientific research about the relationships between diet, exercise, drugs, lifestyle and health</i> <u>- analysis of patient’s blood pressure readings in reflection to patient’s health and how blood pressure changes with age</u> <i>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</i> <i>make decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them</i> <i>make decisions about the most appropriate equipment to make measurements and explain how to use it accurately</i> <u>- analysis of impact of exercise on heart rate.</u> <i>explore ideas and raise different kinds of questions</i> <i>plan different types of scientific enquiries (choosing the most appropriate for the investigation) to answer questions, including recognising and controlling variables where necessary (and explaining which variables should be controlled and why)</i> <i>recognise when and how to set up comparative and fair tests</i> <i>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</i> <i>make decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them</i> <i>make decisions about the most appropriate equipment to make measurements and explain how to use it accurately</i> <i>record data and results of increasing complexity using line graphs</i> <i>identify scientific evidence from their results to support or refute ideas or arguments that have been explored</i> <i>recognise which secondary sources would be most useful to research their ideas and begin to separate opinion from fact</i>
Earth and Space: Knowledge						- 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 <i>explain that the sun is a star and the centre of our solar system and that it has 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a ‘dwarf planet’ in 2006)</i>	

						- explain that the moon is a celestial body that orbits a planet (earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones) - explain why it is not safe to look directly at the sun, even when wearing dark glasses - understand how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists: Ptolemy, Alhazen, Copernicus	
Earth and Space: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about earth and space						- use a model of the sun and Earth to explain day and night - find out about the way that ideas about the solar system have developed Example investigations include: - comparing time of day at different places on Earth through internet links and direct communication - construct simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day - find out why some people think that structures such as Stonehenge might have been used as astronomical clocks.	
Electricity: Knowledge					- identify common appliances that run on electricity - identify whether or not a lamp will light in a simple circuit, based on whether not the lamp is part of a complete loop with - recognise that a switch opens and closes a circuit and associate this with whether not a lamp lights in a simple series circuit - recognise some common conductors and insulators, and associate metals with being good conductors - use the terms current and voltage - know how to work safely with electricity	associate the brightness of 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 diagram <i>construct simple circuits</i> explain the necessary precautions for working safely with electricity	
Electricity : Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences					- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - try different components in a simple series circuit e.g., bulbs, buzzers and motors, and switches, and use their circuits to create simple devices Example investigations include:	<i>answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors</i> <i>systematically identify the effect of changing one component at a time in a circuit</i> <i>design and make set of traffic lights, a burglar alarm or some other useful circuit</i>	

to enable them to ask questions, and answer them through investigations and secondary sources, about electricity					- observing patterns, for example, that bulbs get brighter if more cells are added - observe that metals tend to be conductors of electricity, and that materials can and cannot be used to connect across a gap in a circuit.		
Forces: Knowledge				• compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • describe magnets as having two poles		• 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 • explain how scientists (e.g. Galilei and Newton, helped develop the theory of gravitation).	
Forces: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about forces				• 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 • predict whether two magnets will attract or repel each other, depending on which poles are facing • observe that magnetic forces can act without direct forces unlike most forces, where direct contact is necessary (e.g., opening a door/ pushing a swing) • investigate the behaviour and everyday uses of different magnets (bar, ring, button, horseshoe) • compare how different things move and group them based on comparisons • raise questions and carry out test to find out how far things move on different surfaces • gathering and recording data to find answers to questions • explore the strengths of different magnets and find a fair way to compare them • sort materials into those that are magnetic and those that are not • look for patterns in the way that magnets behave in relation to each other and what might affect this (e.g., the strength of the magnet or which pole faces another) • identify how these properties make magnets useful in everyday items • suggest creative uses for different magnets		• explore falling objects and raise questions about the effects of air resistance • explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall • experience forces that make things begin to move, get faster or slow down • explore the effects of friction on movement and find out how it slows or stops moving objects (e.g. brakes on a bicycle wheel) • explore the effects of levers, pulleys and simple machines on movement (DT link). Example investigations include: - exploring falling paper cones or cupcakes cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective - explore resistance in water by making and testing boats of different shapes - design and make products that use levers, pulleys, gears and/or springs and explore their effects (DT link)	

Light: Knowledge				• recognise that we need light in order to see things • explain that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous • explain ways of protecting eyes from the sun • recognise that shadows are formed when the light from a light source is blocked by an opaque object • <i>consider and explain why it is important to protect eyes from bright lights</i>			recognise that light appears to travel in straight lines 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 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 use the idea that light travels in straight liens to explain why shadows have the same shape as the objects that cast them <i>building on work in Year 3, explore the way that light behaves including light sources, reflection and shadows</i>
Light : Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about light				• find patterns in the way that the size of shadows change • <i>explore what happens when light reflects off a mirror or other reflective surface (including playing mirror games to answer questions about how light behaves)</i> • <i>look for and measure shadows, find out how they are formed and what might cause them to change</i> • <i>look for patterns in what happens to shadows when a light source moves</i> • <i>look for patterns in what happens to shadows when the distance between the light source and the object changes</i>			
Living Things and Their Habitats: Knowledge			• explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited • describe how different habitats provide for the basic needs of different kinds of animals and plants • describe how plants/ animals and habitats depend on one another • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals • use simple food chains to identify and name different sources of food • <i>explain that all living things have characteristics that are essential for keeping them alive and healthv</i>		• recognise that living things can be grouped in a variety of ways • explore and use classification keys to identify and name a variety of living things in the local and wider environment • design and use classification keys to group a variety of living things in the local and wider environment • recognise and explain that environments can change, and that this can sometimes pose dangers to living things • identify the difference between, and group animals into, vertebrate (e.g., fish, amphibians, reptiles, birds and mammals) and invertebrates (e.g., snails and slugs, worms, spiders and insects) • explain human impact - both positive (e.g., nature reserves, ecologically planned parks, garden ponds) and negative (e.g., population, development,		• 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 • <i>build upon prior learning from year 4 by looking at the classification system in more detail</i> • <i>understand broad groupings, including knowledge that micro-organisms, plants and animals can be subdivided.</i> • <i>be able to classify animals into commonly found invertebrates (insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds, mammals)</i> • <i>be able to explain why living things are placed in one group and not another</i> • <i>explain the significance of the work of scientists such as Carl Linnaeus</i>

			explain and give examples of habitats and microhabitats in the local environment		litter, deforestation) - on environments		
Living Things and Their Habitats: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about living things and their habitats			- raise and answer questions to become familiar with the life processes that are common to all living things - identify and study a variety of plants and animals within their habitat as a result of questions asked about the local environment observe how living things depend on each other (e.g., plants serving a source of food and shelter for animals - compare animals in familiar habitats with animals found in less familiar habitats (seashore, woodland, ocean, rainforest) Examples of investigations include: - sort and classify things according to whether they are living, dead or never alive, recording finding using charts - describe their decision when placing things e.g. ‘is flame alive?’ ‘is a deciduous tree dead in winter’ and discuss ways to answer questions - construct simple food chains including humans (grass, cow, human) -describe conditions in different habitats and microhabitats (under log, on stony path, under bushes) - find out how the conditions affect the number and type(s) of animals and plants that live in a habitat/ microhabitat		- use the local environment throughout the year to raise and answer questions to help identify and study plants and animals in their habitat - use the local environment throughout the year to explore how a habitat changes - explore and create more than one possible way of grouping a wide selection of living things including animals, flowering plants and non-flowering plants - make a guide to local living things - raise and answer questions based on observations of animals and what they have found out about other animals that they have researched		use classification systems and keys to identify some animals and plants in the immediate environment research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system <u>- identify habitats within school grounds and investigate animals that live there using classification systems and keys.</u> - explore ideas and raise different kinds of questions - take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - make decisions about what observations to make - use and develop keys and other information records to identify, classify and describe living things and materials - use and develop keys and other information records to identify patterns that might be found in the natural environment - decide how to record data and results of increasing complexity using - scientific diagrams and labels, - classification keys, - recognise which secondary sources would be most useful to research their ideas and begin to separate opinion from fact - use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas - talk about how scientific ideas have developed over time <u>- research classification system of living things and what the scientific language refers to.</u> - explore ideas and raise different kinds of questions - use and develop keys and other information records to identify, classify and describe living things and materials - decide how to record data and results of increasing complexity using - scientific diagrams and labels, - classification keys, - tables, - recognise which secondary sources would be most useful to research their ideas and begin to separate opinion from fact - use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas - talk about how scientific ideas have developed over time

Materials/ States of Matter: Knowledge		- distinguish between an object and the materials from which it is made - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock, <i>brick, paper, fabrics, elastic, foil</i> - describe the simple physical properties of a variety of everyday materials - compare and group together a variety of everyday materials on the basis of their simple physical properties <i>use language such as hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent when exploring, naming, discussing and asking questions about materials</i>	- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching <i>identify the uses of different everyday materials</i> <i>explain that materials can be used for more than one thing and give examples (e.g., metal = coins, cans, cars, table legs; wood = matches, floors, telegraph poles)</i> <i>explain that the same thing can be made from different materials and give examples (e.g., spoons = plastic, wood, metal, but not normally glass)</i> <i>explain what makes materials suitable/unsuitable for particular uses</i> <i>learn about people who have developed useful new materials (e.g., John Dunlop, Charles Macintosh, Josh McAdam)</i>		- 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 - measure or research the temperature at which materials change state in degrees Celsius (°C) - identify the part played by evaporation and condensation in the water cycle - associate the rate of evaporation with temperature <i>describe the states of matter (e.g solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container).</i>		
Materials/ States of Matter: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about materials/ state of matter		Example investigations include: what’s the best materials for an umbrella? ... for lining a dog basket? ... for curtains?... for a bookshelf?... for a gymnast’s leotard?	<i>- compare the use of everyday materials in and around the school with materials found in other places (at home, the journey to school, visits, in stories rhymes and songs)</i> <i>- observe materials closely</i> <i>- identify and classify the uses of different materials</i> <i>- record observations</i>		- observe and record changes to water when heated (to be a gas) or cooled (to be a water) and the temperature at which this happens <i>- group and classify a variety of different materials</i> <i>- explore the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party)</i> <i>- research the temperature at which materials change state (e.g., when iron melts, or when oxygen condenses into a liquid)</i> <i>- observe and record evaporation over a period of time (e.g., a puddle in the playground or washing on a line)</i> <i>- investigate the effect of temperature on washing drying or snowmen melting</i>		

Plants: Knowledge		- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees - identify and describe the basic structure of a variety of common flowering plants, including trees <i>use the local environment throughout the year to explore and answer questions about plants growing in their habitat</i> <i>observe the growth of flowers and vegetables that they have planted</i> <i>become familiar with plant structures including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem</i>	- observe and describe how seeds and bulbs grow into mature plants - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy <i>explain the requirements of plants for germination, growth and survival</i> <i>explain the processes of reproduction and growth in plants</i> <i>explain that seeds and bulbs need water to grow but most do not need light, as seeds and bulbs have a store of food inside them</i>	- I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves, flowers - I can 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 - I can investigate the way in which water is transported within plants - I can explore the part that flowers play in the life cycle of flowering plants including pollination, seed formation and seed dispersal - I can use the terms 'structure and 'function' to explain how a plants structural features support its function - I can understand the role of the roots and stem in nutrition and structural support - I can understand the role of leaves for nutrition - I can understand the role of flowers for reproduction			
Plants: Skills – referring to 'Working Scientifically' skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about plants.		- use magnifying glasses to observe plants - compare and contrast familiar plants, describing how they were able to identify and group them - draw diagrams showing the parts of different plants including trees Example investigation: keep record of how plants have changed over time e.g. leaves falling off trees and buds opening comparing and contrasting what they found out about different plants	- observe how <i>a variety of</i> plants grow in the local environment throughout the year - <i>observe how a variety of plants change over time from a seed or bulb</i> - <i>observe similar plants at different stages of growth</i> - <i>record observations that have been made</i> <i>Examples of test:</i> - <i>show that plants need light and water to stay healthy</i>	Example investigation: comparing the effect of different factors on plant growth (e.g., amount of light, amount of fertiliser) Example investigation: discovering how seeds are formed by observing the different stages of plant life cycles over a period of time Example investigation: looking for patterns in the structure of fruits and how this relates to how its seeds are dispersed Example investigation: observe how water is transported in plants (put cut white carnations into coloured water and observe how water travels up to the step to the flower) Example reasoning: Answer questions such as 'animals are a plants best friend – do you agree?' Example reasoning: Why might flowering plants grow high in rooftops even if humans did not put them there?			
Rocks/ Evolution and Inheritance: Knowledge				- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties - describe how fossils are formed when things that have lived are trapped within rock - recognise and explain that soils are made from rock and organic matter <i>connect scientific knowledge of rocks and soils to geography learning</i>			

Rocks/ Evolution and Inheritance: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about rocks/ evolution and inheritance				- explore different kinds of rocks and soils, including those in the local environment - observing rocks, including those used in buildings and gravestones - explore how and why rocks may have changed over time - use a hand lens/ microscope to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them - research and discuss the different kinds of living things whose fossils are found in sedimentary rock - research and explore how fossils are formed - explore different soils and identify similarities and differences between them - investigate what happens when rocks are rubbed together - investigate what changes occur when different rocks are in water - raise and answer questions about the way soils are formed			
Seasonal Changes: Knowledge		• observe and describe changes across the 4 seasons • observe and describe weather associated with seasons • observe and describe how day length varies • explain why it is not safe to look directly at the sun, even when wearing dark glasses					
Seasonal Changes: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about seasonal changes		- make tables and charts about the weather - make displays of what happens in the world around them, including day length, as the seasons change					

Sound: Knowledge					• identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • recognise that sounds get fainter as the distance from the sound source increases • <i>explore and identify the way sound is made through vibration in a range of different musical instruments from around the world</i>		
Sound: Skills – referring to ‘Working Scientifically’ skillset. Provide children with a range of scientific experiences to enable them to ask questions, and answer them through investigations and secondary sources, about sound					• 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 • <i>find out how the pitch and volume of sounds can be changed in a variety of ways</i> <i>Example investigations include:</i> - <i>find patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses.</i> - <i>make earmuffs from a variety of different materials to investigate which provides the best insulation against sound.</i> - <i>make and play their own instruments by using what they have found out about pitch and volume.</i>		