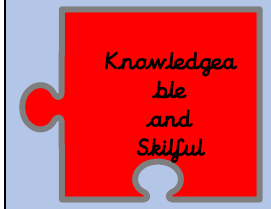
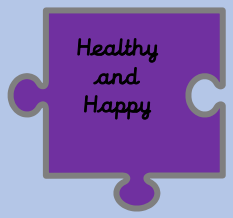
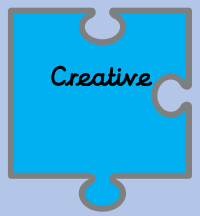
Redwood Primary School

Science Curriculum Coverage: Key Stage One

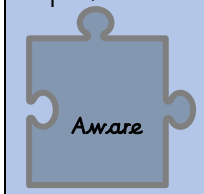
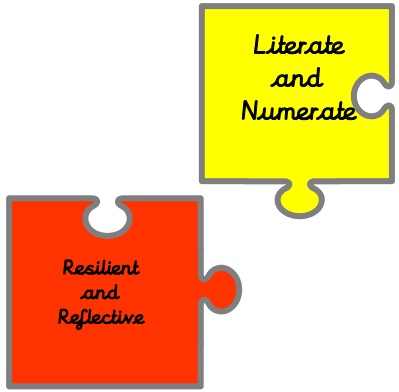
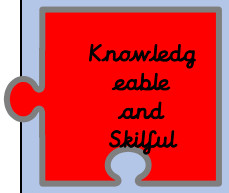
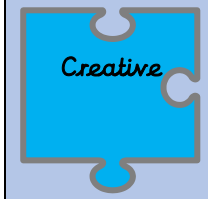
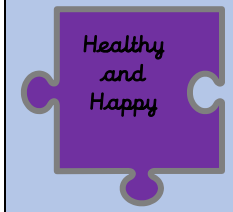
Expected Vocabulary. NC Objectives. Intended activities. Additional knowledge for prior learning for KS2

Nursery	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One	**Understanding the world** I will talk about all the things that make me unique, like how I look, the things I am great at, the things I find tricky, the people that look after me, my school family and my home family. I will think about things that I might like to do or try one day. **Communication and Language** I will learn new words. I will ask questions like 'Can you read with me?' I will listen to questions and think about what to say when I reply. **Literacy** I will learn about the sounds around me, like the sounds I hear outside or at home, the sounds I can make with my voice or my body, or the sounds I can make with instruments.	**Outdoor Provision – used every day on the nursery garden** Water play (different sized containers, cascading bowls, pipes etc.), pulleys and weights, forest school area, gardening patch, ramps and cars. **Indoor Provision** Small world (animals, dinosaurs etc.), tech toys, investigation station, water tray, sand tray, natural materials, role play areas. Seasonal changes – autumn to winter. Children begin to notice changes in their local environment and in the weather. They begin to identify these changes e.g. leaves are falling off the trees. Ourselves & Diversity – noticing and celebrating differences in ourselves and others, how do we change? Children will begin to recognise changes that have happened in their life time. They can identify some features of the face and body. Children begin to notice and accept differences. School Trips/Events **Autumnal Walk** - Noticing seasonal changes in our local environment **Toasting Marshmallows** – using an open fire in the bursary forest school	
Topic / Autumn Two 			Autumn, winter, snow, leaves, rain, seasons Hair, eyes, skin, mouth, nose, ears, baby, child, grow

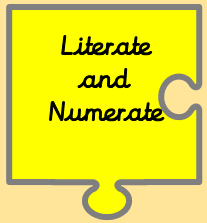
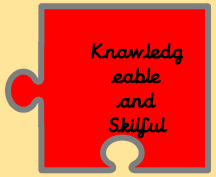
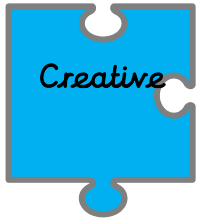
Redwood Primary School

Topic / Spring One   Topic / Spring Two  	**Communication and Language** When someone asks me a 'why question' I will think about my answer and then tell my friends what I think. I will start to use new words that help me to describe things such as big/small, fast/slow and bendy/spiky. **Understanding the World** When we go on our weekly adventures onto the field, I will use my senses to explore the changes I see. This will help me to develop a love for the natural world around me. By taking care of our nursery garden and vegetable patch, I will understand what plants need to help them grow. I will also plant my own seeds and seedlings and watch how they grow. By taking care of Frank, the nursery pet goldfish, and making feeders for the birds I will begin to understand how living things need to be looked after and cared for. I will explore different materials as I build the things I need to be able to travel in space!	**Outdoor Provision – used every day on the nursery garden** Water play (different sized containers, cascading bowls, pipes etc.), pulleys and weights, forest school area, gardening patch, ramps and cars. **Indoor Provision** Small world (animals, dinosaurs etc.), tech toys, investigation station, water tray, sand tray, natural materials. Natural World (space) – Children will start to understand the world beyond. Focusing on space stories and looking at what can be found in space. (Key texts - How to catch a star, Zoom, rocket, zoom, Roaring rockets, On the moon, Whatever next) Planting and Growing - Children begin to understand that we grow plants. They understand that plants come from seeds and need water/sunlight to grow. Children will observe the changes over time. **Activities** – planting own seeds (grow it, eat it), garden area (outdoor garden), observing plants growing, group discussions. Link texts The enormous turnip, the seed in need, Jasper's beanstalk, ten seeds, the sunflower house, Sam plant's a sunflower Easter - winter to spring. Children begin to notice differences happening in their local environments. Children can comment on the changes e.g. leaves are growing on the trees. Children are given the opportunity to plant and grow plants in the Nursery garden. Caring for living things - Children will begin to care for living things (e.g. nursery goldfish and plants). They will learn all about this through discussions and practical activities.	Space, rocket, stars, planets Plant, grow, seed, soil, sunlight, water, root, flower, bulb, sunlight, care, watering can, pots Spring, winter, weather, grow, change, sun, rain Soil, mud, seed, plant, water, look after, care for, living,

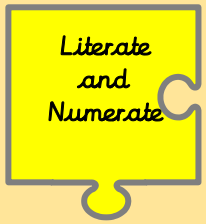
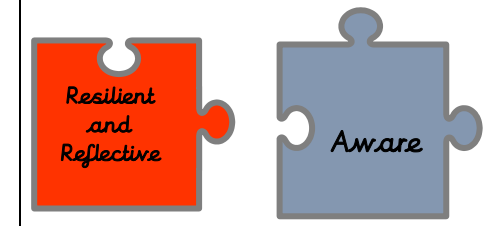
Redwood Primary School

		School trips/events **Wintery walk in the Park** – children will begin to notice seasonal changes. **Planting Vegetables** – children will learn about plants and all the things they need to grow.	
Topic / Summer One 	**Understanding the world** I will use a globe to help me to explore different environments around the world like the jungle, the ocean and the arctic. I will think about things we could all do together to help protect our world. I will explore collections of materials with similar and/or different properties to help me invent things, just like 'Mrs Armitage'. I will explore how things work so that I can improve my inventions. **Communication and Language** I will be able to understand and respond to a range of questions that start with words like who, what and where. 	**Outdoor Provision – used every day on the nursery garden** Water play (different sized containers, cascading bowls, pipes etc.), pulleys and weights, forest school area, gardening patch, ramps and cars. **Indoor Provision** Small world (animals, dinosaurs etc.), tech toys, investigation station, water tray, sand tray, natural materials.	
Topic / Summer Two   		Different Environment – The children will begin to explore different environments (jungle, ocean and arctic) and where they can be found (Key texts - Commotion in the ocean, A hole in the bottom of the sea, Rumble in the jungle, Jazzy in the jungle, Immi, A polar bear in the snow) Pollution – children will begin to develop an awareness of how we can look after our planet. E.g. recycling, waking to school, saving water etc. Materials – Children will continue to explore with different materials. They will manipulate them and make comparisons. The children will begin to identify similar and different properties of the materials further developing their vocabulary. **School Trips/Events** Sports Day – children become aware of the importance of a healthy body, healthy activities and healthy eating. Outdoor Adventure – children explore the outdoors.	Same, different, touch, smell, see, hard, soft, smooth, rough Near, far, old, new, train, bus, car, bicycle, aeroplane, ship

Redwood Primary School

Foundation Stage 2	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One     	**Understanding the world** I will learn about Autumn I will explore the natural world around me and look at the effects of changing seasons I will describe my immediate environment **Communication and Language** *This term I will develop my skills in* *Listening carefully* *Following instructions* *Answering "why" questions (as well as "who" "what" and "where")*	Nursery Prior Knowledge – have an understanding that seasons change and with support notice some changes. Children have some knowledge of different animals from different settings (e.g. farm animals, zoo animals and sea creatures) **Continuous Provision** **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **Natural resources** – conkers, leaves, stones, pebbles, sticks **Outdoor Provision** Investigation Station, gardening area, digging pits and wheel barrows, ramps and cars, water play (tubes, pipes, containers etc.), construction toys (blocks, bricks, lose parts), pulleys and buckets, mud kitchen **Autumnal Changes** – children begin to notice the changes in their immediate and local environment (School and Sinfin area). E.g. changes in weather, changing colour of leaves, autumn animals. Children are encouraged to discuss what they have noticed and start to ask questions regarding the seasonal changes. **Senses** – exploring our sense while both inside and outside. Can you describe what you see, hear, smell, touch and taste? **Activities** – exploring natural materials, leaf collecting, making leaf pictures, observational drawings of leaves.	Magnetic, light, dark, fast, slow, metal, forwards, backwards, alive, dead, autumn Leaves, trees, weather, change, cold, frost, autumn, winter, season

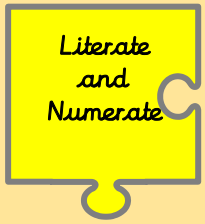
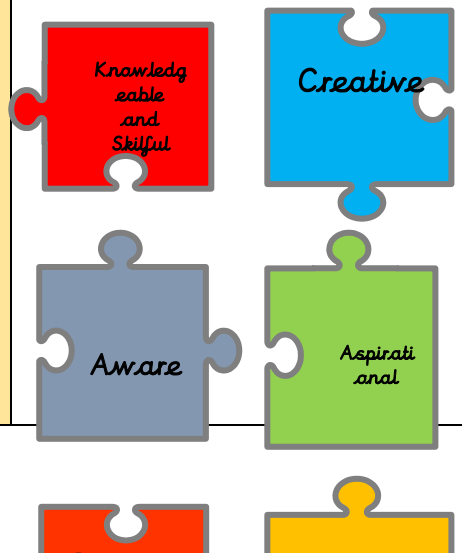
Redwood Primary School

		School Trips/Events Autumn walk – local walk to Redwood Park. Children hunt for different leaves on their check lists. Children are encouraged to notice changes that have taken place – leaves falling from the trees.	
Topic / Autumn Two 	Communication and Language This term I will develop my skills in Listening carefully Following instructions Answering "why" questions (as well as "who" "what" and "where") Expressive Arts and Design Music - I will practise stopping and starting instruments I will take part in domestic role play and other role play around festivals especially Christmas and other imaginative and small world play both inside and outdoors	Continuous Provision **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **Natural resources** – conkers, leaves, stones, pebbles, sticks Outdoor Provision Investigation Station, gardening area, digging pits and wheel barrows, ramps and cars, water play (tubes, pipes, containers etc.), construction toys (blocks, bricks, lose parts), pulleys and buckets, mud kitchen **Senses** – exploring our sense while both inside and outside. Can you describe what you see, hear, smell, touch and taste? Within continuous provision children will be given the opportunity to explore different squashes and pumpkins and have hand on experiences. They will be given the opportunity to explore change in state (solid to liquid) buy experimenting with ice. Weather permitting they will see icicles and frost in their school environment.	Magnetic, light, dark, fast, slow, metal, forwards, backwards, alive, dead, 
Topic / Spring One	Understanding the world I will talk about different environments - specifically a farm	Nursery Prior Knowledge – children are familiar with the traditional tales. They have been introduced to some animals and materials.	

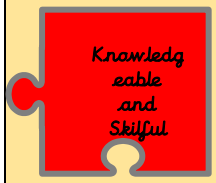
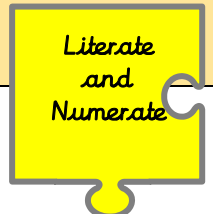
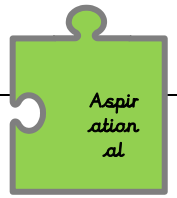
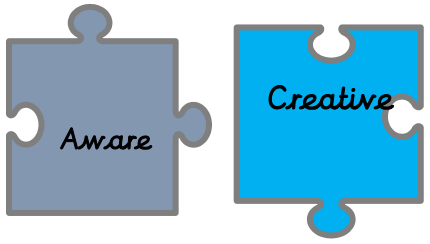
Redwood Primary School

Literate and Numerate Creative	I will learn about animals that live on farm I will learn about life cycles and have first-hand experience of this through hatching eggs I will make maps of a farm I will learn about seasonal changes **Communication and Language** *This term I will…* *Express ideas and thoughts more fully and in longer phrases – adding details* *Develop vocabulary based around the termly topics and my interests.* Aware Resilient and Reflective	**Continuous Provision** **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **STEM Area** – different science related activities each week. E.g. building a wall out of cups and paper, making bridges out of pegs and pieces of wood **Outdoor Provision** Investigation Station, gardening area, digging pits and wheel barrows, ramps and cars, water play (tubes, pipes, containers etc.), construction toys (blocks, bricks, lose parts), pulleys and buckets, mud kitchen **Farm Animals** Children will explore the different animals that live on the farm and the environment they live in, comparing it to their local environment. Children will look at animal offspring and begin to be able to name common farm animals and their young. Children will be introduced to 'life cycles' and talk about changes they can see happening to the animals as they grown. **Seasonal Changes** Children will notice how the seasons have changed (winter). **School Trips/Events** **Winter walk** – local walk to Redwood Park. Children are encouraged to notice changes that have taken place – bare trees, cold weather, frost etc.	Barn, farmer, tractor, shepherd, driver, cultivator, harvester, shearer, life cycle, calf, lamb, chick, foal, piglet, duckling, gosling, incubator, route, map, direction, instructions, festival, celebrate, community, winter, weather, change Winter, autumn, weather, changes, cold, frost

Redwood Primary School

		<u>Eggs</u> – children will watch the chicks hatch from the eggs and notice how they change and grow over time. <u>Farm trip</u> – Children will be given the opportunity to visit a farm	
Topic / Spring Two 	<u>Understanding the world</u> I will explore the natural world through growing seeds I will learn about different environments for growing (The tiny seed) I will observe and experience the changing seasons (Spring) I will use all of my senses while outside I will talk about growth and change in me <u>Communication and Language</u> *I will develop vocabulary from the topics; The Tiny Seed, Jack and the Beanstalk and Titch, and my own interests.* . 	Nursery Prior Knowledge – children are aware of traditional tales. They have had opportunities to plant and grow their own seeds. They have also had chance to cook different foods. <u>Continuous Provision</u> **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **STEM Area** – different science related activities each week. E.g. building a wall out of cups and paper, making bridges out of pegs and pieces of wood. **Outdoor Provision** Investigation Station, gardening area, digging pits and wheel barrows, ramps and cars, water play (tubes, pipes, containers etc.), construction toys (blocks, bricks, lose parts), pulleys and buckets, mud kitchen <u>Topic</u> <u>Jack and the Beanstalk/The Tiny Seed</u> – children will plant seeds and observe how the seed changes over time. Children will begin to understand what a plant needs to grow. <u>Pancake Day</u> – children will be given the opportunity to make pancakes. They will see how the ingredients change when we cook them. <u>Seasons – Spring</u>	Plant, seeds, grow, soil, sunlight, water, leaves, stem, flower, petals, roots Seasons, spring, weather, grow, new,

Redwood Primary School

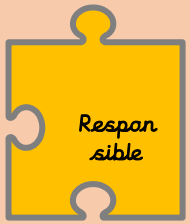
		Children will explore how the seasons have changed from winter to spring. Children will notice changes in their immediate and local environment. They will explore their different sense when going on local walks. **School Trips/Events** **Spring walk in the park (either this half term or next)** Children will highlight the changes that they can see. E.g. daffodils and snowdrops growing, leaves on the trees, baby animals etc. **Growing Bags** Children will be sent seeds, compost and soil. They will be given the opportunity to grow their seeds at home and share their experiences with the class. **Allotment visit** Children to be given the chance to visit an local allotment and see how different vegetables are grown.	
Topic / Summer One    	**Understanding the world (Reception)** *During our topic lessons, I will learn about ;* • *Journeys and maps in real life and books* • *Old and new ways of travelling and how they are the same and different*	Nursery Prior Knowledge – children have been introduced to space and read stories set in space. They have some understanding of stars and planets. **Continuous Provision** **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **STEM Area** – different science related activities each week. E.g. building a wall out of cups and paper, making bridges out of pegs and pieces of wood. **The Train Ride/The Journey Home from Grampa's** – children will look carefully at different vehicles. They will	 Push, pull, fast, slow, move, forwards, backwards, forces

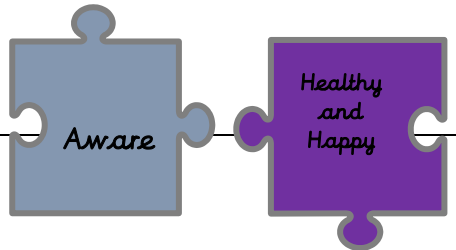
Redwood Primary School

		explore moving the vehicles by pushing and pulling. Children will build ramps and roads to investigate these forces. School Trips/Events **Trip to tramway museum or railway**	Moon, space, stars, meteorite, planets, rocket, name of planets
Topic / Summer Two Knowledgeable and Skilful Literate and Numerate	**Understanding The World** During our topic lessons, the children will cover the following things; Similarities and differences between life in this country and life in other countries. Talk about different parts of the world where children may have family members. Invite in parents and other family members to talk about it. Ask families to send in photos and objects linked to family in UK and wider world. Creative Resilient and Reflective	Nursery Prior Knowledge – children have an understanding of sea creatures and the ocean. **Outdoor Provision** Investigation Station, gardening area, digging pits and wheel barrows, ramps and cars, water play (tubes, pipes, containers etc.), construction toys (blocks, bricks, lose parts), pulleys and buckets, mud kitchen **Continuous Provision** **Science area –** magnets, spinners, magnifying glasses, colour changers, liquid bubble timers **Computing area** – torches, metal detectors, phones, cars, beebots **STEM Area** – different science related activities each week. E.g. building a wall out of cups and paper, making bridges out of pegs and pieces of wood. **Changes in life time** *Children look at changes to themselves. Growing from a baby to a child. Children will begin to explore diversity further and make comparisons between themselves and others.* **Tasting (senses)**	*Grow, baby, toddler, child, teenager, adult, age, time, past, present, change* *Taste, taste buds, flavour, smell, tongue* Aware

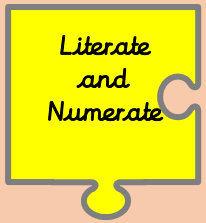
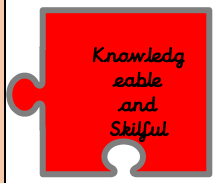
Redwood Primary School

		Children will be given the opportunity to taste different foods from different countries and describe what they taste like. Children will explore the differences in foods depending where it has come from. **School Trips/Events** **Sports Day** – children become aware of the importance of a healthy body, healthy activities and healthy eating.	
Year One	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One **Marvellous Me**	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 • using their observations and ideas to suggest answers to questions Pupils should be taught to: • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Prior Knowledge from FS – children should be able to name some features of the human body. They understand that hygiene is important. **The human body including senses** **The Body –** As a class, record all the body parts they know on flipchart for working wall. Take children outside with chalk. Model drawing round a child. Then labelling the different parts of the body. **Senses** **Touch -** Discuss how we use our hands to feel different things. Using a range of objects from the feely box (spoon, fabric, sand paper) begin to develop a range of vocabulary to describe different objects **Sight –** I-Spy Game - Tell the children that they will be using their eyes to find objects that the teacher describes to them. Play the game eye spy and get children to guess. E.g. I spy something white that you write on. Answer: whiteboard.	ankle, arm, calf, chest, elbows, eyebrows, eyelashes, eyes, ears, face, feet, fingers, hands, head, hips, knees, legs, mouth, neck, nose, shoulders, teeth, thigh, wrist, toes, waist, tongue, sense fingers, hands, feel, texture, seeing/sight, eye, taste, tasting, tongue, mouth, lips





Redwood Primary School

	 	**Taste –** Tasting Food - Make it clear that the tongue is the body part that is responsible for taste not the mouth. Discuss how like smell, our sense of taste can also be different. Some children might love carrots, while other children might not. Provide a selection of foods with different tastes. **Hearing –** Sound walk - Tell the children that we will be going on a sound walk around school so they have to use their ears and listen carefully to any sounds they may hear. Take the children around the school grounds and highlight any sounds heard. **Smell –** Smelling Pots - Briefly talk about the different parts of the nose and where we can find them (nostril, septum). Discuss that we all have a different sense of smell. That means that some of us may like one smell while others might not. Provide children with pots containing different things. Children to smell and match to the correct picture.	ears, hear, hearing, sound, listen smell, nose,
Autumn Two **Animals**	During years 1 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	Prior knowledge from FS1 and 2 – know names of a variety of animals from different areas. The children will be able to name some simple features e.g. cows make milk, sharks live in the ocean etc. **Identifying and classifying animals –** building on prior knowledge from FS, children sort a selection of animals from different climates depending on their features. E.g. how many legs? What colour are they? Can they swim? **Introduce fish –** children are taught about the common characteristics that fish share. E.g. live under water, have gills, can swim. Children draw a chosen fish and label the key features.	Common animals e.g. lion, cow, frog, ostrich etc. Gills, scales, swim, fins, tail, breath Fur, warm-blooded, live-young,

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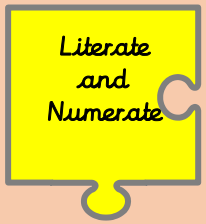
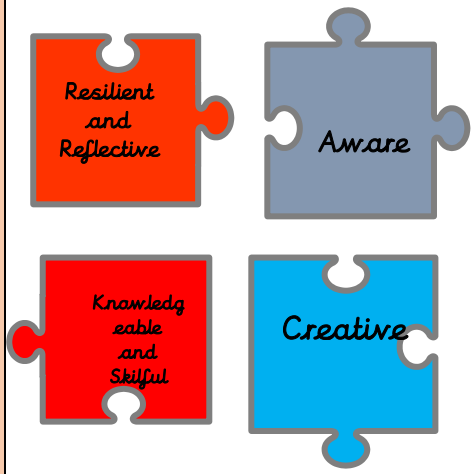
	Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 	**Introduce mammals –** children are taught the common characteristics that mammals share. E.g. give birth to live young, warm blooded, have hair. Children compare different animals and discuss differences and similarities. **Introduce birds –** children are taught the common characteristics that birds share. E.g. beaks, wing, lay eggs and have feathers. Children use non-fiction books to find out information about birds **Birds investigation** – children investigate appropriate materials to make birds wings. Children find out what materials are water proof and light. **Introduce amphibians –** children are taught the common characteristics that amphibians share. E.g. wet skin, live in water and on land. Learn to learn activity – children use a poster to find information about amphibians. **Introduce reptiles –** children are taught the common characteristics that reptiles share. E.g. lay eggs, bodies close to the floor. Children to make a reptile and identify the features that they have. **Identifying and classifying animals –** using prior knowledge children sort a selection of animals into the correct types. Children collaboratively discuss similarities and differences. **Carnivores and Herbivores –** discuss the differences between animals that eat meat and animals that eat grass. Introduce the names carnivore and herbivores. **Omnivores –** discuss what children eat. Discuss that it is a mixture of both animals and plants. Introduce the term omnivores.	Feathers, beak, wings, eggs, fly Investigate, predict, fair test, measure Skin, water, land, webbed feet Mammals, amphibians, birds, reptiles, fish, sort, classify Meat, plants, herbivore, carnivores, Omnivores

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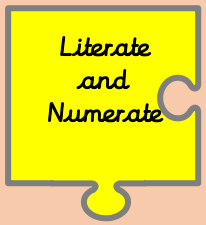
		School Trips/Events Animal visit – a visitor will bring exotic animals in for the children to hold and stoke.	
Topic / Spring One **Seasons – autumn to winter** 	Pupils should be taught to: • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.  	**Autumn to Winter** Children will identify changes that they have noticed. Children produce pieces of art to show autumn to winter. Focusing on how the weather changes from mild to cold. **School Trip/Events** **Local walk** – Children walk in local environment with specific focus of **Evergreen and Deciduous trees**. Children will also identify seasonal changes they notice (building on prior knowledge from FS)	Autumn, winter, season, snow, rain, weather, changes Deciduous, evergreen, leaves, roots, trunks, branches
Topic / Spring Two **Plants** 	During years 1 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 Pupils should be taught to:	Prior Knowledge from FS – children are aware of some features of a plant. They know plants come from seeds and grow. **Introduce plants to the children** – show children a variety of common plants. Children can go on walk round school to name common plants e.g. daisy, dandelion, oak tree, fern tree. **Sorting Plants and recap** – children have a selection of common plants to name. Children sort depending on their characteristics. What can they remember from last year? Children can describe the structure of a plant, identifying where the features are. Children to be given the opportunity to label a flower plant (petal, leaf, stem, root)	ash bark berry blossom branch branches bud bulb deciduous evergreen flower flowering plants fruit garden plants hawthorn holly 

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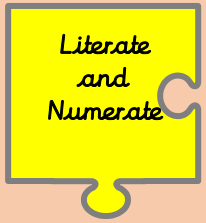
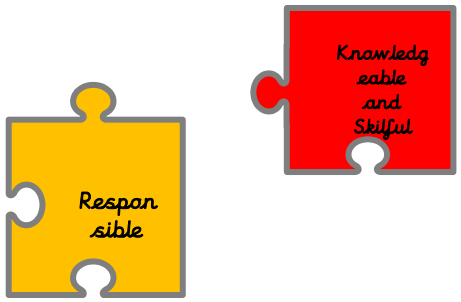
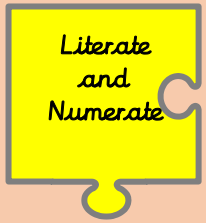
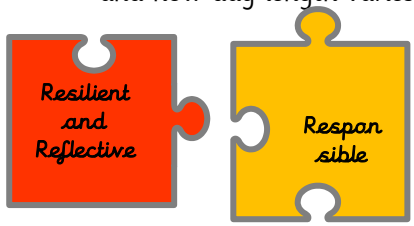
	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees. 	<u>Deciduous and Evergreen</u> – children are taught the difference between deciduous and evergreen trees. They can identify some feature of a tree. E.g. trunk, roots, branches, leaves. They notice different types of trees in their local environment. Children can sort trees into deciduous and evergreen. <u>Planting</u> – children are given the opportunity to plant seeds and observe how they change over time. Children are given the responsibility to look after the plants and nurture them. (E.g. water, sunlight and soil) <u>Observation over time</u> – children to observe their plants. How have the changed over time? What did you see first? Diary opportunity as follow up. <u>School Trips/Events</u> <u>Spring walk</u> – children identify different deciduous and evergreen trees in their environment. They identify different plants too.	horse chestnut leaf/leaves names of flowers grown names of locally found flowering plants names of locally found garden plants names of locally found trees names of locally found wild plants names of vegetables grown oak petal root seed spruce/pine stalk stem sycamore trunk vegetable wild plant
Topic/ Spring Two **Seasonal changes** 	Pupils should be taught to: • observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies. 	Building on prior knowledge from FS. Children will have an understanding of how the weather changes as seasons change. Children will observe changes from winter to spring. The will focus on weather changes as well as changes in nature – e.g. animals, plants and temperature. Children will create cross curricular pieces of art work linked to seasonal changes.	Seasons, spring, summer, weather, sun, rain, clouds, temperature

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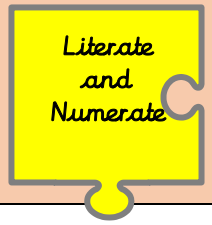
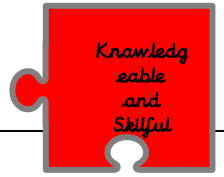
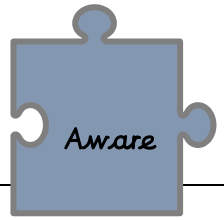
Summer One **Materials**	During years 1 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment • Performing simple tests • Identifying and classifying • using their observations and ideas to suggest answers to questions Pupils should be taught to: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • 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.	Prior knowledge from FS – children will know the some names and properties of some common materials. **Introduce materials** – recapping from FS, explore a variety of materials. Discuss what they are called and some of their properties. E.g. metal is shiny, class is transparent/see through etc. **Classifying and Grouping Materials** – children are provided with a selection of materials to investigate. Children will sort materials depending on characteristics, e.g. smooth objects and rough objects, shiny and not shiny, hard and soft etc. Children to begin to describe materials using different vocabulary. **Material Hunt** - building on prior knowledge children to look for objects made from wood, plastic, glass and metal. Discuss why certain objects are made of certain materials. **Design an Investigation** – as a class design an experiment to test a material e.g. which material is breakable? Which material is the strongest? Children to make a prediction. *(Year 2 focus on waterproof)* **Carry out an Investigation** – using previous lessons plan. Children to carry out their experiments. Children to discuss what they have found out to the rest of the class. **Investigations write up** – children to discuss their results and check to see if their predictions were correct.	Absorbent, bendy/floppy, breaks/tears, brick, card/cardboard, clay, dull, elastic, fabrics, foil, glass, hard, liquid, magnetic, manmade, manufactured, material, metal, natural, not bendy, object, opaque, paper, plastic, rock, rough, rubber, see through, shiny, smooth, soft, solid, stiff, stretchy, strong, transparent, twist, water, waterproof, wood, wool







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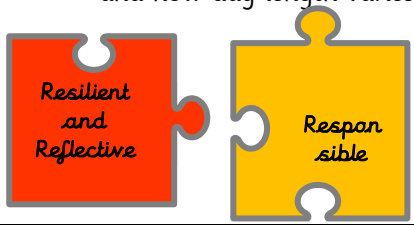
Topic / Summer Two **Weather/Seasons** 	Pupils should be taught to: • observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies. 	Building on prior knowledge from FS. Children will have an understanding of how the weather changes as seasons change. Children will identify changes that they have noticed. Children produce pieces of art to show spring to summer. Focusing on how the weather changes from mild to cold. Children will record changes in the weather and look for patterns.	Seasons, spring, summer, weather, sun, rain, clouds, temperature	
Year Two				
Topic / Autumn One **Habitats** **COVID CATCH UP – YEAR 1 – Ongoing throughout the year** - observe and describe weather associated with the seasons and how day length varies. -observe changes across the four seasons	During years 1 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	Prior knowledge from Year 1 - Children know the names of common animals and their classifications e.g. mammal. Children know some basic needs of animals – e.g. fish breath under water etc. **Recap types of animals with the children** – the children will be reminded of the different types of animals e.g. fish, mammals, amphibians, reptiles and birds. **Living, dead and never been living** – children classify and group different objects after exploring and discussing them as a class. Children to go on a hunt around school to find the different things. E.g. trees, wooden fence, plastic chair.	adaptation alive basic needs carnivore characteristics conditions damp/wet/dry dark/light dead deciduous depend e.g. a meadow e.g. a pond e.g. a woodland e.g. on stony path	ocean omnivore pond rainforest reproduce seashore shelter sound suited/suitable touch use comparatives e.g. hotter woodland name local habitats

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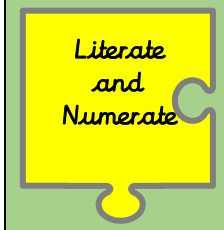
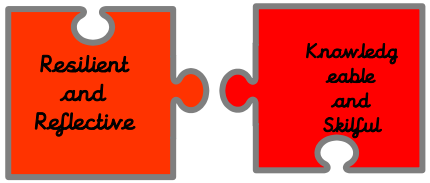
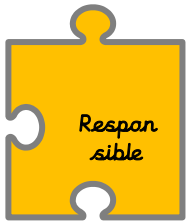
	Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 	**Introduce habitats** – children explore what is a habitat is using videos, books and pictures as stimuli. Children to know what animals live in different habitats and why. **Sorting animals** – children to be able to sort animals depending on their habitats. Children to have an understanding of where different animals live. **Exploring and identifying habitats** – children to explore different habitats and why they are suitable for different animals. Children to discuss why certain animals wouldn't be suited to certain habitats. E.g. why a squirrel couldn't live in a pond. **Make a habitat –** children to make a habitat. E.g. bug hotel. Children to decide suitable materials and an appropriate place to put them. Children to predict which animals will live in their habitats. **Observe habitat** – children to observe their habitats over a period of time and take note of any animals living there. **Discuss findings –** children to record what animals lived in their habitats. Children to discuss why they live there. Where their predictions correct? **School Trips/Event** **Walk to the Nature Reserve** – children to look at autumn changes.	e.g. under bushes e.g. under log environment evergreen feed food food chain grassland grow habitat have offspring/young/babies herbivore hot/warm/cool/cold life processes light living/ non living micro habitat move 	name micro-habitats never been alive 

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Topic / Autumn Two **Materials**	During years 1 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 Pupils should be taught to: ▪ 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. ▪	Prior knowledge from Year 1 – children have been taught common materials and some properties. They are aware of different objects made from these materials. COVID CATCH UP – Year 1 - 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 -distinguish between an object and the material from which it is made -identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock **Classifying materials** – building on prior knowledge from KS1. Children to group materials depending on properties. E.g. transparent objects and opaque objects. Children to recap vocabulary from last year. **Discussing suitability of materials** – children to explore different materials. Children to discuss what is made from different materials and why? Children to explore what would happen if objects were made from different materials. E.g. a paper chair **Suitability of materials** – children to carry out an investigation on a chosen material. Which material would be the best? Why? Children to make predictions and ask questions. Children to carry out their own experiments. **Discussing findings** – children to discuss what they found out about the materials. Children to share findings and decide which material is suitable and why. **Manipulating materials** – children to manipulate a variety of materials. Which materials can be changed by	absorbent bend/bending ceramic changed characteristics cold compare cotton dull fabric flexible flexible squeeze/squeezing glass group hard hardest hot manufactured material metal non reflective opaque plastic property pull/pulling	push/pushing reflective rigid rough rubber strength safe shape shiny stretch/stretching smooth soak up soft squash/squashing stretchy strong/weak strongest suitable/unsuitable translucent transparent twist/twisting use/useful waterproof wood wool

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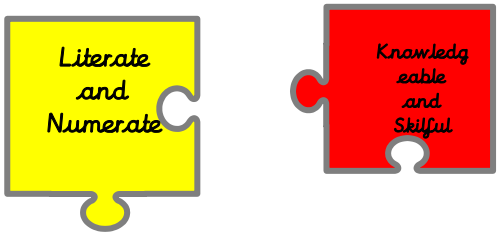
		squashing, bending, twisting and stretching? Which materials can't? 		
Topic / Spring One **Animals Including humans**	During years 1 pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking simple 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 Pupils should be taught to: • notice that animals, including humans, have offspring which grow into adults	**Recap animals** –Children know different animal types and some common habitats. COVID CATCH UP – **Year 1** identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Animals and their offspring** – Discuss animals and their babies. Children to match offspring to correct mothers. How do they animals change overtime? Do any animals look different? **Humans and their diets** – Recap what humans need to survive. Discuss what is meant by a balanced diet.	adults air babies baby/toddler/child/teenager balanced basic needs bread, rice, potato, pasta breathing change child clean dairy drugs exercise fats food food types	foods high in fat or sugar fruit and vegetable germs grow healthy hygiene meat, fish, egg, beans medicine milk and dairy foods offspring older/younger survival teenager toddler unhealthy wash

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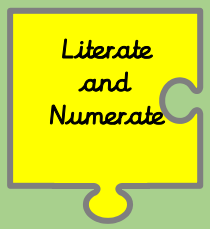
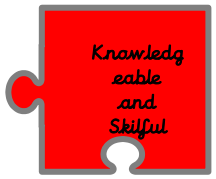
	• find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.  	Introduce children to the different food groups. Children to design a healthy lunch box. **Food Groups** – introduce the food groups to the children. Children to understand the food pyramid and how much of each food type they need to consume. **Exercise** – children to understand the importance of exercise. Children to explore different exercises. How did it make you feel? Why is it important? **Hygiene –** Discuss the importance of keeping clean. Focus on personal hygiene and dental hygiene. Children to design posters to promote good hygiene. 		water young
Topic / Spring Two **Habitats – endangered animals**	Pupils should be taught to: • 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 and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their	**Recap animals** - children are aware of what herbivores, carnivores and omnivores are from year 1. COVID CATCH UP from Year 1 - identify and name a variety of common wild and garden plants including deciduous and evergreen trees -identify and name a variety of common animals that are carnivores, herbivores and omnivores **Recapping carnivores/omnivores/herbivores** – Discuss the differences between the different animals. What food do they eat? Children to group and sort animals depending on what they eat. Children will understand that animals need different food sources to survive.	adaptation alive basic needs carnivore characteristics conditions damp/wet/dry dark/light dead deciduous depend e.g. a meadow e.g. a pond e.g. a woodland e.g. on stony path e.g. under bushes	ocean omnivore pond rainforest reproduce seashore shelter sound suited/suitable touch use comparatives e.g. hotter woodland name local habitats

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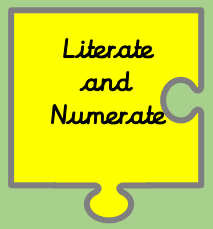
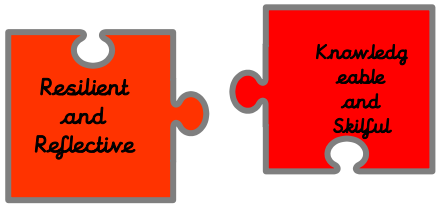
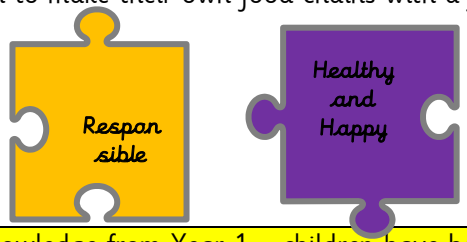
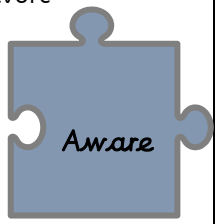
	habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 	**Staying alive** – what do humans and animals need to live? Class discussions and comparisons between different animals. Writing opportunity as a follow up. **Dependency** – children to look at a selection of habitats. What do animals use from their habitats to survive? E.g. water from rivers, food from plants and other animals. Children to discuss what animals need to stay alive. **Food Chains** – children to understand that animals get their energy from different animals and plants. Model producing a food chain for a familiar animal. Introduce the vocabulary producer, predator and prey, consumer. Children to make their own food chains with a familiar animal. 	e.g. under log environment evergreen feed food food chain grassland grow habitat have offspring/young/babies herbivore 	name micro-habitats never been alive hot/warm/cool/cold life processes light living/ non living micro habitat move
Topic / Summer One **Materials**	During years 1 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	Prior knowledge from Year 1 – children have been taught common materials and some properties. They are aware of different objects made from these materials. **Man-made and natural** – discuss the differences. Can you children group the materials? Which ones are man-made? Which materials are natural? **Experiment** – As a class, design an experiment to explore the materials strength, magnetism, suitability, flexibility etc. Discuss what you will need. Encourage children to make predictions and discuss what resources you will need.	absorbent bend/bending ceramic changed characteristics cold compare cotton dull fabric flexible flexible squeeze/squeezing glass group	push/pushing reflective rigid rough rubber strength safe shape shiny stretch/stretching smooth soak up soft squash/squashing stretchy

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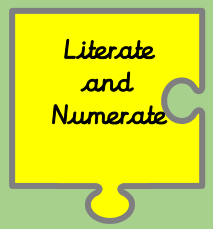
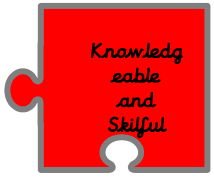
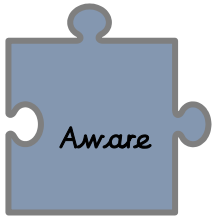
	Pupils should be taught to: • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.  	**Carry out experiment** – children to carry out their own experiments. Were their predictions correct? What did they find out? What materials were best? **Write up** – children to write a conclusion about their experiment. What did they find out?  	hard hardest hot manufactured material metal non reflective opaque plastic property pull/pulling	strong/weak strongest suitable/unsuitable translucent transparent twist/twisting use/useful waterproof wood wool
Topic / Summer Two **Plants**	During years 1and 2 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	In Year 1, children know the names of some common plants. They can name and label the features of a flowering plant (roots, stem, leaves and petals). COVID CATCH UP – Year 1 Identify and describe the basic structure of a variety of common flowering plants, including trees	damp/wet/dry dark/light die fully grown germinate/germination grow/growth healthy hot/warm/cool/cold light	

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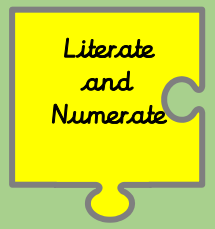
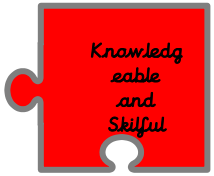
	observing closely, using simple equipment • Performing simple tests • Identifying and classifying • using their observations and ideas to suggest answers to questions Pupils should be taught to: • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  	<u>Local plants</u> – children to explore plants around the school environment, including trees. How many can they name? What are their features? <u>Healthy Plants</u> – children to discuss what plants need to stay healthy. Watch time lapse videos of plants growing over time. <u>Experiment</u> – What do plants need to stay healthy? Children design an experiment and carry it out. They make a prediction and give an explanation why they think this. Over a few weeks the children observe what has changes and compare their results. <u>Experiment Write Up</u> – children conclude their findings and discuss what they have found out from their experiment. Did it match their original prediction?  	mature plants seedling shoot soil survival temperature use comparatives e.g. hotter water wither/limp

Science Curriculum Coverage: Key Stage Two

Expected Vocabulary. NC Objectives. Intended activities. Additional knowledge for upper year groups

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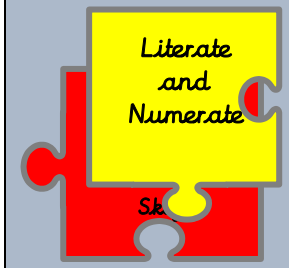
Year Three	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One **Animals, including Humans** 	Pupils should be taught to: • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement  	Year 1 - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Year 2 - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • **Food groups** – discuss the different food groups, what they are and how a balanced diet is needed. Use ipads to research examples of foods for each group and how much we need of each. • **Skeleton –** cut/stick/split pin a diagram of the skeleton. Label the different bones and explain the functions. • **Muscles** – get the children to do different movements involving different muscles. Can they feel the muscles moving? Can they tell which ones are relaxing and contracting? Create a model of the arm, labelling the different muscles. • **Types of skeletons** – discuss the different types of skeletons and why animals have different ones. Look at pictures of different animals and sort them by the type of skeleton. Explain the difference between the types. • **Match animals to the type of food they eat** - Put mixed ability pairs into groups of 6 then each pair finds out about the diet of one of the consumers from the first page and feeds back to the others in the group. Mixed ability pairs work together to sort pictures into three groups and draw a type of food that they would eat. • **Food chain** - Give children cut up pictures to find others in the class that they think would create a food chain. Create a food chain and explain how it works, using key vocab.	food groups, carbohydrates, energy, vitamins, minerals, protein, calcium, portions, vegetarians, vegans skeleton, bones, endoskeleton, spine, vertebrae, radius, ulna, tibia, fibula bone, muscles, joint, contract, pulls, bend, biceps, triceps, relax, Exoskeleton, Endoskeleton, hydroskeleton, producers, consumers, diet, herbivores, carnivores, omnivores, Organisms, Sunlight, food chain, ecosystem,

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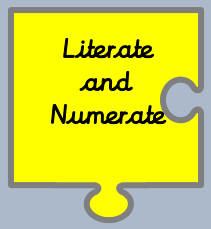
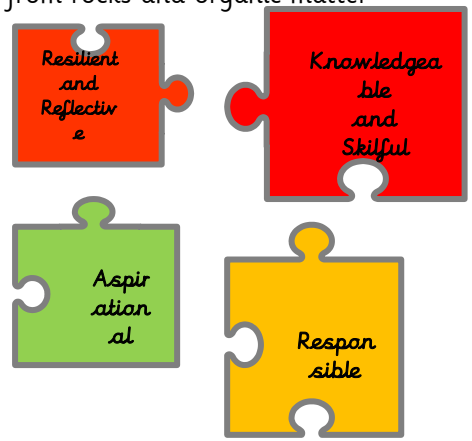
			producers, consumers, photosynthesis
Topic / Autumn Two **Rocks and Soils** 	• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter 	• **How are fossils formed? –** Look at examples of fossils to discover what they are and think about how they are made. Use pictures to help explain how they are formed. Create own fossils using small plastic animals, plasticine and plaster of Paris. • **Properties of rocks** – look at lots of different rocks using magnifying glasses and compare them. Can they identify any of the properties? How are they similar/different? Sort pictures and facts into the different names of rocks. • **Investigate the properties of rocks** – using a selection of rocks, conduct an experiment to investigate the properties – does it float, can it be scratched, is it porous? Record results in a table. • **Compare hardness of rocks** – provide children with a variety of rocks and investigate the hardness by using the rocks to scratch each other. Record findings using a frequency table and/or bar chart. • **What is soil made of? –** Put a soil sample in a large bottle (e.g. 2l drinks bottle). Add some water and observe the soil at various points over the week. Draw and label their observations. • **How soil is form** – read the story of Roger Rock and discuss how rocks turn into story. Retell the story using a storyboard.	Fossils, palaeontologist, sediment extinct Sedimentary, Igneous, Metamorphic, chalk, diamond, sandstone, slate, granite, flint, marble, limestone, porous
		•	
Topic/ Spring Term **Plants**	Pupils should be taught to: Sc3/2.1a identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Sc3/2.1b explore the requirements of plants for life and growth (air, light,	In Year 2, pupils learned to observe and describe how seeds and bulbs grow into mature plants and find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Plants, light, sun, water, roots, stem, grow, growth, leaves, flower, pollen, soil, germinate, shoot, minerals, nutrients, seedling, wilting, seed

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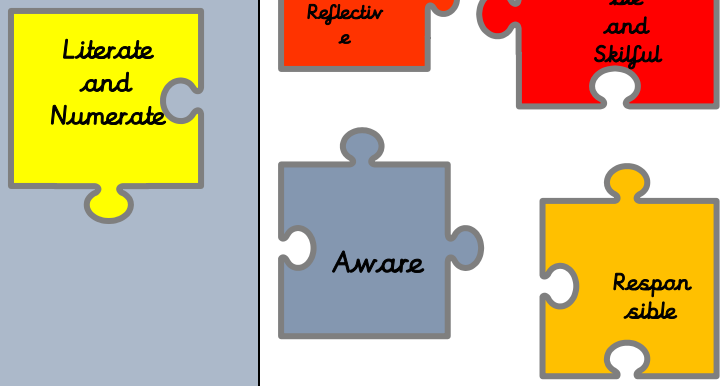	water, nutrients from soil, and room to grow) and how they vary from plant to plant Sc3/2.1c investigate the way in which water is transported within plants Sc3/2.1d explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	• **Main parts and functions of flowering plants** - Children select three pictures from sheet 1 and label the parts – they should choose ones that show examples of each SEN/LA children to match definitions using template – MA/HA/GAT to create own definitions but could use template if they prefer for layout. • **How water is transported in plants** – set up an investigation of a white carnation in water and food colouring. Observe what happens to the flower and how it changes colour. • **Needs of different plants** – set up investigation: cactus in sand, cress under soil and tomato plant in soil. Discuss how they have been planted differently and how they are receiving different resources. Make predictions, what do you think will happen to the plants? • **Competition for resources** – set the scenario of a farmer needing to grow as many plants as possible. Set up an investigation of onion seeds in pots: 1 seed, 4 seeds, 9 seeds, 16 seeds. Predict what they think will happen and observe. Discuss fair test – equal watering and sunlight. • **Life cycle of a flowering plant** – link back to parts of a flowering plant and functions. Discuss the life cycle, then LAP/MAP to order the pictures/explanations of each stage of the life cycle. HAP challenge to draw/write themselves. • **Pollination** – introduce stigma and stamen. Discuss how plants can't transport the pollen themselves and explain the process of insect pollination. Chn to use ipads to research different methods of pollination and use pictures/words to explain at least two methods. • **Seed dispersal** – Discuss the different methods of seed dispersal. Chn provided with pictures of different types	dispersal, stamen, stigma, pollination

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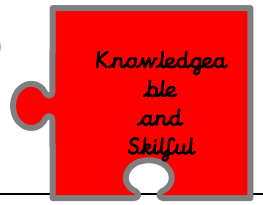
		of seeds. Cut them out and label them with their method of dispersal.	
Topic / Summer One **Forces and Magnets**  	Pupils should be taught to: Sc3/4.2a compare how things move on different surfaces Sc3/4.2b notice that some forces need contact between 2 objects, but magnetic forces can act at a distance Sc3/4.2c observe how magnets attract or repel each other and attract some materials and not others Sc3/4.2d 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 Sc3/4.2e describe magnets as having 2 poles Sc3/4.2f predict whether 2 magnets will attract or repel each other, depending on which poles are facing.  	In Year 2, pupils have investigated a variety of materials, including metal, and testing magnetism. • **Investigate magnetic materials** – children given magnets and a variety of materials and 5 minutes of free investigation. Children to generate questions to structure their investigation, then sort the materials using a Carroll diagram. • **Investigate poles of a magnet** – discuss the different poles of a magnet, how they interact with each other and introduce the names and the words "attract" and "repel". Give children a chance to investigate the different poles and explain how it works. • **Investigate magnetic forces** – pose the question "does a magnet have to touch an object to attract it?" Give children time to make predictions and guide their experiments with the ideas of: size of magnet, size of object, distance. Children to make a prediction, then carry out the experiment. • **Investigate how magnets work through different materials** – provide the children with paper clips and a variety of different materials. Make a prediction about which materials will and won't prevent the paper clip from attracting. Conduct the experiment and record the results in a table. • **Compare how materials move on different surfaces** – start off by discussing how different surfaces affect their scooter/bike. Now pose the question about the effect this has on magnets. Investigate a variety of materials, discussing how to ensure it is a fair test. Record results in a table/bar chart.	Magnetic, attract, repel, force, material Attract, repel, magnetic, poles, North, South, opposite Fair test, variables

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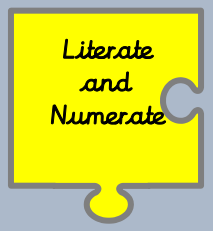
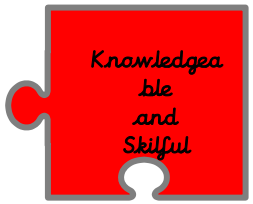
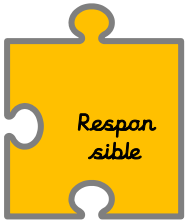
		• **Most powerful magnet** – how can we work out which magnet is the most powerful of them all? Set up an experiment with a magnet, a paper clip, sandwich bag and 1p coins. Test how many coins each magnet can hold. Introduce the term "variables" and "fair test". Record findings in a table/chart.	
Topic / Summer Two **Light** 	Pupils should be taught to: Sc3/4.1a recognise that they need light in order to see things and that dark is the absence of light Sc3/4.1b notice that light is reflected from surfaces Sc3/4.1c recognise that light from the sun can be dangerous and that there are ways to protect their eyes Sc3/4.1d recognise that shadows are formed when the light from a light source is blocked by a solid object Sc3/4.1e find patterns in the way that the size of shadows change.   	Prior knowledge from FS – children know the different between light and dark and know how to make shadows. • **Identify light sources** – introduce the term "light sources" and explain that a light source is something that makes its own light. Some things appear to be lit up, but they might be lit by something else. Give children a selection of pictures and ask them to sort them into light source and non-light source. • **To identify light sources and reflectors** – go to different areas of the school and tally how many light sources there are in different rooms. Then, turn this into a bar chart. Discuss where had to most light sources and why they think that is the case. • **Shadows** – using torches, objects and paper stuck to the wall, create a variety of shadows. Draw around the shadows on the paper and see what they look like. Write an explanation of how shadows are formed. • **Different sized shadows** – conduct an investigation about what happens when you move the light source further/closer to the object. Set up the experiment with a starting point, then predict the measurements of the shadow before each movement of the light source. Record results in a table/cart. • **Transparent, translucent, opaque** – recap lessons on shadows and introduce the terms transparent, translucent, opaque. Explain how the different types of objects let through different amounts of light.	light, light source, non-light source, reflect, travels shadow, opaque, light source, surface Transparent, translucent, opaque, shadow, light, light source, strong, weak,

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		Investigate a variety of objects in the classroom and sort them into the correct category. • **Sundial** – Create a sundial on the playground using cricket wickets, making marks on the ground and labelling the different times. Make predictions about where you think the shadow will be at other times. Discuss why the think the shadow moves.	
Year Four	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One **Animals, including humans**	Statutory requirements • Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and prey Non Statutory requirements (Unit related use of skills) • Pupils should be introduced to the main body parts associated with the digestive system, for example: mouth, tongue, teeth, oesophagus, stomach, and small and large intestine • Explore questions that help them to understand their special functions. Pupils might work scientifically by:	In Year 2, children have learned about carnivores, herbivores and omnivores. They have also learned about simple food chains and how animals get their food. • **Identify different teeth** - in pairs the children will use plasticine/ clay to create their bottom row of teeth. On flashcards, they will then label the teeth on one side and on the other side write a sentence describing their function. Pictures to be taken and stuck in books. • **To find out what damages teeth and how to preserve them** – two lessons. Plan, conduct and evaluate an investigation using different liquids and egg shells. Observe what happens over a week and record their findings. • **Compare teeth of carnivores and omnivores –** discuss the difference between carnivores and omnivores and why they might need different teeth. Create a double-bubble to compare the teeth. • **Food chains** – discuss predators, prey and producers. Predict which role different animals play and discuss how some things can be more than one! Use pictures to create their own food chains. • **Digestive system –** learning to learn market place activity to learn about the digestive system. Then, create a non-chronological report or poster about it.	teeth, canines, cutting, grinding, incisor, molar, pre-molar, premolars, rip, tear, chew, grind and cut cavities, dentine, enamel, fluoride, gums, plaque, pulp cavity and tooth decay teeth, carnivore, herbivore, omnivore, canines, cutting, grinding, incisor, molar, pre-molar, premolars, rip, tear, chew, grind and cut carnivore, herbivore, omnivore, consumer, producer, predator, prey

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Literate and Numerate Resilient and Reflective Healthy and Happy	• Comparing the teeth of carnivores and herbivores and suggesting reasons for differences • Finding out what damages teeth and how to look after them. • Draw and discuss their ideas about the digestive system and compare them with models or images.		anus, diet, digestion, digestive system, faeces, intestine, large intestine, mouth oesophagus, rectum, saliva, small intestine, stomach, swallowing and tongue
Topic / Autumn Two **States of Matter**	Aims of lessons • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Year 2 – pupils have investigated the properties of a variety of materials • **Solid or liquid?** – Discuss the properties of solids and liquids, using examples to support. Give the children opportunities to investigate different materials and sort them into liquid and solid based on their properties. Compare findings and address any misconceptions. • **Gas** – Use drama to model the three states. Compare the movement of the particles for each state. Explain what gas is and how it is all around us. Submerge some materials in water and investigate what happens – can they see bubbles escaping? What is happening here? • **Change of state** – observe materials being heated/cooled and note how they change from one state	solid, liquid, state, matter, particle, grain, category, classify, group, evidence, question, discuss, gas, proof, explain, solidifying, freezing, melting, condensing, evaporating, particles, thermometer, temperature, Celsius, Fahrenheit, degrees, precipitation, ice, rain, clouds, vapour,

Knowledgeable and

Aware

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	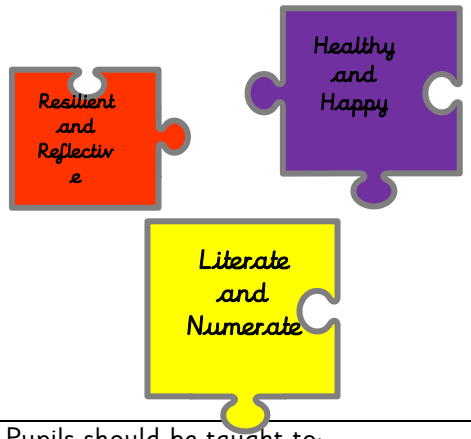	to another. Explain this process using scientific language. • **Water Cycle** – Recap changes of state, and discuss the different changes that can happen to water. Show condensation by breathing on cold mirrors. In groups, chn plan and set up an enquiry into the factors that speed up evaporation. • **Water cycle** – Use what they learned last lesson about the different states of water. Discuss how this happens in nature, draw and label diagrams of the water cycle, labelling the different changes in state. Discuss concept cartoons to address any misconceptions.	
Topic / Spring One **Electricity**	Pupils should be taught to: •identify common appliances that run on electricity •construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers •identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery •recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit •recognise some common conductors and insulators, and associate metals with being good conductors	Year 3 – they have learned that some light sources are powered by electricity. • **Explore electrical resources, find out what they already know** – give children time to have a look at a variety of electrical resources. Encourage chn to take to their peers whilst investigating these resources. Explain that we will be learning about mains and battery powered electricity. Jot down ideas they already know on post it notes. • **Dangers of electricity** – use an online resource to "visit" each room in a house and identify any electrical dangers. Use what they have learned to design an electrical safety poster with a partner and discuss an appropriate place around school to display the poster. • **Simple circuits** – chn will be given cards will simple circuit diagrams. They must predict whether or not the bulb will light, then make the circuit to find out. • **Conductors and insulators** – introduce the terms electrical conductor and electrical insulator. Give the children a variety of different materials and ask them to put them into the circuit to see if the bulb lights. Explain	electricity, circuit, switch, battery, plug, mains, appliance, device, wire, crocodile clip, bulb, buzzer, connection, power, cell electricity, danger, power, electrocute, plug, socket, safety electricity, circuit, switch, battery, plug, mains, appliance, device, wire, crocodile clip, bulb, buzzer, connection, power, cell, energy, flow, current conductor, insulator

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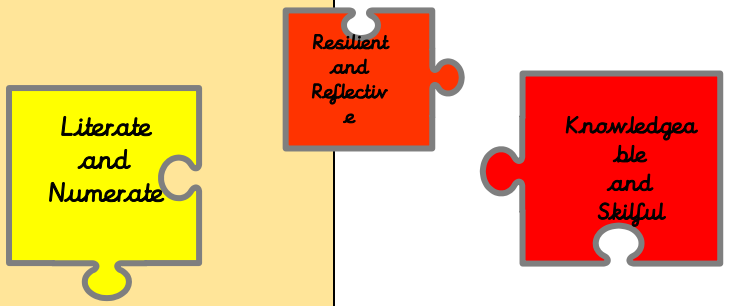		what happens what the electricity reaches the material and how this links to conductors/insulators. • **Buzzers, switches and circuit diagrams** – independent activity – make a circuit including a buzzer and a switch and draw a circuit diagram. Guided activity – make a buzz-wire (Operation style) game. • **Quiz** – chn to work in groups, taking it in turns to be the quiz master. Quiz each other on electricity, using the buzz wire games to score/lose points as they answer questions.	
Topic / Spring Two **Sound** 	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 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	• **Sound hunt** – move around the school, stopping in different places to record the sounds they can hear. Describe the sounds and record what made the sound. • **How sound travels to our ears** – work in pairs to create string telephones and investigate how the sound travels through the string. Explain that normally sound travels through the air, but model using a tuning fork in water to compare how the sound is transmitted. • **Pitch and volume** – introduce the new vocabulary and discuss what these mean. Give chn a variety of instruments and time to investigate how they can change the volume and the pitch of each instrument. • **Human/animal hearing** – look at pictures of different animals and discuss the position of their ears and how their move their ears. Why do you think this is? Why do you think animals have different sized ears? Use card to make different sized cones and position them in different ways on their ears – how does this affect their hearing? Link this back to their ideas about the animals. • **Sound-proofing** – Discuss why it might be useful to be able to block out sound. How do you think we can do this? Guide the children through designing an investigation, discussing how to ensure it is a fair test. Chn to conduct their experiment into the best material for sound-proofing.	sound, listen, hear, ears, noise, loud, quiet, silent, vibrations sound, transmit, medium, air, water, solid, vibrations, source, sound waves, particles, travel sound, volume, loudness, amplitude, pitch, soundwave, frequency vibrations, sound waves investigation, fair-test, factor (variable), prediction, results, resources, planning, muffle

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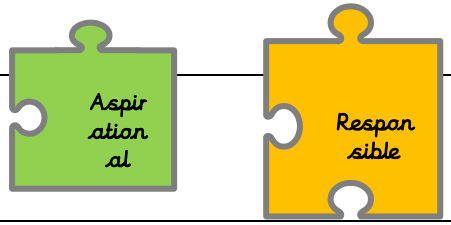
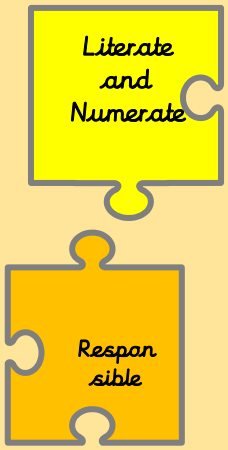
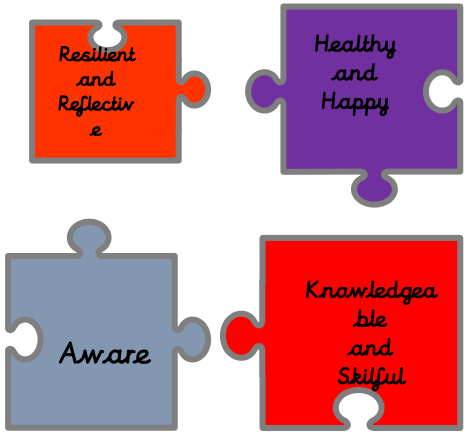
		• **Dragon's den** – give chn time to prepare a presentation about their sound-proofing product and hold a "dragon's den" style activity for them to evaluate their product.	
Topic / Summer Term **Living Things** 	•recognise that living things can be grouped in a variety of ways •explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment •recognise that environments can change and that this can sometimes pose dangers to living things 	Prior learning from Year 2 - 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 and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. • **Local environment** – explore the school environment, discussing which areas outside are best for wildlife. Then, read a letter from the Head explaining that we will be removing the wildlife area and building an adventure playground. Consider the impact and list the positive/negatives of doing this. Then, make a decision and explain why you think that. • **Natural changes** – discuss the different natural changes that animals face (*seasons, tides, volcano erupting, night and day, extreme weather*). Show the class how animals have adapted to survive the changes that they face. Chn are to design an animal that could survive all of the possible natural changes, using scientific vocabulary to describe it. • **Climate change** – recap last week's learning, adding that some changes are difficult for animals to survive – lack of food, space (a dolphin in a pond). Guide pupils through an investigate into how greenhouses work and link this to the greenhouse effect in climate change. • **Impact of change** – introduce deforestation. Model this using two large pots of soil with monopoly houses around the edge. One will have a mound of cress	Environment, change, living thing, danger. Change, adapt, danger, threat. Climate, change, danger, greenhouse, thermometer, test, carbon dioxide, results, graph, table. Impact, change, positive, negative, danger, living thing.

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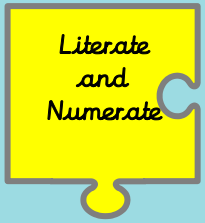
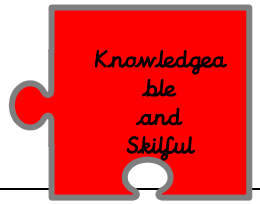
		(forest), one will not. Explore what happens when it "rains" (watering can). Discuss the impact that deforestation has and what can be done to prevent it. Work in groups to produce an informative poster. • **Change for the better –** give the children an area of the school (could simply be a window box) that they must redesign and improve. Decide which living things they are building it for and, therefore, what they will need to put in it. Chn should be able to use scientific vocabulary to justify their choices.	Change, positive, living things, environment.
Year Five	Curriculum Objective	Knowledge/Activity	Vocab
Topic / Autumn One and Two **Forces** 	I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. I can identify the effects of air resistance, that acts between moving surfaces. I can recognise that some mechanisms, including levers and pulleys, allow a force to have a greater effect. I can recognise that gear mechanisms allow a smaller force to have a greater effect. I can identify the effects of friction that acts between moving surfaces. I can identify the effects of water resistance, that acts between moving surfaces.  	In Year 3, children will have learnt to compare how things move on different surfaces and notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • **Gravity -** in groups of 3 look at words and definitions in envelopes. Discuss as class or move round groups for initial assessment. Give chn photos to discuss with a partner. In books draw labelled arrows showing the direction of gravity and resistance forces then to write observation statements that support the science behind the diagrams. • **Air resistance** – Parachute investigation. Chn decide which variable they would like to change (size, material, length of string). Make three different parachutes and conduct an experiment. • **Levers and pulleys -** In pairs children create table top see saw as per diagram and investigate with lever and fulcrum. Take pics as evidence for books and children to write some agreed general statements about what you must do to a) balance the lever, b)what happens when the load moves nearer the fulcrum	Support, fall, Earth, gravity, air resistance, friction, balancing force, weight, Newtons, resistance force, variables, moving surfaces, accuracy, precision, causal relationships, mechanisms, levers, pulleys, transfers, gears, refute, fall, water resistance

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		c) what happens when you move the fulcrum. Make and test different pulleys. What affect does a pulley have on the force used to lift an object? • **Gears –** Investigate the effect that different gear combinations has and select the most appropriate for: uphill, flat and downhill • **Friction –** Children to use a force meter and three different surfaces to investigate how much force is needed to travel over each surface. Link this to friction and create a graph to record their findings. • **Water resistance -** Boat shape investigation: explain that chn need to test the different shapes of boat (see images), but encourage them to organise the experiment themselves. Give them the guidance questions and ask them to think about variables. Chn to record their observations and the time each boat took (as speed).	
Topic / Spring One **Materials**	Pupils should be taught to: • compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the	In Year 1, pupils will have learnt to: - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - 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 • **Suitability -** Discuss how it is important to identify the right material for the job and give tables some picture cards to discuss why the material would not be suitable for the purpose. Feedback. Test a variety of materials to check their properties: soluble, porous, absorbent, transparent etc. Decide which material would be best for a suitcase and write an explanation. • **Separating a dry mixture –** provide children with a mixture a dry materials (sand, paper clips, crisps) and discuss how they could separate the different materials.	Properties, soluble, transparent, absorbent, light, flexible, hard, strong Mixture, separating, sieve, magnet

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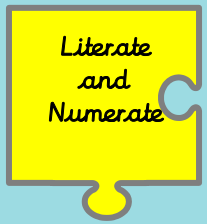
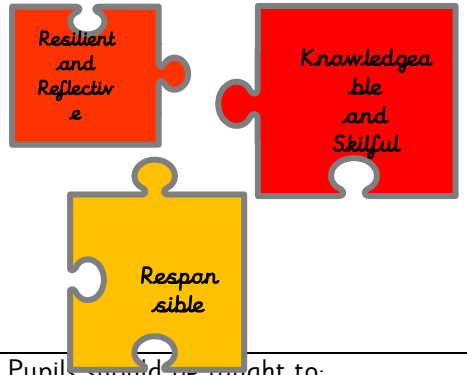
	particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda 	Provide various sieves and magnets and encourage children to investigate. • **Separating a wet mixture –** as previous lesson, provide children with a mixture of materials (sand, water and salt) and discuss how to separate the materials. How is this different to the previous mixture? Use filtration, dissolving, evaporation and condensing to separate the materials. • **Reversible/Irreversible changes –** model an irreversible and reversible change to the class (cooking an egg and melting chocolate). Class discussion on how they have changed and whether or not we can get them back. Learn to learn activity learning about the different types of changes. • **Insulation –** task: to keep an ice lolly from defrosting for as long as possible. Investigate different insulators using a variety of materials, thermometers and ice cubes. • **Spencer Silver –** research Spencer Silver and discuss how different inventions are often a collection of different discoveries over time. Create a biography.	Mixture, separate, filter, sieve, evaporate, condense, dissolve, solution Reversible, irreversible, melt, cool, change of state, gas, solid, liquid Insulator, solid, liquid, melt, cool, temperature
Topic / Spring Two **Earth and Space**	Pupils should be taught to: • 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.	Year 3 – children have learned about light sources and how shadows are formed. They have also made sundials and to understand how shadows move during the day. • **What I know and what I want to know** – introduction lesson. Give chn opportunities to discuss and record what they already know about space. Then, ask questions that they would like the answers to. Complete a space quiz (they will complete again at the end, scores should improve) • **Shape and relative sizes of the Earth, Sun and Moon -** Get children to sit in a circle and put all the spherical objects in the middle. Ask the children to choose the	Sphere, spherical bodies, evidence, Sun, Moon, Earth Shadows, day, night, orbit, Sun, moon, Earth

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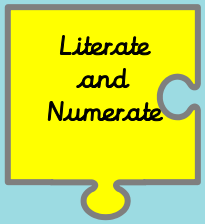	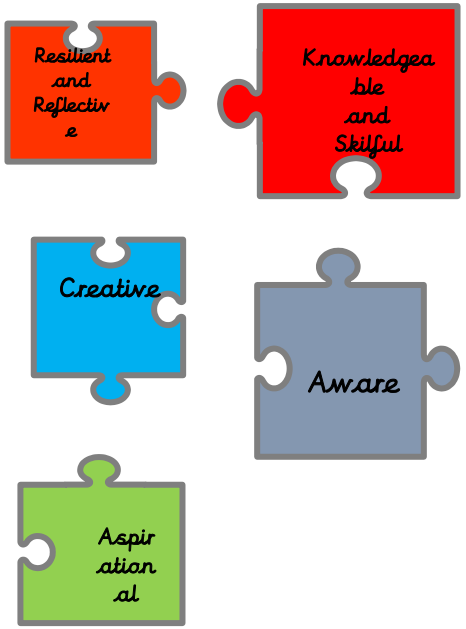	three that best represent the relative size of the Earth, Sun and Moon. Show them the best approximation. • **Shadows/Day and Night –** Activity 1: stand on the playground at different times of the day (draw around feet to remember position) and monitor changes in shadows over the day. Activity 2: Have children in three circles facing outwards, make the Sun, Earth and Moon. Model the movements and discuss how often you can see the Sun etc. • **Earth's orbit of the Sun** – watch a video about the orbit of the Earth and how this causes seasons. Chn to work in pairs to create a script for the video. • **Phases of the Moon –** using the inflatable moon (half lit and half in shade), sit in a circle around it and draw what you can see on your whiteboards. Then, move 4 seats clockwise and draw new view. Repeat until they are back to where they started. On their whiteboards, they should have all of the phases of the moon. • **Journeys into space** – In pairs, imagine that one of you has come back from travelling into space. What questions would you ask? Use ipads to research the answers.	Earth, Sun, orbit, seasons, climate, daylight hours Moon, phases, full, new, waning, waxing, gibbous, crescent, half Space station, Solar system, astronauts
Topic / Summer One **Living Things and their Habitats**	Statutory requirements • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals Non Statutory requirements (Unit related use of skills) • Pupils should study and raise questions about their local environment throughout the year.	In Year 2 pupils are taught to observe and describe how seeds and bulbs grow into mature plants. In Year 3 pupils are taught to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Previous unit – life cycles of humans, gestation periods and life expectancy of different animals. Ongoing activities: Plant a variety of plants – e.g. through seeds, bulbs, cuttings and observe changes over time	Mammals, birds, amphibians, insects, metamorphosis, propagation, life cycle, sexual and asexual, reproduction

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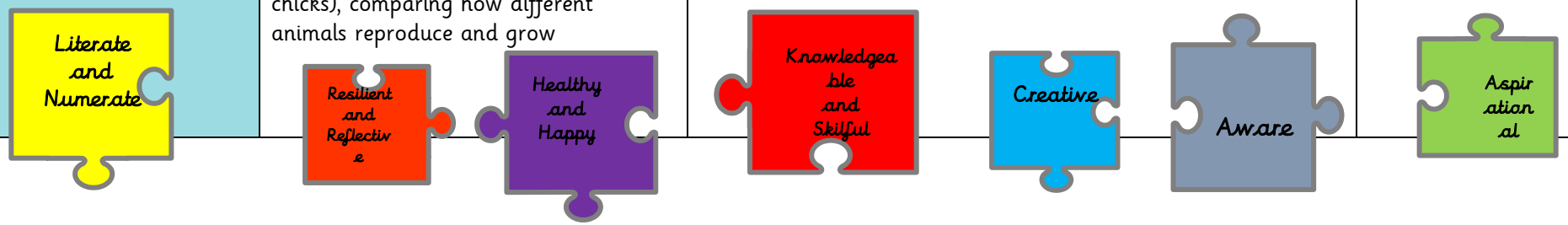
	• They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. • They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. • Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. • Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. • They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. • They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow	Caterpillars – observe the life cycle of a caterpillar. Write up each stage as our metamorphosis learning. • **Life cycle of a flowering plant** – label the different parts of a flower and discuss the parts they play in reproduction. Order the different parts of the flowering plant life cycle and explain what happens at each stage. • **Asexual reproduction –** discuss what asexual reproduction is and compare it to sexual reproduction. Take cuttings from different plants to observe asexual reproduction in action. • **Mammal life cycle –** discuss the different stages – link back to our learning about gestation and human life cycles. Choose a mammal to research the life cycle of. Record as an annotated diagram. • **Bird life cycles –** give children time to look at the different parts of a raw egg. Draw and label a diagram. Explain the purpose of each part of an egg and the life cycle. Children to write an explanation of the life cycle. • **Compare life cycles** – discuss the different life cycles we have learned about. Show simplified versions of each on the tables for chn to refer to. Note down similarities and differences between the different life cycles. Create a table comparing them. • **Jane Goodall –** treasure hunt style learning to learn about Jane Goodall. Facts about JG dotted around the field and playground. Chn to run around the playground, finding and recording the facts about JG. Turn this into a poster about JG's work.	



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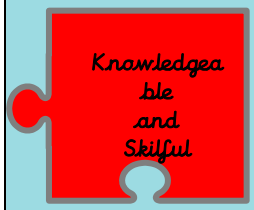
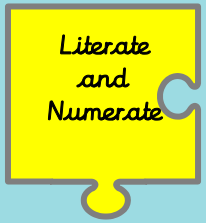
Topic / Summer Two **Animals, including Humans**  	Statutory requirements • describe the changes as humans develop to old age Non Statutory requirements (Unit related use of skills) • Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. • Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.   	Children will have learned about animals and their offspring in Year 2. • **Human life cycle** – order pictures of humans into a timeline. Match these up with the ages and names of the stages. Discuss the changes that humans go through at each stage. • **Gestation periods** – discuss what gestation means and make predictions about the gestation periods of different animals. Why did they make those predictions – what factors did they consider? Use research to identify the gestation periods – how accurate were their predictions. Now label the different animal classes – what do they notice? • **Growth in babies** – research growth in height and weight in babies/children and record their information in a line graph. Comparison of boys and girls. • **Puberty** – using fact cards of changes in puberty, sort them into male/female/both. Discuss the changes and address any misconceptions/concerns. Label diagrams of male and female with the changes that they go through. • **Changes as we age** – carousel of different types of change – physical, emotional, life and health. Find out about each of these types of change, then sort out fact cards into true and false. • **Life expectancy** – Discuss life expectancy, what it is, whether it has always been like that and the factors that influence it. Create a table for different animals of gestation periods and life expectancy. Write a paragraph noting any comparisons.	Observe, growth, changes, reproduction, asexual, sexual, prenatal, puberty, adolescent, foetus
Year 6	Curriculum Objective	Knowledge/Activity	Vocab

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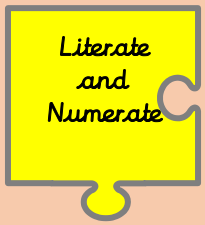
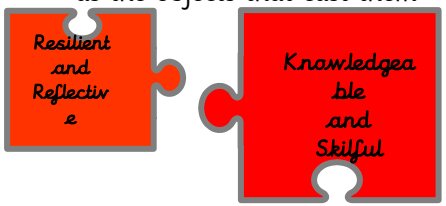
Topic / Autumn One **Light** 	Pupils should be taught to: • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels 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 lines to explain why shadows have the same shape as the objects that cast them  	Children will have learnt about light, reflective surfaces and shadows in year 3. Children have learnt about making and changing shadows in Year 3. • Explain how light travels – Work as a group to create a model using wool as rays of light to show how it travels. Then draw and label a diagram to show this. • How mirrors reflect light – Discussion on how light reflecting from a mirror helps us to see things. Children to make and test periscopes to see how it works. • Refraction – As a class, discuss the "straw in a glass" riddle. What can they see? What do they think happens? Discuss how refraction works. Chn to split into groups and complete two investigations – looking at an arrow through a glass of water and putting a picture under a glass and looking at it through the side as you pour water in. • Spectrum – Discussion about the colour of light, Isaac Newton and prisms (link back to refraction). Chn to use a torch and a prism to investigate the spectrum. Draw and label a diagram and explain what happened. Then, make a colour wheel, spin it and see what happens. Write a prediction then compare it with their findings. • How light enables us to see colours – investigate different filters then use this to create a "secret message" that can only be seen by certain filters. • Shadows – discuss shadows and how they look compared to the object that makes them. Chn to then create their own shadow puppet theatre, investigating how different movements of the puppets create different shadows.	light, source, travel, straight line, waves, ray, beam , energy. reflection, angle, incidence, normal, periscope refraction, bend, lens, focus, focal point, transparent. refract, spectrum, wavelength, colour, prism, visible, transparent, rainbow. filter, colour, light, see, reflect, absorb shadow, light, source, opaque, size, distance, change, titl, cast.

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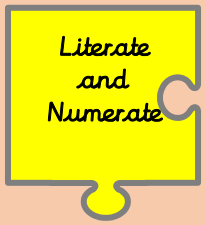
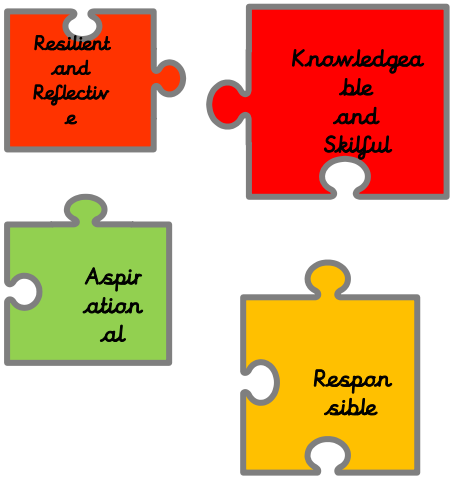
Topic / Autumn Two **Electricity** 	Pupils should be taught to: • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram 	In Year 4, children will have learnt to : - construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery - recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • Research a scientist - Using the information pages on the electricians, the internet and any information books from the library, research and make notes about a chosen scientist linked to electricity – Thomas Edison, Nikola Tester, Alessandro Volta, Michael Faraday. Children to create a mini-biography in their books about their chosen scientist. • Recognise and draw scientific symbols - Children to label parts of differentiated circuit diagrams and convert informal circuit pictures into scientific diagrams and vice versa. • Voltage - In mixed ability groups and on sugar paper, children to plan an investigation into voltage, e.g. what difference does voltage make. They could test bulbs, buzzers or motors. Children to record their predictions and the stages of their investigation in circuit diagrams correctly labelling the voltage. Children to carry out their planned investigation recording their findings on the sheet (LAP) or in their books. • Plan an investigation about components - Pose the question for discussion: Does wire length affect how	Circuit, components, buzzers, switches, cell, wires, bulbs Voltage, cells, bulbs, buzzers, motors Dependent variable, independent variable

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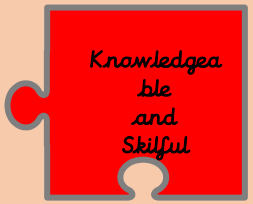
		components in a circuit work? Children to use the appropriate planning sheet. Support: children to discuss the different variables with an adult and create a list. Give children key words for planning. Greater depth: children to formulate their own questions. • Conduct an investigation - Children to create a table of results before conducting their investigation. • Plan and conduct a follow up investigation - Children to now plan a further investigation based upon their findings. They should plan a new question and make new predictions explaining how these are linked to their results. Ensure children have considered the degrees of trust. Children to conduct their second investigation and record results.	
Topic / Spring One **Living Things and their Habitats**  	Pupils should be taught to: 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  	Prior learning from Year 4: recognise that living things can be grouped in a variety of ways; explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment; recognise that environments can change and that this can sometimes pose dangers to living things. • **Classification systems** – Recap classification of animals from Year 4 and the different ways that they could be grouped. Introduce Linnaeus and his five levels of classification. Allow pupils to use their own research of these levels to classify a variety of animals. • **Classification keys** - create a branching classification key for a variety of sweets. Think about their properties to write questions to sort the sweets. Once they have done this, move on to creating one for birds, bees and butterflies.	classification, kingdom, phylum, class, order, family, genus, species, Linnaeus, opinion, similarities, differences classification, kingdom, phylum, class, order, family, genus, species, Linnaeus, branching classification key, opinion, similarities, differences, group, observations, support, refute

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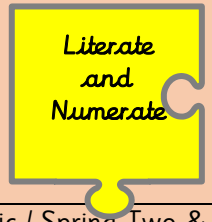
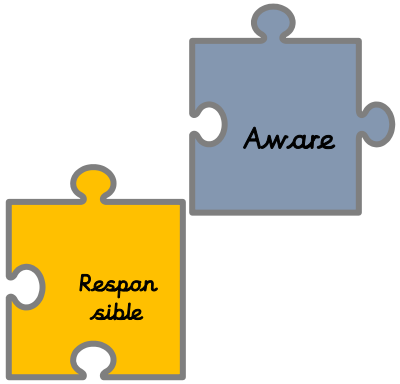
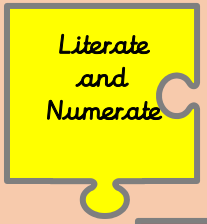
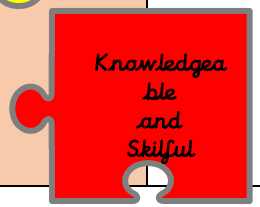
 	• **Classifying plants** – go into the local environment to collect 8-10 different leaves. Build on previous learning to create a classification key for the leaves and, as a result, the trees that they came from. • **Unusual living things** – give children pictures of lots of different unusual living things. Work in groups to describe each living thing and make suggestions about its habitat. Groups to move around and see if they can match up someone else's definition and picture. Then, do their own research to find out more about the living things. • **Design a creature** - imagine that they have discovered a new creature within the Animalia Kingdom, and they need to sketch it, describe it, name it and classify it.		
Topic / Spring Two & Summer One **Animals, including humans**   	Pupils should be taught to: • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans  	Children should have identified the parts and functions of different systems within the body Children will have learned about the different types of nutrients. • **Circulatory system (parts)** - Children to label parts of the circulatory system. • **Circulatory system (functions)** - Read and discuss information about the functions of the circulatory system as a whole class and work in pairs to answer the questions about the text. Create a board game based on what they have learnt. • **Transporting water and nutrients** - In ability groups, children to use notes to create a diagram on A3 paper explaining the transportation of water and nutrients through the body. • **Healthy lifestyle** - Children to create a brochure about Healthy eating using the Healthy Lifestyle template, as required or create an information text using Healthy Lifestyle information text template. • **Exercise investigation** - Children to plan their own investigation into the impact of exercise upon pulse rate	system, human, body, circulatory, skeletal, muscular, digestive organs, parts, heart, lungs, blood vessels, aorta, atrium, ventricle, artery, vein, pulmonary, superior vena cava, inferior, pulmonic, aortic valve, trachea, bronchus, bronchiole, diaphragms, air sacs, alveoli, capillary, intercostal muscles and ribs. nutrients, nutrition, water, system, circulatory, digestive, skeletal, muscular, blood, blood vessels, heart, lungs, stomach, gall bladder,

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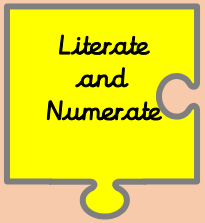
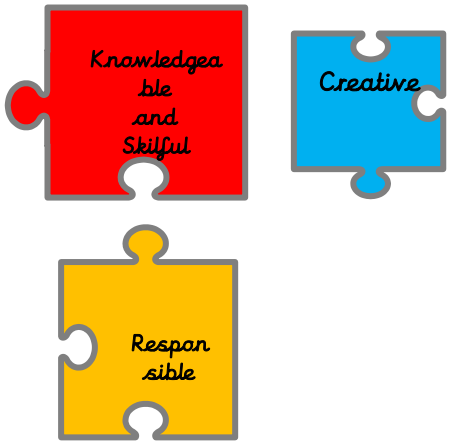
		or similar. Use exercise activity sheet to support them in writing up the investigation. • **Drugs and alcohol** - Using the Impact of Drugs and Alcohol on body sheets, children to label the body with the effects of different substances on different body parts. In mixed ability groups, children to create a presentation / TV / radio advert outlining to people the dangers of smoking and drawing upon the changes in attitude over time.	liver, small intestine, large intestine, pancreas, liver, kidneys, rectum, bladder. human, body, impact, evidence, smoking, drugs, legal, illegal, alcohol, heart, stomach, liver, kidneys, lungs, air sacs (alveoli), brain, mouth, fingers, toes, blood vessels.
Topic / Summer Two **Evolution and Inheritance** 	Pupils should be taught to: •recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago •recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents •identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution  	Year 2 – understand that animals produce offspring Year 3 - compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; describe in simple terms how fossils are formed when things that have lived are trapped within rock Year 4 - recognise that environments can change and that this can sometimes pose dangers to living things (adaptation). Year 5 – life cycles of plants and animals • **Inherited characteristics** – play a game of Guess Who, using pictures of the children in the class. Use these to identify and compare characteristics. Children to create dog top trump cards by researching different breeds online. Can they explain the variation within a breed? • **Advantages/disadvantages of characteristics** - ***Species adaptation research*** - get chn to research a range of other animals of the same species, found in different environments, to identify variation and possible advantages of certain variations. ***Variation game*** – chn to play game with habitat cards and variation scenarios. Chn need to decide if the variation is potentially positive or negative. ***Research local species*** -	offspring, characteristics, vary/variation, inherit/inheritance, environmental variation suited/suitable, environment, adaptation, characteristics, vary/variation, inherit/inheritance, natural selection

Redwood Primary School

		chn to research UK animals and plants and identify key characteristics or variations that enable them to survive. • **Implications of physical aspects of an environment –** explore extreme environments and identify characteristics that enable living things to survive in such environments. Chn will be given an extreme environment and challenged to design an animal and a plant that would survive in this environment. • **Evolutionary theories –** explain how we have evolved from walking on all fours, to two feet and discuss the advantages of this. Explain how we know about this from fossil records. Explore the evolution of birds, then use resources to create a cladogram using animals that are alive today. • **Just So Stories –** Children to write their own Just So story about an animal of their choice. Plan it by considering the characteristics of the animal, the environment and the role of other animals.	evolution, suited/suitable, environment, adapted/adaptation, characteristics, vary/variation evolution, natural selection, adapted/adaptation, characteristics, vary/variation, cladogram, fossils evolution, suited/suitable, environment, adapted/adaptation, offspring, characteristics, vary/variation, inherit/inheritance, fossils, natural selection