



Eaves Primary School Science Curriculum Map 2022-2023

FS1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic Title	It's good to be me!	Houses and Homes (Home!)	Day and Night The Weather	Growing	Creatures great and small	Journeys
Understanding the World <i>The Natural World / Science</i>	<p>Humans Opportunities to learn about the life cycles of humans Looking at photographs of the children as babies. Sharing books about how to look after a baby. Talking to an expectant mother, parent with a baby and elderly person. Talking to adults about photographs of the adults at different ages. Identifying pictures of babies, toddlers, children, adults and old people in magazines or other media. Drawing humans at different ages.</p> <p>Opportunities to learn about how to take care of themselves Talking about how they look after their own health and hygiene. Noticing when they feel hot and cold and how to respond to this. Choosing appropriate materials to protect themselves from the sun/ rain.</p> <p>Opportunities to learn about their senses Exploring the natural environment with their senses. Exploring objects using their senses e.g. smelling pots, feely bags, listening pots etc. Sorting collections of natural objects using their senses e.g. bark, pebbles, feathers, seeds, cones, leaves, sticks.</p>	<p>Living Things and their Habitats Going on local nature walks. Identifying natural objects and things left by humans. Gathering natural objects from nature walks to include in a collection for the nature table e.g. stones, leaves, seeds, conkers, pinecones, acorns, twigs, bark, shells, feathers. Encourage children to use all appropriate senses to explore the parts of plants on the walk, including the leaves, stems/trunks, flowers, seeds, berries and fruit. Encourage children to identify things left by humans in the surrounding natural environment e.g. litter. Remind children not to damage the plants in any way and only gather natural objects from the ground.</p> <p>Encourage children to talk about the objects in the collection, including where they came from on the walk and whether they were part of a plant, animal or neither. Encourage children to talk about the natural objects that they are observing closely, drawing and sorting. Encourage children to look for patterns on the natural objects in the collection. Encourage children to identify items in the collection that are the same or similar. Encourage children to ask questions about the surrounding natural</p>	<p>Materials, including changing materials Opportunities to explore a range of materials in a sensory way especially through touch, including more unusual materials. Exploring oobleck (corn flour and water), shaving foam, foam burst shower gel etc.</p> <p>Opportunities to shape and join materials Building junk models using a range of materials. Shaping and joining materials using equipment e.g. scissors, hole punch, including when using wood e.g. a hammer and nail.</p> <p>Opportunities to change materials Making smoothies. Mixing ingredients to make playdough, cakes, biscuits, bread, jelly etc. Melting chocolate for decorating bakes/biscuits or to combine with other ingredients e.g. cake, chocolate crispy cakes. Comparing cooked and uncooked pasta, noodles, rice or potatoes. Cooking popcorn in a microwave. Cooking cakes, biscuits, bread etc. Making ice lollies and ice-cream. Using medical ice packs including self-activated cool pads. Removing toys from ice.</p>	<p>Plants Visiting a garden centre Gathering seeds from the surrounding natural environment. Gathering seeds from fruit. Observing collections of seeds and bulbs using a magnifying glass or an app on a tablet. Drawing seeds and bulbs. Planting and caring for seeds and bulbs. Growing vegetable tops.</p> <p>Observing and photographing/drawing how plants grow and die. Observing and photographing/drawing what happens when fruit, vegetables and flowers are left to decay. Gathering seeds and digging up bulbs of the plants they grow. Designing seed packets. Using what they grow to make food to eat. Sharing books about plants and growing plants. Encourage children to talk about the range of seeds, bulbs, plants and gardening tools they saw on their trip to the garden centre. Encourage children to talk about the seeds they gathered from the ground from the surrounding natural environment, from pieces of fruit and plants they have grown. Remind children not to damage the plants in any way and only gather seeds from the ground.</p>	<p>Animals excluding Humans Caring for eggs and the young animals that emerge, such as chicks, caterpillars, frogs Sharing books with information about animal life cycles (fiction and non-fiction). Looking at and matching pictures of animals and their young. Watching videos of animals and their young and how they change over time. Playing games involving matching or describing animals and their young. Playing with small world animals, matching adults to their young. Visiting a farm, zoo or pet shop, particularly to see young animals. Talking about the sounds adult and young animals make and comparing them. Drawing adult animals and their young.</p> <p>The children will identify a variety of minibeasts that live in the garden. They will use of all their senses in hands on exploration of natural materials and animals. They will explore natural materials in the outdoor environment to investigate and talk about, to create a suitable habitat for garden mini-beasts. Learn to identify a variety of farm animals, matching adult animals to their young. The children will learn to understand the life cycle of a farm animal.</p>	<p>Forces Pushing floating objects under water e.g. balloons, table tennis balls etc. Exploring magnets of different shapes and sizes. Exploring springs of different sizes, both compression and extension springs. Using bikes and scooters on different surfaces and ramps.</p> <p>Opportunities to explore how things work Testing a range of objects to find out if they float or sink. Playing games that contain springs e.g. bagatelle. Playing with wind-up toys. Racing wind-up toys. Playing with gears and pulleys e.g. sets of gears, large playground pulleys etc. Playing with magnetic toys e.g. train carriages joined by magnets, magnetic construction kits etc.</p> <p>Opportunities to explore how objects/materials are affected by forces Pushing, pulling, twisting and bending malleable (e.g. modelling clay, playdough, springs, pipe cleaners, elastics, sponges etc.) and non-malleable objects/materials. Cutting and joining objects/materials e.g. wood, building kits with nuts and bolts etc. Encourage children to push floating objects under water and talk about how it feels the further they push the object under the water.</p>



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	<p>Looking closely at natural objects using a magnifying glass or app on a tablet. Going on a sound walk. Playing guessing games where children pick an object and either describe it or are asked questions to identify it. Playing listening games. Sharing books about senses and sensory impairments. Tasting food. Encourage children to describe how they have changed since they were babies. Encourage children to talk about how to care for a baby. Encourage children to ask questions of an expectant mother, parent with a baby and elderly person. Encourage children to talk about what they can do now that they were not able to do when they were babies, including how to look after themselves. Encourage children to talk about objects using their senses to describe them.</p> <p>The children will use all their senses to explore a variety of natural materials. Children will make collections of natural materials to investigate and talk about. The children will use magnifying glasses and talk about what they see, using a wide vocabulary. The children will explore parts of the body, naming. Recreate a 'body' through building 'Stickman' with sticks found in the Woodland Garden.</p>	<p>environment and the natural objects in the collection. Using a magnifying glass or a tablet with an app to observe the natural objects in a collection closely. Drawing natural objects in the collection. Grouping together natural objects that are similar in the collection. Using natural objects to make pictures and patterns.</p> <p>The children will explore and investigate how different toys work such wind-up toys, pulleys, sets of cogs and pegs with boards. What is natural in our community? Flowers we see locally daffodils (plant some bulbs ready for spring), Poppies (talk about significance of Poppies)</p>	<p>Adding baking soda and fizzy bath bombs to water. Adding coloured sweets to water. Adding currants to fizzy water/lemonade. Adding bicarbonate of soda to vinegar to make a bubbling potion.</p> <p>Encourage children to talk about the materials they explore, using their senses. Encourage children to choose from a range of materials when making models. Encourage children to join materials together to make something. Support children to name the material they have used. Encourage children to talk about why they have chosen a particular material, naming at least one property.</p> <p>Support children to measure out ingredients following a recipe. Encourage children to talk about ingredients. Encourage children to talk about the changes when ingredients are mixed, cooked, heated and cooled, frozen and blended. Encourage children to ask question about the materials they encounter.</p> <p>Light Switching light sources on and off. Comparing the brightness of light sources. Using different light sources in dark dens with reflective and fluorescent stickers. Opportunities to shine light on or through different materials.</p>	<p>Encourage children to describe and compare seeds and bulbs, including any patterns on them that they notice. Encourage children to separate seeds from bulbs. Encourage children to use non-standard measures, such as a spacing stick, to space seeds and bulbs appropriately to give them space to grow. Encourage children to talk about plants as they grow. Encourage children to talk about plants they have at home. Encourage children to talk about how fruit and vegetables decay and flowers die. Encourage children to use all their appropriate senses to explore the parts of plants, including the leaves, stems/trunks, flowers, seeds, berries and fruit, as they grow. Encourage children to ask questions about growing plants.</p> <p>The children will explore growth and decay over time linked to plants in the garden. The children will learn about a variety of foods and the importance of healthy eating and good dental care.</p>	<p>Encourage children to talk about what happens when they release an object under the water. Encourage children to play with the magnets talking about how they push away or pull towards each other. Encourage children to use bikes and scooters on different surfaces. Encourage children to ride scooters and bikes up and down ramps. Encourage children to drop objects into water and observe what happens. Encourage children to predict whether objects will float or sink. Encourage children to talk about how they change the shape of objects. Encourage children to talk about how they join materials together using different forces. Encourage children to talk about what they feel when using the woodwork tools and building kits with nuts and bolts etc. Encourage children to talk about how toys containing springs and elastics work. Encourage children to talk about how wind-up toys, pulleys and gear toys work. Encourage children to ask questions about forces, such as "What happens if I ...?"</p> <p>The children will learn that there are different countries in our world and be able to talk about the differences that</p>
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			<p>Shining light on or through different objects and materials e.g. reflective, non-reflective, transparent, translucent, opaque, coloured filters, holographic paper, glitter ball. Looking at their reflection in different types of mirrors e.g. plane, convex, concave and wobbly. Looking for their reflection in other objects. Making glitter pictures or pictures with reflective materials.</p> <p>Model asking questions about light sources. Encourage children to compare the brightness of different light sources. Encourage children to talk about what they see in the dark den and how it changes when a light source is on or off. Encourage children to talk about what they see when they shine light onto or through different objects or materials. Encourage children to talk about how their reflection changes in different mirrors. Support children to notice that they see their reflection on shiny objects and encourage them to predict which objects they will see their reflection in. Encourage children to draw what they see in different mirrors. Encourage children to ask questions about light sources.</p>			<p>they have experienced or seen in photographs. The children will learn that there are different planets in the solar system and talk about the differences that they have experienced and seen in photographs and videos. The children will explore the occupation of an astronaut. Explore forces and magnets. Floating and sinking.</p>
<p>Understanding the World The <i>Natural World / Science</i></p> <p>Development Matters Science</p>	<p>Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties.</p>	<p>Plant seeds and care for growing plants. Explore how things work.</p>	<p>Talk about the differences between materials and changes they notice.</p>	<p>Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the</p>	<p>Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the</p>	<p>Explore and talk about different forces they can feel.</p>



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	Talk about what they see, using a wide vocabulary. ASE Humans	ASE Living things and their habitats	ASE Materials, including changing materials. ASE Light	natural environment and all living things. ASE Plants	natural environment and all living things. ASE Animals excluding human	ASE Forces
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FS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic Title	Adventurers & explorers	Family	Our World	A World of Make Believe	Growing & Minibeasts	Animals
Understanding the World <i>The Natural World / Science</i>	<p>Humans Encourage children to look at photographs of different people and to describe them. Encourage children to describe their friends and family using photographs to help them. Encourage children to talk about how their friends and family are the same and different. Encourage children to compare themselves to characters in books. Encourage children to compare their hand, foot and fingerprints with their friends. Encourage children to talk about the people who look after them, both within their family and the wider community e.g. teachers, doctors, dentists etc. Encourage children to ask a dentist, nurse, meal supervisor/school cook, road crossing supervisor etc. questions.</p> <p>Encouraging scientific enquiry Classification Sort images of people according to their characteristics. Researching using secondary sources Find out information from visitors (dentist, nurse etc). Pattern seeking</p> <ul style="list-style-type: none"> • Are taller children faster? • Are taller children stronger? <p>Introduce the investigation station including magnets, light sources, different materials natural and manmade.</p>	<p>Light Encourage children to talk about the shadows that they see inside and outdoors. Support children to identify the light source and the object that is making the shadow. Support children to identify that see-through objects make pale shadows and non-see-through objects make dark shadows. Support children to measure shadows using their feet or other non-standard units. Encourage children to draw around shadows throughout the day to record how they change over time. Encourage children to talk about changes they feel when the clouds cover and uncover the Sun. Encourage children to talk about the changes to the shadows when the clouds cover and uncover the Sun. Support children to choose appropriate clothing when they are hot or out in the Sun. Encourage children to ask questions about the shadows and rainbows that they see.</p> <p>Encouraging scientific enquiry Comparative testing Compare the shape of shadows made by different objects.</p> <p>Classification Which objects/materials make dark shadows?</p> <p>Observing over time How do the Sun and shade change during the day?</p>	<p>Materials, including changing materials. Encourage children to talk about the natural materials they explore, using their senses. Encourage children to talk about the materials they are using when making pictures. Encourage children to choose from a range of materials, including natural materials, when making models and identify a key property that was required. Encourage children to reuse materials and talk about what can be recycled to care for the natural world. Support children to list the properties the material has. Encourage children to test that their model is fit for purpose and that the materials are suitable. Encourage children to compare and describe how materials change over time and in different conditions. Encourage children to take photographs or draw pictures to record how materials change. Encourage children to measure how objects change when they melt. Encourage children to ask questions about materials and how they change.</p> <p>Encouraging scientific enquiry Comparative testing How does popcorn made in a microwave compare to popcorn made on a fire?</p>	<p>Forces Encourage children to talk about how they changed objects to make them float or sink. Encourage children to count and record how small objects different 'boats' can hold before they sink. Encourage children to talk about how they changed how the cars rolled down ramps/gutters. Encourage children to talk about what happened when they poured sand/water through wheels and down gutters and how they changed this. Encourage children to compare how objects fall, including with or without parachutes. Encourage children to explore and talk about how they changed how different balls bounced. Encourage children to make different aeroplanes and compare how far they fly by marking where they land. Encourage children to describe how sand or water moves down pipes or gutters, or marbles travel down a marble run, and how they changed this. Encourage children to notice and talk about the objects in the playground that are moved by the wind. Encourage children to explore and talk about what they observe when turning bottles filled with different liquids and a marble upside down.</p>	<p>Living things and their habitats Support children to identify different plants e.g. trees, bushes, flowers, vegetables, herbs. Ensure children are careful when exploring the plants and do not damage them in any way. Encourage children to touch and smell the plants, when appropriate. Encourage children to talk about the plants they find. Support children to name the plants they find. Encourage children to find the same plant in a different place. Ensure children are careful when observing minibeasts and return them to where they found them. Encourage children to talk about the minibeasts they find. Support children to name the minibeasts they find. Encourage children to identify similarities and differences between the plants and animals they find in the surrounding natural environment and the contrasting one they visit. Encourage children to ask questions about the plants and animals they find.</p> <p>Encouraging scientific enquiry Classification Name and describe plants and animals they find in the school grounds. Pattern seeking Look for minibeasts in different areas of the school grounds.</p>	<p>Animals excluding humans Opportunities to learn about animals from a different habitat. Sharing books about animals in the local area and animals in other countries i.e. jungle, polar regions, desert, ocean. Matching animals to their habitats. Caring for a pet from a different habitat i.e. a tropical fish Describing different habitats. Encourage children to name and describe animals. Encourage children to ask questions about different animal and the habitats they live in. Encourage children to talk about how animals are cared for when they live outside their natural habitat. Sort animals according to where they live (classification) Use secondary sources to research how animals from a different habitat are cared for.</p> <p>Seasonal Changes Encourage children to talk about how they feel in different types of weather/seasons. Encourage children to talk about the clothes they wear in different seasons and why. Encourage children to talk about the weather throughout the year. Encourage children to find shelter or make shelters to keep themselves dry in the rain or shade themselves when it is sunny.</p>



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	<p>Earth and Space Encourage children to safely observe changes in the sky at different times of the day. Support children to link changes in the sky to other observations e.g. changes in temperature and brightness. Encourage children to observe the evening/night sky with their family. Model asking questions about space and space travel. Encourage children to ask questions about space and space travel. Encourage children to move as if they were in space or on the Moon. Encourage children to use observations from books and video clips when painting their model planets. Encourage children to talk about how binoculars or a telescope make distant objects appear larger and closer. Encourage children to sort animals by when they are active. Support children to decide criteria for the 'best' rocket. Support children to describe the movements of astronauts.</p> <p>Encouraging scientific enquiry Comparative testing Make and testing air-propelled rockets to find out which is the 'best'.</p> <p>Pattern seeking Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun.</p> <p>Research using secondary sources</p>	<p>How does a toy's shadow change during the day?</p> <p>Researching using secondary sources Find out about shadows. Find out about rainbows.</p> <p>Seasonal Changes Encourage children to talk about how they feel in different types of weather/seasons. Encourage children to talk about the clothes they wear in different seasons and why. Encourage children to talk about the weather throughout the year. Encourage children to find shelter or make shelters to keep themselves dry in the rain or shade themselves when it is sunny. Encourage children to talk about how the ground changes when it rains. Encourage children to measure the size of puddles using their feet after it rains. Encourage children to talk about how puddles change over time after it rains. Encourage children to talk about the animals and plants that they find in different seasons. Encourage children to ask questions about the weather and seasonal changes.</p> <p>Encouraging scientific enquiry Classification Which clothes are suitable for each season? Observing over time How does a puddle change over time?</p>	<p>How quickly do ice cubes melt in different areas of the playground? How are pizza bases different when made with different flours? How does a loaf cook differently in different tins? How do cupcakes cook if they have different amounts of mixture?</p> <p>Observing over time How does the block of ice change over time? How does a snowman change over time? How does cake mixture/bread dough change as it is cooked?</p> <p>Seasonal Changes Encourage children to talk about how they feel in different types of weather/seasons. Encourage children to talk about the clothes they wear in different seasons and why. Encourage children to talk about the weather throughout the year. Encourage children to find shelter or make shelters to keep themselves dry in the rain or shade themselves when it is sunny. Encourage children to talk about how the ground changes when it rains. Encourage children to measure the size of puddles using their feet after it rains. Encourage children to talk about the animals and plants that they find in different seasons.</p>	<p>Encourage children to ask questions about forces, such as "What happens if I ..."</p> <p>Encouraging scientific enquiry Comparative testing How many cubes/small plastic animals can fit in different 'boats'? Compare how cars move down ramps/gutters. Compare how wheels turn when sand or water is poured through. Compare how objects fall. Compare how objects fall with and without parachutes. Compare how different balls bounce. Compare how things move when blown. Compare how a marble moves through different liquids. Compare how different paper aeroplanes fly.</p> <p>Observations about cause and effect. Floating and sinking investigation for Pirate Pete.</p> <p>Seed bomb a patch of ground and watch it grow. Planting and tending seeds Plants observations talk about changes</p>	<p>Look for plants in different areas of the school grounds.</p> <p>Insect hunts and survey school grounds and Woodland/wild grounds (Tally)</p> <p>Make pitfall traps: How do mini beast react to different environments? Investigation</p> <p>Encourage children to talk about how the ground changes when it rains. Encourage children to measure the size of puddles using their feet after it rains. Encourage children to talk about how puddles change over time after it rains. Encourage children to talk about the animals and plants that they find in different seasons. Encourage children to ask questions about the weather and seasonal changes.</p> <p>Encouraging scientific enquiry Classification Which clothes are suitable for each season? Observing over time How does a puddle change over time? How does a snowman change as it melts? How does the natural world change with the seasons? Researching using secondary sources Find out about how animals behave in different seasons. Find out about the weather and seasons.</p>
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	<p>Find out about the Solar System, stars and space travel. Find out about nocturnal animals.</p>	<p>How does a snowman change as it melts? How does the natural world change with the seasons? Researching using secondary sources Find out about how animals behave in different seasons. Find out about the weather and seasons.</p>	<p>Encourage children to ask questions about the weather and seasonal changes. Encouraging scientific enquiry Classification Which clothes are suitable for each season? Observing over time How does a puddle change over time? How does a snowman change as it melts? How does the natural world change with the seasons? Researching using secondary sources Find out about how animals behave in different seasons. Find out about the weather and seasons.</p>			
<p>Understanding the World The Natural World / Science</p> <p>Development Matters</p>	<p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Recognise some environments that are different from the one in which they live.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Humans ASE Earth and Space</p>	<p><i>Compare and contrast characters from stories including figures from the past.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Recognise some environments that are different from the one in which they live.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Light ASE Seasonal Change</p>	<p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Recognise some environments that are different from the one in which they live.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Materials, including changing materials.</p>	<p><i>Compare and contrast characters from stories including figures from the past</i></p> <p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Forces ASE Seasonal Change</p>	<p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Recognise some environments that are different from the one in which they live.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Living things and their habitats</p>	<p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p><i>Recognise some environments that are different from the one in which they live.</i></p> <p><i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>ASE Animals excluding humans ASE Seasonal Change</p>

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Eaves Primary Knowledge Overview for Science

	Autumn	Spring	Summer
Year 1	Animals and Humans They know: <ul style="list-style-type: none"> • How animals vary. They have different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair. • Key features can be used to identify and group animals. • Animals eat certain things - some eat other animals, some eat plants, some eat both plants and animals. • Humans have key parts in common but these vary from person to person. • Humans (and other animals) find out about the world using their senses which are linked to particular parts of the body. 	Everyday Materials They know: <ul style="list-style-type: none"> • All objects are made of one or more materials. • Some objects can be made from different materials e.g. plastic, metal or wooden spoons. • Materials can be described by their properties e.g. shiny, stretchy, rough etc. • Some materials e.g. plastic can be in different forms with very different properties. 	Plants They know: <ul style="list-style-type: none"> • A vast array of plants grown locally and that they all have specific names. • Plants can be identified by looking at the key characteristics of the plant. • Plants have common parts but they vary between the different types of plants. • Trees keep their leaves all year whilst other trees drop their leaves during autumn and grow them again during spring. • When further afield to spot plants that are the same as those in the local area studied regularly, describing the key features that helped them
	Seasonal Change They know: <ul style="list-style-type: none"> • In the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again. • Weather changes with the seasons by collecting information about the weather regularly throughout the year. • In the UK, it is usually colder and rainier in Winter and hotter and dryer in the Summer. • Change in weather causes many other changes; some examples are numbers of minibeasts found outside, seed and plant growth, leaves on trees and type of clothes worn by people. 		

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Eaves Primary Knowledge Overview for Science

	Autumn	Spring	Summer
Year 2	<p>Uses of everyday materials They know:</p> <ul style="list-style-type: none"> All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. A material can be suitable for different purposes and an object can be made of different materials. Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. <p>Y2 Plants They Know:</p> <ul style="list-style-type: none"> Plants may grow from either seeds or bulbs. Seeds and bulbs germinate and grow into seedlings which then continue to grow into mature plants. Mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of the year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy. 	<p>Living things and their habitat They know:</p> <ul style="list-style-type: none"> All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (this is a simplification but appropriate for year 2 children). An object made of wood is classed as dead. Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels). Animals and plants live in a habitat to which they are suited which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well. The habitat provides the basic needs of the animals and plants – shelter, food and water. Within a habitat there are different micro-habitats e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect what plants and animals live there. The plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain. 	<p>Animals including humans They know:</p> <ul style="list-style-type: none"> Animals including humans have offspring which grow into adults. In humans and some animals these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages, then grow to adults. The young of some animals do not look like their parents e.g. tadpoles. All animals including humans have basic needs of feeding, drinking and breathing that must be satisfied in order to survive, and to grow into healthy adults. All animals including humans also need the right amounts and types of food and exercise. Good hygiene is also important in preventing infections and illnesses.

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Eaves Primary Knowledge Overview for Science

	Autumn	Spring	Summer
Year 3	<p>Rocks They know:</p> <ul style="list-style-type: none"> Rock is a naturally occurring material. There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft and have different sizes of grain or crystal. Rocks may absorb water and can be different shapes and sizes (stones, pebbles, boulders). Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock piece and the amount of organic matter affect the property of the soil. Some rocks contain fossils formed millions of years ago. Plants and animals died, fell to the seabed and became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water. <p>Forces and Magnets They know:</p> <ul style="list-style-type: none"> A force is a push or a pull. When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement. A magnet attracts magnetic material. Iron and nickel and other materials containing these e.g. stainless steel, are magnetic. The strongest parts of a magnet are the poles. Magnets have two poles – a north pole and a south pole. If two like poles e.g. two north poles, are brought together they will push away from each other – repel. If two unlike poles e.g. a north and south, are brought together they will pull together – attract. For some forces to act there must be contact but some forces can act at a distance e.g. magnetism. 	<p>Light They know:</p> <ul style="list-style-type: none"> We see objects because our eyes can sense light. Dark is the absence of light. We cannot see anything in complete darkness. Some objects, for example the sun, light bulbs and candles are sources of light. Objects are easier to see if there is more light. Some surfaces reflect light. Objects are easier to see when there is less light if they are reflective. The light from the sun can damage our eyes and therefore we should not look directly at the Sun and can protect our eyes by wearing sunglasses or sunhats in bright light. Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light. The size of the shadow depends on the position of the source, object and surface. <p>Animals Including Humans They know:</p> <ul style="list-style-type: none"> Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. Food contains a range of different nutrients that are needed by the body to stay healthy – carbohydrates including sugars, protein, vitamins, minerals, fibre, fat, sugars, water. A piece of food will often provide a range of nutrients. Humans and some other animals have skeletons and muscles which help them move and provide protection and support 	<p>Plants They know:</p> <ul style="list-style-type: none"> Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. The roots absorb water and nutrients from the soil and anchor the plant in place. The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. The leaves use sunlight and water to produce the plant's food. Some plants produce flowers which enable the plant to reproduce. Pollen, which is produced by the male part of the flower, is transferred to the female part of other flowers (pollination). This forms seeds, sometimes contained in berries or fruits which are then dispersed in different ways. Different plants require different conditions for germination and growth

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	Autumn	Spring	Summer
Year 4	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> Living things can be grouped (classified) in different ways according to their features. Classification keys can be used to identify and name living things. Living things live in a habitat which provides an environment to which they are suited (year 2 learning). These environments may change naturally e.g. through flooding, fire, earthquakes etc. Humans also cause the environment to change. This can be in a good way i.e. positive human impact, such as setting up nature reserves or in a bad way i.e. negative human impact, such as littering. These environments also change with the seasons; different living things can be found in a habitat at different times of the year. <p>Animals Including Humans</p> <ul style="list-style-type: none"> Food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. In the stomach food is broken down further by being churned around and other chemicals are added. The food passes into the small intestine, where nutrients are removed from the food and leave the digestive system to be used elsewhere in the body. The rest of food then passes into large intestine. Water is removed in the large intestine for use elsewhere in the body and what is left is then stored in the rectum until it leaves the body through the anus when you go to the toilet. Humans have four types of teeth - incisors for cutting, canines for tearing, molars and premolars for grinding (chewing). Living things can be classified as producers, predators and prey according to their place in the food chain. 	<p>States of Matter</p> <ul style="list-style-type: none"> A solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Granular and powdery solids like sand can be confused with liquids because they can be poured, but when poured they form a heap and they do not keep a level surface when tipped. Each individual grain demonstrates the properties of a solid. Melting is a state change from solid to liquid. Freezing is a state change from liquid to solid. The freezing point of water is 0°C. Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas can be seen in the liquid. Water boils when it is heated to 100°C. Evaporation is the same state change as boiling (liquid to gas) but it happens slowly at lower temperatures and only at the surface of the liquid. Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy. Condensation is the change back from a gas to a liquid caused by cooling. Water at the surface of seas, rivers etc. evaporates into water vapour (a gas). This rises, cools and condenses back into a liquid forming clouds. When too much water has condensed the water droplets in the cloud get too heavy and fall back down as rain, snow, sleet etc. and drain back into rivers etc. This is known as precipitation. This is the water cycle. 	<p>Electricity</p> <ul style="list-style-type: none"> Many household devices and appliances run on electricity. Some devices plug in to the mains and others run on batteries. An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in an electrical circuit, a loose connection or a short circuit the component will not work. A switch can be added to an electrical circuit to turn the component on and off. Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity <p>Sound</p> <ul style="list-style-type: none"> A sound source produces vibrations which travel through a medium from the source to our ears Different mediums such as solids, liquids and gases can carry sound but sound cannot travel through a vacuum (an area empty of matter). The vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound. The loudness (volume) of the sound depends on the strength (size) of vibrations which decreases as they travel through the medium. Therefore, sounds decrease in volume as you move away from the source. A sound insulator is a material which blocks sound effectively. Pitch is the highness or lowness of a sound and is affected by features of objects producing the sounds. For example, smaller objects usually produce higher pitched sounds.

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Eaves Primary Knowledge Overview for Science

	Autumn	Spring	Summer
Year 5	<p>Earth and Space They know:</p> <ul style="list-style-type: none"> The Sun is a star. It is at the centre of our solar system. There are 8 planets (can choose to name them, but not essential). These travel around the Sun in fixed orbits. Earth takes 365¼ days to complete its orbit around the Sun. The Earth rotates (spins) on its axis every 24 hours. As Earth rotates half faces the Sun (here it is day) and half is facing away from the Sun (night). As the Earth rotates the Sun appears to move across the sky. The Moon orbits the Earth. It takes about 28 days to complete its orbit. The Sun, Earth and Moon are approximately spherical. <p>Forces They know:</p> <ul style="list-style-type: none"> A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall. Air resistance, water resistance and friction are contact forces that act between moving surfaces. The object may be moving through the air or water or the air and water may be moving over a stationary object. A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover. Pulleys, levers and gears are all mechanisms, also known as simple machines. 	<p>Properties and Changes of Materials They know:</p> <ul style="list-style-type: none"> Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. Mixtures can be separated by filtering, sieving and evaporation. Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning wood, rusting and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible. 	<p>Living things and their habitats They know:</p> <ul style="list-style-type: none"> As part of their life cycle, plants and animals reproduce. Most animals reproduce sexually. This involves two parents where the sperm from the male fertilises the female egg. Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be born live, such as babies or kittens, and then grow into adults. In other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults. Some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis. Plants reproduce both sexually and asexually. Bulbs, tubers, runners and plantlets are examples of asexual plant reproduction which involves only one parent. Gardeners may force plants to reproduce a sexually by taking cuttings. Sexual reproduction occurs through pollination, usually involving wind or insects. <p>Animals, including humans They know:</p> <ul style="list-style-type: none"> When babies are young, they grow rapidly. They are very dependent on their parents. As babies develop, they learn many skills. At puberty, a child's body changes and develops primary and secondary sexual characteristics. This enables the adult to reproduce. <p>This needs to be taught alongside PSHE</p>

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Eaves Primary Knowledge Overview for Science

	Autumn	Spring	Summer
Year 6	<p>Living Things and their Habitats They know:</p> <ul style="list-style-type: none"> Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other living things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups – those that have backbones (vertebrates) and those that do not (invertebrates). Vertebrates can be divided into five small groups – fish, amphibians, reptiles, birds and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups including insects, spiders, snails and worms. Plants can be divided broadly into two main groups – flowering plants and non-flowering plants. <p>Animals, including humans They know</p> <ul style="list-style-type: none"> The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE 	<p>Evolution and Inheritance They know:</p> <ul style="list-style-type: none"> All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. Plants and animals have characteristics that make them suited (adapted) to their environment. If the environment changes rapidly some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young. Over time these inherited characteristics become more dominant within the population. Over a very long period of time these characteristics may be so different to how they were originally that a new species is created. This is evolution. Fossils give us evidence of what lived on the Earth millions of years ago and provide evidence to support the theory of evolution. More recently scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics. 	<p>Light They know:</p> <ul style="list-style-type: none"> Light appears to travel in straight lines and we see objects when light from them goes into our eyes. The light may come directly from light sources but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object. <p>Electricity They know:</p> <ul style="list-style-type: none"> Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. A higher voltage battery to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. To use recognised circuit symbols to draw simple circuit diagrams.