

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Pre-school Understanding the World Development matters 3–4-year-old statements Explore how things work. • Plant seeds and care for growing plants. • 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 natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.  What Science Looks Like in Pre-School In pre-school, science is all about exploring, noticing, and wondering. It's not about facts and worksheets—it's about giving children the chance to play, discover, and ask questions about the world around them.  Seasons and Weather We help children notice the changes in the world around them—like when the leaves fall, the sun feels warmer, or it starts to get dark earlier. We talk about the weather every day, and children might draw what they see or help make a simple weather chart. We read lovely books about the changing seasons and talk about what's happening outside.  Outdoor Adventures We go on regular walks or garden adventures to explore nature. Children look for signs of animals, spot bugs, and notice how things change with the seasons—like animals going to sleep for winter or coming out at night. We encourage children to talk about what they see, like “That tree has no leaves now!” or “I saw a worm wriggling!”  Caring for Nature We help children learn to look after the world, like watering plants or being gentle with bugs. We give them lots of chances to touch, smell, and listen to nature—feeling bark, smelling flowers, or hearing birds. We talk about how we can take care of our planet, even in small ways. All of these little moments are full of awe and wonder, and we celebrate them!						
Understanding the world	Ourselfs <i>What is amazing about me?</i>	In my community <i>Why is my community special?</i>	Animal Kingdom <i>Could you have a tiger as a pet?</i>	Round and round the garden <i>What can we find outside?</i>	Out of this world! <i>Do all materials feel the same?</i> Key knowledge/skills pre-school will...	Once upon a time <i>What can you see? (Senses)</i>

	Key knowledge/skills Pre-School will... - Learn to understand and name who is in our family. - Talk about their likes and dislikes. Talk about differences and Similarities Key vocabulary: Myself, me, family, head, arms, body, legs, house, mum, dad, brother, sister	Key knowledge/skills Pre-School will... -Observe seasonal changes in winter Key vocabulary: Cold, dark, icy, snow, freezing, slippery, frozen,	Key knowledge/skills Pre-School will... - Explore a range of materials to collage a farm animal. - Explore a range of natural materials in their outdoor environment to create flower pictures. Key vocabulary: Farm, animals, horse, cow, pig, piglet, sheep, lamb, chick, chicken, duck, ducklings, farmer, hay, mud	Key knowledge/skills pre-school will... - Plant seeds and care for growing plants. - Understand the key features of a life cycle of a plant and animal. - Observe and explore a range of plants and flowers in the natural environment. -observe seasonal changes in spring Key vocabulary: Growing, planting, cress, plant, seed, water, soil, sun, grow, stem, leaf, petal, spring, blossom, daffodils, bud, tree, bumble bee, ladybird	- Explore which materials are magnetic. - Explore how to push and pull difference objects with force. - Explore and feel the texture of a range of different materials. Key vocabulary: Push, pull, fast, slow, force, fall, drop, heavy, light, magnet,	Key knowledge/skills Pre-School will... - Learn about their five senses and explore each one: touch a range of materials, smell a range of scents, hear different musical instruments, explore what they can see in a range of pictures, taste a range of different biscuits Key vocabulary: senses, hear, taste, see, touch, smell, feel, sweet, sour, rough, bumpy, smooth, loud, quiet, bright
Future learning	Reception- Children learn about themselves and their wider family.	Reception- children will observe and note the seasonal changes in their school environment.	Reception- Children will explore a range of materials and describe them.	Reception- Children will learn about how to take care of plants.	Reception- Children begin to explore the properties of different materials.	Reception- Children learn about the different parts of their body and label them.

	Reception- Children learn about the human body in Jigsaw during the summer term.	Year 1- Children will name and explore the four seasons. Year 2—children revise the seasons in a short, 3-lesson unit in year 2 KS2—There is no discrete topic on seasons in KS2; however, children will encounter the seasons through other topics such as living things, habitats, and adaptation.	Year 1- Children will explore the use of different materials for different things. Year 2 – Children will look at the suitability of a variety of everyday materials. Year 3 – Children will study rocks in more detail looking at the properties of different types of rock. Year 4 – Children will study ‘States of Matter’ where they will look at a variety of solids, liquids and gases. Year 5 – Children will study ‘Properties and Changes of Materials’ where they will explore deeper into states of matter and reversible and irreversible changes	Year 1-Children will identify different plants and trees. Year 2 – Children will study how plants grow from seeds and bulbs in more detail. They will also look at what plants need to grow and stay healthy. Year 3 – Children will learn about the functions of the different parts of the plant, find out how flowers play a part in the life cycle of the plant and investigate how water is transported in plants. Year 5 – Children will look at the life cycle of a plant including the life process of reproduction.	Year 1- Children will explore the use of different materials for different things. Year 2 – Children will look at the suitability of a variety of everyday materials. Year 3 – Children will study rocks in more detail looking at the properties of different types of rock. Year 4 – Children will study ‘States of Matter’ where they will look at a variety of solids, liquids and gases. Year 5 – Children will study ‘Properties and Changes of Materials’ where they will explore deeper into states of matter and reversible and irreversible changes	Year 1 – Children will have looked at different parts of the human body and the related sense. Year 3 – Children will study the importance of nutrition in humans and other animals. Year 4 – Children will study the seven life processes again and explore digestion in humans. Year 5 – Children will study life cycles and reproduction. Year 6 – Children will study healthy and unhealthy habits
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Reception

Understanding the World Reception development matters statements

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside
- Understand the effect of changing seasons on the natural world around them

Understanding the World Early Learning Goal

Explore the natural world around them, making observations and drawing pictures of animals and plants (Natural world)
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (Natural world)
I know members of my immediate family, the names of people who are familiar to me, and people in my community (People and Communities)

What Science Looks Like in EYFS (Reception)

In Reception, science is embedded within the **Understanding the World** area of learning, with a strong emphasis on **exploring the natural environment** and developing a sense of curiosity and care for the world around us.

Focus: Seasonal Change and the Natural World

The main focus is on **exploring the outdoor environment** and understanding the **natural features and changes each season brings**.
Children are encouraged to **observe and describe the weather**, noting seasonal features such as temperature, daylight, and plant changes.
Opportunities are provided to **record weather patterns**, using simple charts or drawings.
Carefully selected **seasonal texts** are shared to deepen understanding and vocabulary.

Forest Friday

Weekly **Forest Friday sessions** allow children to:

- Observe the natural world first-hand.
- Notice how **animals behave differently** across the seasons (e.g., hibernation, nocturnal habits).
- Develop **focused observation skills** and describe what they see, hear, and feel.
- Take **supported risks** in a safe outdoor environment, building confidence and resilience.

Everyday Scientific Thinking

- Children are encouraged to:
 - Incorporate their understanding of **seasons and weather into their play**.
- Engage in **awe and wonder moments**, such as exploring floating and sinking in the water area or discovering how ramps affect movement.
- Use **scientific vocabulary** to describe plants, animals, and natural phenomena.
- Recognise and name **familiar plants and animals** in their environment.

Caring for the Natural World

- Children are given frequent opportunities for **hands-on outdoor exploration**.
- They are encouraged to **touch, smell, and listen** to the world around them, fostering a deep connection with nature.
- Discussions are facilitated around **how we care for the environment**, promoting respect and responsibility.

Understanding the world	Humans <i>Who is in my family?</i> Key knowledge/skills -know members of my immediate family, the names of people who are familiar to me, and people in my community See themselves as a valuable individual. Manage their own needs. Can describe themselves, family, friends and community. Can create pictures of themselves, family, friends and community and identify their distinguishing features. Can talk about what they see when using a mirror. Key vocabulary: hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight,	Seasonal changes <i>Why are there leaves on the floor?</i> <i>Where does a mouse live?</i> Key knowledge/skills Observe the season of autumn by going on a walk of the local area. Observe changes in leaves during Autumn using magnifying glasses Learn about different environments/habitats of animals and make comparisons to the local area Key vocabulary: Nocturnal, environment, night, time, owls, hedgehogs, foxes, bats, cold, cloudy, foggy, hot, rain, rainbow, sunny, temperature, warm, Autumn, leaves, pine cones, orange, yellow, red, hibernate	Materials/Seasonal changes <i>Which material would be best for building a new bed for baby bear?</i> <i>How do we know it's Winter?</i> Key knowledge/skills Reception will... - Explore a range of different materials and observe the different properties of materials. - Observe changes in materials from solids to liquids Explore hard and soft material Key vocabulary: Hard, soft, materials, rough, crinkly, plastic, recycling, texture Common misconceptions-	Plants <i>How can we take care of our garden?</i> Key knowledge/skills Reception will... -Explore their local environment to observe what is growing -learn how to take care of plants Plant their own seeds and observe them growing -learn about the lifecycle of a seed -observe caterpillars changing into butterflies Key vocabulary: Plant, leaf, shoot, stem, roots, bloom, grow, caterpillar, chrysalis, Common misconceptions trees are not plants • trees are not living as they do not seem to change or grow • weeds are bad plants • plants only have	Animals <i>Why is our world special?</i> Key knowledge/skills Reception will... -Learn about different animals on the farm and their roles -Begin to learn where different food comes from -learn about farm animals and their young -visit a farm and get to hold animals Key vocabulary: Farmer, tractor, crops, calf, lamb, foal, barn, field, pen, feed, petting ,hay , Common misconceptions all babies and young animals are born in spring	Humans (linked to Jigsaw unit) <i>What can our amazing bodies do?</i> Key knowledge/skills Reception will... Learn about the parts of the human body -begin to understand the important role of each body part -learn how to stay healthy and take care of our bodies Key vocabulary: Eye, Foot, Eyebrow, Forehead, Ear, Mouth, Arm, Leg, Chest, Knee, Nose, Tongue, Finger, Toe, Stomach, Hand, Baby, Grown-up, Adult, Change,
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Long Term Plan Science

	curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman Common misconceptions- sons look like their fathers and daughters look like their mothers if you are taller you are older	Common misconceptions- it always snows in winter it is always hot in the summer when it is hotter, it is because the Sun is closer animals sleep during winter	material only means fabric all plastic/wood etc. is the same all metals are magnetic small things float and big things sink	flowers in the spring and summer • it rains to help the plants grow •		
Previous learning	In pre-school, children will have looked at their families in the Autumn Term. We build on this by looking at the family members outside our homes.	In pre-school, the children will have looked at autumn and how the trees change colour and the leaves fall down.	In pre-school the children will have explored different materials in the summer term as part of their 'Out of this world topic'.	In pre-school the children will have planted their own plants/seeds in their garden area. They will have added natural resources to their bug hotel and experience spring walks to	This unit builds on the children's 'Animal Kingdom' theme, where the children will have looked at a variety of animals and where they live, what they eat and how to care for them.	This unit builds on the 'ourselves' unit in pre-school where they talk about the different parts of their body.

Unit	Everyday Materials <i>Why do we use different materials for different things?</i>	Animal including humans <i>How can we group animals?</i>	Plants <i>Key Question: How can we identify different plants and trees?</i>
Key Vocabulary	properties: fragile, heavy, light, hard, soft, smooth, rough, squidgy, waterproof, strong, weak, bumpy, stretchy, see-through, breakable materials: plastic, wood, rubber, fabric, metal, brick, rock, glass, paper, material, cotton, wool, fleece	senses: hear, smell, touch, taste, see animals: beak, wing, paw, feathers, claw, talons main body parts: head, neck, arms, elbows, legs, knees, face, ears, hair, mouth, teeth, abdomen, chest, shoulders, toes classification: herbivore, carnivore, omnivore, mammal, living, bird, fish, reptile, amphibian movement: fly, swim, crawl, run	plant, root, grow, branch, deciduous, evergreen, tree, flower, leaf, seed, stem, soil, trunk, to plant, to water types of plants: tree, daisy, birch, dandelion, fir tree, buttercup, wild plant, pine tree, fruit, flower, nettle, oak tree, holly, vegetable, weed, sycamore tree
Working Scientifically/ enquiry skill	 Asking questions  Observing and measuring  Recording data  Interpreting and communicating results	 Asking questions  Observing and measuring  Recording data  Identifying and Classifying  Performing Simple Tests	 Asking questions  Observing and measuring  Identifying and Classifying  Interpreting and communicating results

Previous learning	Children have explored different animals during EYFS. They may have learnt the names of different animals and their features. They may have also looked at the similarities and differences between themselves and their classmates.	EYFS – Children have explored different materials in EYFS. They may have discussed the textures of different materials and used different materials during model making activities.	Children have have explored different plants during EYFS. They may have learnt the names of different plants and their features. They may also have grown their own plants from seeds and watched the different stages of plant growth.
Future learning	<u>Year 2</u> – Children will study animals further and learn about offspring and the basic needs that animals need to survive. <u>Year 3</u> – Children will learn about the importance of nutrition for animals. They will then focus on muscles and the skeleton. <u>Year 4</u> - Children will recap grouping animals in different ways based on their features, nutrition and skeleton. They will also create classification keys based on their study.	<u>Year 2</u> – Children will look at the suitability of a variety of everyday materials. <u>Year 3</u> – Children will study rocks in more detail looking at the properties of different types of rock. <u>Year 4</u> – Children will study ‘States of Matter’ where they will look at a variety of solids, liquids and gases. <u>Year 5</u> – Children will study ‘Properties and Changes of Materials’ where they will explore deeper into states of matter and reversible and irreversible changes	<u>Year 2</u> – Children will study how plants grow from seeds and bulbs in more detail. They will also look at what plants need to grow and stay healthy. <u>Year 3</u> – Children will learn about the functions of the different parts of the plant, find out how flowers play a part in the life cycle of the plant and investigate how water is transported in plants. <u>Year 5</u> – Children will look at the life cycle of a plant including the life process of reproduction.
	Seasonal changes <i>Key Question: What are the seasons?</i> Key vocabulary - autumn, spring, winter, summer, seasons, grow, new life, year, change, tree, plant, shadow, sun, snow, rain, hail, wind cold, hot, warm Previous learning - EYFS — During EYFS, Children may have explored different seasons and learnt about the different characteristics and weather associated with each season. Future learning - Year 2 —children revise the seasons in a short, 3-lesson unit in year 2 KS2—There is no discrete topic on seasons in KS2; however, children will encounter the seasons through other topics such as living things, habitats, and adaptation.		

Year 2				
Unit	<u>Living things and their habitats</u> <i>How do we know something is alive?</i>	<u>Animal including humans</u> <i>Why do we need to keep healthy?</i>	<u>Everyday Materials</u> <i>How are materials chosen in design?</i>	<u>Plants</u> <i>How do seeds and bulbs grow into healthy plants?</i>
Key Vocabulary	alive, conditions, adapted, animals, plants, living, dead, survive, basic needs, life process, food chain classification: carnivore, herbivore, omnivore habitats: woodland forest, jungle, polar region, desert, mountain, habitat, microhabitat	animals, plants senses health: illness, medicine, exercise, hygiene, healthy, diet, fit, nutrition, unhealthy diet life processes: survive, living, movement, respiration, growth, basic needs, reproduction, excretion, life process life cycles: offspring, life cycle, baby, child, teenager, adult, elderly	properties: fragile, heavy, light, hard, soft, smooth, rough, squidgy, waterproof, strong, weak, bumpy, stretchy, see-through, breakable materials: plastic, wood, rubber, fabric, metal, brick, rock, glass, paper, material, cotton, wool, fleece	compost, sunlight, temperature, plant, tree, deciduous, evergreen parts of a plant: flower, roots, stem leaf, bulb, seed, seedling
Working Scientifically/ enquiry skill				

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Previous Learning	Year 1 – Children studied different animals and grouped them based on their features and diet.	Year 1 – Children will have looked at different parts of the human body and the related sense.	Year 1 – Children will have looked at different objects and the material from which they are made. They will have identified a variety of everyday materials and described their properties such as wood, plastic, glass, metal, water and rock. Children will also have compared and grouped together a variety of objects made from different materials.	Year 1 – Children learnt about different plants and trees and described the basic structure.
Future learning	Year 3 – Children will study the nutrition of animals. Year 4 – Children will study environmental threats to habitats and construct and interpret a variety of food chains.	Year 3 – Children will study the importance of nutrition in humans and other animals. Year 4 – Children will study the seven life processes again and explore digestion in humans. Year 5 – Children will study life cycles and reproduction. Year 6 – Children will study healthy and unhealthy habits	Year 3 – Children will study rocks in more detail looking at the properties of different types of rock. Year 4 – Children will study ‘States of Matter’ where they will look at a variety of solids, liquids and gases. Year 5 – Children will study ‘Properties and Changes of materials’ where they will explore deeper into states of matter and reversible and irreversible changes.	Year 3 – Children will learn about the functions of the different parts of the plant, find out how flowers play a part in the life cycle of the plant and investigate how water is transported in plants. Year 5 - Children will look at the life cycle of a plant including the life process of reproduction. KS3 - Children will study plants in much closer detail, observing the cell structure and how plants create their own food through photosynthesis.
	seasonal changes <i>Key Question: What changes occur throughout the seasons?</i> Key vocabulary - Spring, Summer, Autumn, Winter, rain, Sun, change, daylight hours, thermometer, rainfall			

	Previous learning - EYFS – During EYFS, Children may have explored different seasons and learnt about the different characteristics and weather associated with each season. Year 1 – Children will have learnt about the changing weather conditions during each season, how the day length varies from season to season, observed changes in nature, and discussed events, activities, and festivals associated with each season. Future learning - KS2—There is no discrete topic on seasons in KS2; however, children will encounter the seasons through other topics such as living things, habitats, and adaptation.				
Year 3					
unit	<u>Animals including humans</u> <i>How do the systems inside our body work to make a healthy human?</i>	<u>Rocks and soils</u> <i>How can we classify rocks?</i>	<u>Forces and magnets</u> <i>How do magnets work?</i>	<u>light</u> <i>What is light?</i>	<u>Plants</u> <i>How does each part of the plant fulfil its function</i>
Key vocabulary	<u>skeletal system:</u> skeleton, muscle, bone, skull, ribs, spinal column, backbone, joints, sockets, femur, collarbone, humerus, ulna, radius, hip, pelvis, fibula, tibia, kneecap, shoulder blade, movement, support, protection, contract, relax <u>classification:</u> vertebrates, invertebrates, insects, minibeasts, mammals, reptiles, fish, birds, amphibians <u>nutrition:</u> food, growth, healthy, unhealthy, nutrition, exercise, balanced diet, sugar, fruit, vegetables, protein, carbohydrates, fat, dairy, vitamins, minerals	rocks, soils, stone, pebbles <u>types of rock:</u> slate, marble, chalk, granite, sandstone, clay <u>properties:</u> hard, soft, permeable, appearance, physical properties, acid <u>rock formation:</u> sedimentary, metamorphic, igneous, magma, bedrock, fossil	contact, non-contact, iron, force, pull, push, magnet, poles, attract, repel, magnetic, non-magnetic, metal, stronger, weaker, movement, bigger, smaller force	dark, absence of light, luminous, travel, reflection, reflect, shadow, see, eyes, mirror, direction, straight lines <u>light source:</u> torch, sunlight, light source <u>properties:</u> opaque, translucent, transparent, reflective, block	vegetable, plant <u>reproduction:</u> pollen, pollination, pollinators, formation, dispersal, reproduce <u>parts of a plant:</u> root, branch, seed, flower, leaf, seedling, stem, bulb, fruit, flower, blossom, trunk <u>needs of a plant:</u> compost, nutrients, grow, air, light, soil
Working Scientifically/ enquiry skill					

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Previous learning	Year 1 – Children looked at how to group animals including based on their diet. Year 2 – Children studied animals and their offspring and the basic needs that animals need to survive	KS1 – Rocks and soils are only covered briefly in other topics in KS1. Children will have learnt about soil during plant topics. Children will have also learnt some of the properties of rocks during topics about different materials.	Year 2 - Children have explored different forces before, during the ‘Uses of everyday materials’ topic in Year 2 whilst investigating how some materials can be changed by bending, squashing, twisting and stretching. They link those movements to simple pushes and pull.	KS1 - Children do not study light as a separate topic. However, as part of seasonal changes topic, children will have observed and talked about changes in the weather and the seasons and will have talked about the dangers of looking at the Sun directly. Year 2 - Children observed the effect of light on plant growth.	Year 1 – Children learnt about different plants and trees and described the basic structure. Year 2 – Children studied how plants grow from seeds and bulbs in more detail. They will also look at what plants need to grow and stay healthy.
Future Learning	Year 4 – Children will recap grouping animals in different ways based on their features, nutrition and skeleton. They will also create classification keys based on their study. Year 5 – Children will explore how humans change over time. Year 6 – Children will learn about the impact exercise, diet, drugs and lifestyle have on the human body as well as learning about how water and nutrients are transported around the body.	UKS2 – Rocks and soils are not studied again in KS2.	Year 5 - Children will study forces again in Year 5. Children will build upon their knowledge of simple pushes and pulls from Y3 by exploring more difficult concepts such as gravity, friction and air resistance. They will also create different size forces using mechanisms such as levers and pulleys. Magnets are briefly looked at again in Y5 ‘Properties and changes of materials’,	Year 6 - Children will consolidate previous learning by exploring the way that light behaves, including light sources, reflection and shadows. Pupils will make predictions and investigate the relationship between light sources, objects and shadows and understand how the eye works. Children could extend their experience of light by looking at rainbows, prisms, colours in soap	Year 5 – Children will look at the life cycle of a plant including the life process of reproduction.

				where they compare and group materials based on their response to magnets.	bubbles, colour filters and bending light in water.	
Year 4						
Unit	Animals including humans <i>What happens to the food that we eat?</i>	States of matter <i>Can materials change state?</i>	Electricity <i>What is electricity?</i>	Living thing and their habitats <i>Which living things can be in the local area?</i>	Sound <i>What is sound?</i>	
Key vocabulary	teeth: canines, incisors, molars, premolars diet/digestion: carnivore, herbivore, omnivore, digestion, large intestines, oesophagus, peristalsis, predator, prey, producer, saliva, small intestines, stomach	temperature, group, property, compare, particle, thermometer, research, change, degrees Celsius, observe states of matter: solid, liquid, gas, state of matter, carbon dioxide, oxygen, helium, natural gas, air processes: solidify, heat, measure, condensation, boiling, cool, condense, evaporation, evaporate, melt/melting, freeze/freezing water cycle: water cycle, run-off, precipitation, collection,	appliance, battery, conductor, circuit, components, current, electrical, insulator, mains power, portable, pylon, switch	adaptation, pollution, habitats, environment, environmental change, classification: exoskeleton, carnivore, herbivore, omnivore, mammal, reptile, bird, amphibian, key, classify, vertebrate, invertebrate, pigeon, eagle, gull, minibeast, insect life processes: movement, respiration, growth, reproduction, excretion, nutrition, sensitivity	Vibrate/vibrations - forward and backward movement of an object (usually rapidly). volume - how loud or quiet a sound is. pitch - how high or low a sound is. pinna - the outer portion of the ear (ear flap). cochlea - the sound reception part of the inner ear. eardrum - the membrane which collects sound from the pinna and	

		condensation, evaporation, droplet			passes it to the inner ear.	
Working Scientifically/ enquiry skill						
Previous learning	KS1 – In years 1 and 2, children will have learnt to identify and name common animals that are carnivores, omnivores and herbivores. They will be able to compare animals such as birds, fish, reptiles, amphibians and mammals. They will have learnt to identify and name basic parts of the body and say which part is associated with each sense. They will have learnt that most living things live in habitats and be able to construct simple food chains. Year 3 – Children will have learnt about healthy diets and nutrition.	KS1 – Children will have learnt to compare and group materials on the basis of their simple properties. They will have explored how to change the shape of solids by bending, twisting, squashing and stretching.	No previous learning	Year 1 – During the topic of plants, children will learn to describe the basic structure of various common flowering plants. They will have to compare the differences between living and non-living things. Year 2 – Children will have explored the differences between living and non-living things, identified that most living things live in habitats that they are suited to, and understood how living things in that habitat depend on each other. They may have learnt to name some living things in their local area and construct basic food chains. Year 3 – Children will have learnt to identify	KS1 – sound is not taught as a separate topic in KS1 science however children may have some knowledge of pitch and volume through their music lessons. KS2 – children continue to explore sound through music (in their music lessons) and in the topic on light, children may compare how fast sound travels compared to light.	

				and describe the function of various parts of a plant. They will have explored the part flowers play in the life cycle including pollination, seed fertilisation and seed dispersal.		
Future Learning		UKS2 – Children will use their knowledge of solids, liquids and gases by deciding how materials might be separated, including filtering, sieving and evaporation. They will extend their knowledge and learn about dissolving and mixing and consider if these changes of state are reversible or irreversible.	Y6 – In the Y6 topic on electricity, children will learn to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. They will 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. They will use recognised symbols when representing a simple circuit in a diagram.	UKS2 – Children will study the life cycles of plants and animals and examine how reproduction plays a vital part in them. They will also extend their understanding of classification to include single-celled organisms.	KS3 – children will extend their understanding of sound by exploring frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound. They will build upon knowledge of how sound travels through a medium and explore the auditory range of humans and animals.	
<u>Year 5</u>						
unit	Earth and Space	Materials	Living things and Habitats	Forces	Animals and Humans	

	<i>What is the solar system?</i>	<i>How do materials change?</i>	<i>How do living things reproduce, and why is this important in a life cycle?</i>	<i>Are there different types of forces?</i>	<i>How do we change as we grow older?</i>	
Key vocabulary	orbit – the rotation that one body in space takes around another when under gravitational influence axis – an imaginary line going through a central body that most bodies in space rotate around day – length of time the Earth takes to rotate on its axis once month – the length of time the Moon takes to complete one orbit around the Earth (not exactly equal to a calendar month) planet – a non-luminous body that orbits a star solar system – the name given to the Sun and all the bodies orbiting around it year – the period the Earth takes to complete one orbit of the Sun	soluble - a substance that will dissolve in water insoluble - a substance that will not dissolve in water saturation - the point at which no more solute can be dissolved solution - a soluble solid is dissolved in liquid to form a solution filtration - the collection of larger particles in a mixture boiling - the process by which molecules of a liquid change to vapour (much faster change than evaporation) condensing - the change of vapour into a liquid evaporation - change from a liquid to a vapour freezing - the change of a liquid to a solid	fertilisation – the point at which the sperm from the pollen meets the egg in the ovary pollination – the process by which the pollen reaches the stigma pollen – granule that delivers the male genetic material to the female seed stamen – the male part of the flower, comprising of the anther and filament pistil – the female part of the flower consisting of the stigma, style and ovary seed dispersal – the method used by a plant to spread out its seeds (usually by wind, water or animals)	force – a push or pull that acts upon an object that can cause it to move, change shape or change direction. friction – the force that acts upon one surface when it moves against another. gravity – a pull force that acts at a distance. pull – to move something towards. push – to move something away. repel – to push away. resistance – an opposing or slowing force. drag – the frictional force experienced by an object moving through a fluid or air. streamlined – a shape which minimises the profile presented by an	birth – when your life starts as a physically separate being conception/fertilisation – when the egg and the sperm meet to begin the development of a foetus death – when the life cycle ends develop – to grow to become more mature or advanced egg – the female sex cell foetus – a baby that is still developing in the womb puberty – a time in the human life cycle when the body goes through changes to become an adult sperm – the male sex cell womb – an organ in which the foetus grows and develops	

	gravity – the force of attraction between two masses	melting point - the point at which a solid substance liquefies chemical change - one where the molecular structures of the combined substances are broken down and recombined to make a new substance physical change - where the molecular structures of the combined substance stay separate, allowing separation to occur reversible change - a physical change that we can undo irreversible change - a physical change that we cannot undo durable - not easily broken or worn out; tough and lasts a long time flexible - easily bent without breaking permeable - a material that lets a gas or liquid through it absorbant - soaks up liquids easily	reproduction – the combining of genetic material from two individuals to produce new life	object in order to minimise the resistance it encounters when moving through a liquid or gas. upthrust or buoyancy – the upward force exerted on a body by a fluid that surrounds it, equal and opposite to the weight of the water displaced. newton (N) – the unit used to measure force. gear – two wheels with serrated or notched rims that mesh together to transfer movement. lever – usually a rigid bar with a pivot point close to one end, allowing movement at one end of the lever to be converted into a smaller movement at the other, which effectively magnifies the force applied. pulley – a wheel with a grooved rim that allows the transfer of movement via a belt or band.		
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Working Scientifically/ enquiry skill						
Previous learning	KS1 – As part of the seasonal change topic, children may have observed changes across the seasons and observed/described weather changes. They may have learnt that the Sun is a light source. Earth and Space is not taught at KS1 as a discrete topic. Year 3 – Children may have learnt about the Sun as a light source (in the Light topic); they may have observed that shadows are formed when an opaque object blocks out light and that the Sun's position in the sky appears to change through the day.	Year 1 – Children may have been taught to distinguish between an object and the material from which it is made. They may have had experience identifying, grouping and naming everyday materials, including wood, plastic, metal, glass and rock and learnt to describe the simple physical properties of these materials. Year 2 – Children may have consolidated knowledge gained in year 1 and learnt to identify and compare the use of various materials for particular uses. They may have investigated how the shape of solid materials can be changed by squashing, bending, twisting and stretching. Year 4 – Children may have learnt to compare and group materials	KS1 – During the plant topic, children will have learnt to describe the basic structure of various common flowering plants. They will have to compare the differences between living and non-living things. LKS2 – Children will have learnt to identify and describe the function of various parts of a plant. They will explore the role flowers play in the life cycle, including pollination, seed fertilisation, and seed dispersal.	Year 2 – During the topic 'materials', children may have explored different materials and discovered which ones can change shape when they are squashed, bent, twisted or stretched. They may be able to make the link between those movements and simple pushes and pulls. Magnets are not studied at all in Key Stage 1. However, children may have come across magnets in everyday life and seen that they 'stick together' (attract) in objects such as bags, toys or kitchen appliances. Year 3 – Children may have explored simple pushes and pulls as an introduction to forces. They may have explored how the texture of an object, or	KS1 – Children will have studied humans and other animals and their young. They may have studied life cycles such as butterfly or frog to show how animals change as they grow. LKS2 – Children will have studied life cycles of plants which could be linked to the life cycle of humans.	

		according to whether they are solids, liquids or gases. They may have observed that some materials change state when heated or cooled and measured or researched the temperature at which this happens in degrees Celsius. They may have identified the part played by evaporation and condensation in the water cycle and		the surface it is on, can affect the way the object moves. They may have further investigated pushes and pulls by experimenting with different magnets and exploring how they can pull (attract) and push (repel) too, but at a distance with no contact.		
Future learning	KS3 – Children extend their knowledge of gravity as a force (learning formulae) and that gravity is different on other planets and stars. They consolidate knowledge that the Sun is a star, and that there are other stars in our galaxy and other galaxies. They will extend their knowledge of seasons and the Earth's tilt, day length at different times of year, in	KS3 – Children will learn the particulate nature of matter, atoms, elements and compounds. They will learn what pure and impure substances are, including simple techniques for separating materials (filtration, evaporation, distillation and chromatology. They will learn about chemical reactions (catalyses, combustion, etc.) and represent them using formulae and equations.	KS3 – Children extend their knowledge of reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. They	KS3 – Children will extend their understanding of forces by describing motion ($\text{speed} = \frac{\text{distance}}{\text{time}}$) and use time and distance graphs. They will use force arrows in diagrams, adding forces in one dimension. They will further explore balanced and unbalanced force; opposing forces and equilibrium e.g. weight held by stretched spring or supported on a compressed		

	different hemispheres and learn that a light year is a unit of astronomical distance.		extend their knowledge of plant reproduction, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, and quantitative investigation of some dispersal mechanisms.	surface. They will also extend their understanding of the difference between weight and mass and how gravity affects weight.		
<u>Year 6</u>						
Unit	Electricity <i>What is electricity?</i>	Living things and habitats <i>What is classification?</i>	Animals including humans <i>How do animals' living systems work together to maintain a healthy body?</i>	Light <i>What is light?</i>	Evolution <i>What is evolution?</i>	Sustainability Project
Key vocabulary	appliance – a device or piece of equipment that has been made to perform a specific task battery – a small item used to power small appliances circuit – a route	classify – to arrange a group of people or things in classes or categories according to shared qualities or characteristics vertebrate – an animal that has a backbone	heart – a muscle that pumps blood around the body lungs – spongy air filled organs that provide oxygen to the blood blood – a liquid that carries oxygen, water	dark – the absence of light reflect – a surface (or body) that throws back light without absorbing it shadow – an area where direct light from a light source cannot reach due to	Adaptation: When a plant or animal has changed in some way, usually over a long period of time, to be better suited to the environment in which they live.	

	through which electricity flows components – the parts of a circuit conductor – allows electricity to flow through it electrical – something that uses electricity to work insulator – doesn't allow electricity to flow through it mains power – electricity provided by power stations pylon – a tower used for keeping electrical wires above the ground renewable energy – energy from a source that is not depleted when used, such as wind or solar power non-renewable energy – energy from a source that is depleted when used, such as coal, gas and oil	invertebrate – an animal without a backbone exoskeleton – a rigid external covering for the body in some invertebrate animals vascular – plants that use roots and stems to take in water and nutrients non-vascular – plants that do not use roots and stems to take in water and nutrients taxonomy – the scientific process of grouping or classifying living organisms Also explain the terms; herbivore, carnivore, omnivore; the five main animal classification groups (mammals, birds, fish, reptiles and amphibians) and the five main microorganism groups (bacteria, viruses, protozoa, algae and fungi).	and nutrients around the body veins – carry deoxygenated blood to the heart arteries – carry oxygenated blood away from the heart heart rate – the number of times our heart beats per minute	obstruction by an object opaque – opaque materials do not let any light pass through them. They block the light. translucent – translucent materials let some light through, but scatter the light in all directions so that they cannot see clearly through them transparent – transparent materials let light pass through them in straight lines so that you can see clearly through them luminous – giving off light, bright or shining scattering – when light is returned from a surface absorption – when light strikes a surface and is retained within it. refraction – the “bending” of light when it passes from one transparent material to another	Environment: the conditions that surround an organism. Evolution: the process by which different kinds of living organisms are believed to have developed from earlier forms during the history of the Earth. Gene: A unit of heredity which is transferred from a parent to offspring and is held to determine some characteristics of the offspring. Natural selection: When the fittest, most adapted organisms survive and multiply whilst the least adapted die out. Inheritance: the reception of genetic qualities by transmission from parent to offspring. Organism: an individual animal, plant or single-celled life form. Species: a group of similar organisms that are able to reproduce.	
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Working Scientifically/ enquiry skill						
Previous learning	KS1 - Electricity is not taught as a discrete topic in KS1 however some children may have looked at which items use electricity in other curriculum areas (e.g. Toys topic in history) Year 4 - During the unit on electricity, children may have learnt to sort common electrical appliances into battery and mains powered; construct simple series circuits containing a variety of components. They may be able to identify whether or not a bulb will light in a simple series circuit and put forward ideas to fix incomplete circuits. The children may have conducted investigations to discover which	Year 1 – Children will have learnt that plants are living things and have had experience naming and sorting plants using a variety of criteria. They will have learnt the basic structure of plants and conducted experiments to determine what plants need to grow well. Year 2 - Children will have extended their knowledge of plants to include the life cycle of a plant and learnt about seeds. In the Living things and habitats topic; children will have learnt about habitats (including microhabitats) and that animals and plants live in habitats that suit them. They also may have learnt about simple food chains. Year 3 – In the “Plants” topic children extend their knowledge of the	LKS2 – Children will have learnt about keeping healthy in Y3 and Y4. In Y4, they will also have learnt about the digestive system which briefly introduces how nutrients are absorbed into the body.	KS1 – Children do not study light as a separate topic. However, as part of seasonal changes topic; children will have observed and talked about changes in the weather and the seasons and will have talked about the dangers of looking at the Sun directly. Year 2 – children might have observed the effect of light on plant growth. Year 3 – as part of the light topic, children will recognise that they need light in order to see things and that dark is the absence of light. They will have learnt to identify light sources; explore what happens when light reflects off mirrors or other reflective materials and know that the Sun	KS1 – Children may have learnt that most living things live in habitats to which they are suited and be able to describe how different habitats provide the basic needs of different kinds of animals and plants. They may have learnt to identify animals and plants from a variety of environments. They may have noticed that animals have offspring that grow into adults. KS2 – In the Rocks and Soils topic (Y3), children may have learnt how fossils are formed.	

	materials make good insulators and designed and tested their own switches.	parts of a plant and learn about flowers, pollination and seed dispersal. Year 4 - During the “Living Things and Habitats” topic, children will have further consolidated their understanding of habitats and learnt how to use a basic classification key		can be damaging to our eyes. They may have investigated patterns in the way the size of shadows changes.		
Future learning	KS3 – Children will study electricity in more depth, including; current and static electricity, parallel and series circuits. They will learn how current is measured and work out potential differences; calculate differences in resistance between conducting and insulating components (quantitative).	KS3 – Children will study cell structure and organisation and learn relationships within an ecosystem.	KS3 – Children will learn more about the importance of a healthy diet and how different foods are absorbed and used in the human body. They will learn more about gas exchange systems in the lungs of the human body. They will also look at the effects of recreational drugs including substance misuse.		KS3 – Children will learn about inheritance, chromosomes, DNA and genes. They will learn that heredity is the process by which genetic information is transmitted from one generation to the next and that there are differences between species. They will also learn that there is variation between species and between individuals of the same species. This means some organisms compete more successfully, which can drive natural selection. Changes in the environment may leave	

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					individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.	
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