



## Reception

Science at Foundation Stage is covered in the 'Understanding the World' area of the EYFS Curriculum. It is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. The key drivers are communication and language development (and outdoor learning)

**Key Skills:** Observe, curiosity, explore, ask questions, sort, notice similarities, differences, patterns & change (EYFS/DM/CoEL)

**ELG: The Natural world.**

### Science Curriculum Concepts

Composite knowledge by the end of EYFS

Animals, including humans	Seasonal change	Plants	Everyday materials	Light, forces (taught in KS2)
<p>Name a variety of common animals - classify by type - bird, fish, mammal, reptile Know about certain habitats - logpiles and which animals live there etc. Know stages/key features of &amp; describe life cycles of butterfly, chicks Identify main parts of snails, stick insects, fish &amp; common animals Identify main human body parts</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG Natural World)</p>	<p>Name and describe the 4 seasons &amp; associated weather</p> <p>Understand some important processes and changes in the natural world around them, including the seasons (ELG Natural World)</p>	<p>Identify and name the trees and plants in our forest and outdoor areas Observe, describe and draw plants/trees/flowers etc.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG Natural World)</p>	<p>Describe materials - wood, card, rock - properties Describe differences in materials and changes e.g. during cooking, ice melting etc.</p> <p>Understand some important processes and changes ... including ... changing states of matter (ELG Natural World)</p>	<p>Recognise earth, sun, moon (&amp; other planets) Talk about attraction and repulsion magnets and light e.g. torches</p>

### Continuous provision - environment opportunities independent/adult supported

Examples of adult role during continuous provision: Introduce vocabulary to enable children to talk about their observations and experience Pose open ended questions "how can we ..." "what would happen if ..." etc. to encourage exploration and prediction

<p>Investigation areas: fish tank Non-fiction books available as part of continuous provision. Children taught vocabulary and names. Observational drawings &amp; opportunities to record findings Observe and talk about alive and dead - where appropriate! Scientific equipment: magnifiers, identification cards (minibeasts, leaves, flowers) bug houses etc. 'Family books' - look at regularly with children - discuss changes since they were babies. Name body parts - e.g through singing and games Drawing opportunities throughout provision, including outside: clipboards</p>	<p>Outdoor areas - used throughout the year, in all weathers, including forest area. Observe and experience seasonal changes - e.g leaves/trees (all year groups) Explore weather - first hand experiences - windmills, kites, streamers etc. on windy days, puddles on wet days, ice and snow in winter etc. (all year groups) Gardening &amp; growing vegetables, flowers and other plants (all year groups)</p>	<p>Plants in the classroom and around the school. Outdoor gardens Polytunnel Plant beds Equipment: watering cans, seeds (specific emphasis in Spring/Summer)</p>	<p>Junk modelling - a variety of different materials available</p> <p>Mud kitchen (outdoor)</p> <p>Water and sand play</p> <p>Natural materials -, including shells Rocks/stones/crystals etc. available for exploration in investigation areas</p>	<p>Magnets - available in investigation areas for exploration</p> <p>Links to: Forces and magnets (Y3) Torches and dark areas available for exploration Links to: Light (Y3) Marble runs - build and use</p>
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### Vocabulary

<p>Human body parts - eyes, nose, mouth, arms, legs Animal names &amp; body parts - ears, tail, chrysalis, cocoon, caterpillar, butterfly</p>	<p>Spring, summer, autumn, winter, hot, cold Weather vocab - rain, wind, snow, ice</p>	<p><b>Specific</b> vocab: Names of flowers and trees found in outdoor area - daisy, dandelion, daffodil, tulip, oak, plane, lime, ash, oak <b>Concept</b> vocab Plant parts - root, stem, leaf Bulb, seed</p>	<p>Hard/soft, stretchy, rough/smooth, bendy Melt, change</p>	<p>Earth, moon, sun, mars, Attract, repel</p>
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<b>Year 1</b>					
<b>Objectives</b>					
<b>Autumn 1</b> <b>Animals, including humans</b>	<b>Autumn 2</b> <b>Animals, including humans</b>	<b>Spring 1</b> <b>Plants</b>	<b>Spring 2</b> <b>Plants</b>	<b>Summer 1</b> <b>Everyday Materials</b>	<b>Summer 2</b> <b>Seasonal Change</b>
<i>Identifying and classifying</i>  <i>How can we organise animals?</i>	<i>Identifying and classifying</i>  <i>Do all animals have the same senses as humans?</i>	<i>Comparative tests</i>  <i>Which plant has the biggest leaves?</i>	<i>Observing over time</i>  <i>How does my bean plant change over time?</i>	<i>Identifying and classifying</i>  <i>How do we choose materials?</i>	<i>Observing over time</i>  <i>How does our country change through the seasons?</i>
<b>Prior Learning</b>					
EYFS: Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.					
<b>Knowledge</b>					
<ul style="list-style-type: none"> <li>Identify &amp; name a variety of common animals that are birds, fish, amphibians, reptiles and mammals</li> <li>Identify &amp; name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Describe &amp; compare the structure of a variety of common animals (birds, fish, amphibians, reptiles and mammals including pets)</li> </ul>	<ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body</li> <li>Say which body part is associated with each sense</li> </ul>	<ul style="list-style-type: none"> <li>Identify &amp; name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen</li> <li>Identify &amp; describe the basic structure of a variety of common plants (roots, stem/trunk, leaves and flowers)</li> </ul>	<ul style="list-style-type: none"> <li>Identify &amp; name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen</li> <li>Identify &amp; describe the basic structure of a variety of common plants (roots, stem/trunk, leaves and flowers)</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between an object and the material it's made of</li> <li>Identify &amp; name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</li> <li>Compare &amp; group together a variety of everyday materials</li> <li>Describe the physical properties of a variety of everyday materials</li> </ul>	<ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies</li> </ul>
<b>Working Scientifically</b>					
<ul style="list-style-type: none"> <li>To ask simple questions and recognising that they can be answered in different ways</li> <li>To identify and classify</li> </ul>	<ul style="list-style-type: none"> <li>To perform simple tests</li> <li>To observe closely, using simple equipment</li> </ul>	<ul style="list-style-type: none"> <li>To gather and record data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>To use their observations and ideas to suggest answers to questions</li> </ul>	<ul style="list-style-type: none"> <li>To identify and classify</li> </ul>	<ul style="list-style-type: none"> <li>To use their observations and ideas to suggest answers to questions</li> </ul>
<b>Vocabulary</b>					
<i>carnivore, herbivore, omnivore, mammal, reptile, classify</i>	<i>human, senses, sight, investigate</i>	<i>roots, stem, trunk, deciduous, evergreen</i>	<i>properties, waterproof, magnetic, transparent</i>	<i>material, fabric, elastic, foil, rubber, wool, clay</i>	<i>sunrise, sunset, day length</i>



Year 2					
Objectives					
Autumn 1 Living things and their habitats	Autumn 2 Everyday Materials	Spring 1 Animals, including humans	Spring 2 Living things and their habitats	Summer 1 Animals, including humans	Summer 2 Plants
<i>Identifying and classifying</i> <i>Habitats and microhabitats: what are the similarities and differences?</i>	<i>Research</i> <i>How have materials we use changed over time?</i>	<i>Observing over time</i> <i>How does a tadpole change over time?</i>	<i>Comparative tests</i> <i>Do amphibians have more in common with reptiles or fish?</i>	<i>Pattern Seekings</i> <i>What activities make our hearts beat fastest?</i>	<i>Comparative tests</i> <i>Do bigger seeds grow into bigger plants?</i>
Prior Learning					
<ul style="list-style-type: none"> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made.</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, &amp; rock.</li> <li>Describe the simple physical properties of a variety of everyday materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<ul style="list-style-type: none"> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</li> </ul>	<ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>
Knowledge					
<ul style="list-style-type: none"> <li>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>Identify and name a variety of plants and animals in their habitats, including micro-habitats</li> </ul>	<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul>	<ul style="list-style-type: none"> <li>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive</li> </ul>	<ul style="list-style-type: none"> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>
Working Scientifically					
<ul style="list-style-type: none"> <li>To identify and classify</li> </ul>	<ul style="list-style-type: none"> <li>To ask simple questions and recognising that they can be answered in different ways</li> </ul>	<ul style="list-style-type: none"> <li>To observe closely, using simple equipment</li> </ul>	<ul style="list-style-type: none"> <li>To use their observations and ideas to suggest answers to questions</li> </ul>	<ul style="list-style-type: none"> <li>To gather and record data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>To gather and record data to help in answering questions.</li> <li>To perform simple tests</li> </ul>
Vocabulary					
<i>habitat, micro, food chain, environment, depend</i>	<i>opaque, transparent, rigid, property, material, flexible</i>	<i>adult, develop, life cycle, offspring, young, live young, metamorphosis</i>	<i>reptile, amphibian, fish</i>	<i>exercise, heartbeat, breathing, hygiene, germs, disease, food types</i>	<i>light, seed, bulb, root, stem, comparative test</i>



Year 3					
Objectives					
Autumn 1 Rocks	Autumn 2 Animals including humans: Nutrition	Spring 1 Forces and Magnets	Spring 2 Animals including humans: Movement	Summer 1 Light	Summer 2 Plants
<p><b>Scientific ideas change over time</b> What were James Hutton's ideas about rocks and what has changed since then?</p>	<p><b>Scientific ideas change over time</b> How did Chemist Marie Maynard Daly use science to help us improve our diets?</p>	<p><b>Pattern seeking</b> Does the size of a magnet affect how strong it is?</p>	<p><b>Identifying and classifying</b> How do skeletons of different animals compare?</p>	<p><b>Fair tests</b> How does the number of layers of transparent paper affect how much light can pass through?</p>	<p><b>Observing over time</b> How does the type of soil affect the growth of plants over time?</p>
Prior Learning					
<ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)</li> </ul>	<ul style="list-style-type: none"> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. Y2</li> </ul>	<ul style="list-style-type: none"> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 Uses of everyday materials)</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring, which grow into adults.</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</li> </ul>	<ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 -Animals, including humans)</li> <li>Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)</li> </ul>	<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants.</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats. Y2</li> </ul>
Knowledge					
<ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>Recognise that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food, they get nutrition from what they eat.</li> </ul>	<ul style="list-style-type: none"> <li>Compare how things move on different surfaces.</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Observe how magnets attract or repel each other and attract some materials and not others.</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.</li> <li>Describe magnets as having two poles.</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that they need light in order to see things, and that dark is the absence of light.</li> <li>Notice that light is reflected from surfaces.</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</li> <li>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</li> <li>Find patterns in the way that the size of shadows change.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves and flowers.</li> <li>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</li> <li>Investigate the way in which water is transported within plants.</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>
Working Scientifically					
<ul style="list-style-type: none"> <li>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>To use straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>To identify differences, similarities or changes related to simple scientific ideas and processes</li> </ul>	<ul style="list-style-type: none"> <li>To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> </ul>	<ul style="list-style-type: none"> <li>To gather, record, classify and present data in a variety of ways to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>To ask relevant questions and use different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>



### Vocabulary

igneous rock, sedimentary rock, metamorphic rock, fossil, properties of rock, soil	Nutrition, diet, skeleton, bone, muscle, tendon	contact force, non-contact force, magnetic force, attract, repel	skeleton, bones, support, skull, muscles, joints	light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, shadow, reflect	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal
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Year 4					
Objectives					
Autumn 1 Animals, including humans	Autumn 2 Living things and their habitats	Spring 1 Electricity	Spring 2 Living things and their habitats	Summer 1 States of Matter	Summer 2 Sound
Identifying and Classifying <i>Producer, predator or prey; is an animal only one?</i>	Pattern Seeking <i>How has the use of insecticides affected bee populations?</i>	Identifying and Classifying <i>Which material is the best conductor of electricity?</i>	Identifying and Classifying <i>Can we use a classification key to identify all the animals found in the garden?</i>	Fair Tests <i>How does the size of a container of water affect how long it takes to evaporate?</i>	Comparative Tests <i>Which material would be best for a pair of sound-proof earmuffs?</i>
Prior Learning					
<ul style="list-style-type: none"> <li>To describe how animals obtain their food from plants and other animals (2)</li> <li>To use a simple food chain (2)</li> </ul>	<ul style="list-style-type: none"> <li>To explore the part flowers play in the lifecycle of flowering plants including pollination (3)</li> <li>To identify that animals have skeletons and muscles for support (3)</li> </ul>		<ul style="list-style-type: none"> <li>Identify and name a variety of common animals (1)</li> <li>Identify and name animals in their habitats; to identify that most living things live in habitats to which they are suited (2)</li> <li>Autumn 2 term learning</li> </ul>	<ul style="list-style-type: none"> <li>Uses of everyday materials: a study of solid materials (2)</li> </ul>	<ul style="list-style-type: none"> <li>Naming of everyday solid materials (1 and 2)</li> </ul>
Knowledge					
<ul style="list-style-type: none"> <li>To describe the simple functions of the basic parts of the digestive system in humans</li> <li>To identify the different types of teeth in humans</li> <li>To identify the functions of the different types of teeth in humans</li> <li>To identify the differences between the teeth of carnivores and herbivores</li> <li>To interpret a variety of food chains</li> <li>To identify producers, predators and preys within a food chain</li> <li>To construct a variety of food chains</li> </ul>	<ul style="list-style-type: none"> <li>To describe the characteristics of invertebrates</li> <li>To recognise that invertebrates can be grouped in variety of ways</li> <li>To group invertebrates in a variety of ways</li> <li>To recognise that plants can be groups in categories (e.g. flowering and non-flowering plants)</li> <li>To recognise that environments can change and that this can sometimes pose dangers to living things</li> <li>To examine the human impact on environments</li> </ul>	<ul style="list-style-type: none"> <li>To identify common appliances that run on electricity</li> <li>To identify and name the parts of a simple series electrical circuit</li> <li>To construct a simple series electrical circuit</li> <li>To identify whether or not a lamp will light in a simple series circuit (based on whether or not the lamp is part of a complete loop with a battery)</li> <li>To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>To recognise some common conductor</li> <li>To recognise some common insulators</li> <li>To associate metals with being good conductors</li> </ul>	<ul style="list-style-type: none"> <li>To describe the characteristics of vertebrates and invertebrates</li> <li>To recognise that living things can be grouped in a variety of ways</li> <li>To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>To recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>	<ul style="list-style-type: none"> <li>To compare materials according to whether they are solid, liquid or gas</li> <li>To identify the characteristics of a solid</li> <li>To identify the characteristics of a liquid</li> <li>To identify the characteristics of a gas</li> <li>To group materials together according to whether they are solid, liquid or gas</li> <li>To observe that some materials change state when they are heated or cooled</li> <li>To measure the temperature at which changes in state occur (in Celsius)</li> </ul>	<ul style="list-style-type: none"> <li>To identify how sounds are made, associating some of them with something vibrating</li> <li>To recognise that vibrations from sounds travel through a medium to the ear</li> <li>To find patterns between the pitch of a sound and features of the object that produced it</li> <li>To find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>To recognise that sounds get fainter as the distance from the sound source increases</li> <li>To find patterns in the sounds that are made by different objects</li> <li>To investigate which material provides the best insulation against sound</li> </ul>
Working Scientifically					
To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	To identify differences, similarities or changes related to simple scientific ideas and processes	<ul style="list-style-type: none"> <li>To gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>	<ul style="list-style-type: none"> <li>To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including</li> </ul>	<ul style="list-style-type: none"> <li>To ask relevant questions and use different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>



● To use straightforward scientific evidence to answer questions or to support their findings			thermometers and data loggers		
<b>Vocabulary</b>					
producer, predator, prey, food chain, incisor, canine, molar, classify	invertebrate, human impact, pollination,	conductor, insulator, circuit, open,	classification key, vertebrates, environment,	fair test, evaporate, changing state, variable, degrees Celsius	comparative test, pitch, volume, pattern, conclusion



Year 5					
Objectives					
Autumn 1 Living things and their Habitats	Autumn 2 Animals, including humans	Spring 1 Changes of materials	Spring 2 Properties of materials	Summer 1 Forces	Summer 2 Earth and Space
<p><b>Research</b> <i>How do life cycles of mammals, amphibians, insects, birds and plants differ?</i></p>	<p><b>Pattern seeking</b> <i>Is there a relationship between a mammal's size and its gestation (pregnancy) period?</i></p>	<p><b>Identifying and classifying</b> <i>Reversible and irreversible changes; can you find examples of both?</i></p>	<p><b>Scientific ideas change over time</b> <i>What did Stephanie Kwolek discover and why is it important?</i></p>	<p><b>Scientific ideas change over time</b> <i>How do forces impact our daily life?</i></p>	<p><b>Pattern seeking</b> <i>Is there a pattern between the size of a planet and the time it takes to travel around the Sun?</i></p>
Prior Learning					
<ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways.</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</li> </ul>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>Compare how things move on different surfaces. Y3</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Y3</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Y3</li> <li>Describe magnets as having two poles. Y3</li> </ul>	<ul style="list-style-type: none"> <li>Observe changes across the four seasons. (Y1 - Seasonal changes)</li> <li>Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)</li> </ul>
Knowledge					
<ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>Describe the life process of reproduction in some plants and animals.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> </ul>	<ul style="list-style-type: none"> <li>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated including through filtering, sieving and evaporating.</li> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> </ul>	<ul style="list-style-type: none"> <li>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</li> <li>Describe the movement of the Moon relative to the Earth.</li> <li>Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</li> </ul>



### Working Scientifically (Science Disciplinary Knowledge)

<ul style="list-style-type: none"><li>scientific enquiries to answer questions, including recognising and controlling variables where necessary</li></ul>	<ul style="list-style-type: none"><li>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li></ul>	<ul style="list-style-type: none"><li>To use test results to make predictions to set up further comparative and fair tests</li></ul>	<ul style="list-style-type: none"><li>To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li></ul>	<ul style="list-style-type: none"><li>To identify scientific evidence that has been used to support or refute ideas or arguments</li></ul>	<ul style="list-style-type: none"><li>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li></ul>
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### Vocabulary

Eggs, gestation, reproduction, life process, change, cycle	growth, puberty, adolescence, life cycle	mixture, dissolve, solution, reversible/non-reversible, filter	Kevlar, product, solubility, conductivity, transparency, thermal	Force, friction, resistance, surface, mechanism, gear	spherical, solar system, rotates, orbit, planets: Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune
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Year 6					
Objectives					
Autumn 1 Electricity	Autumn 2 Living things and their habitats	Spring 1 Animals including humans	Spring 2 Animals including humans	Summer 1 Light	Summer 2 Evolution and inheritance
<p><b>Fair tests</b> How does the number of the batteries in a circuit affect the volume of a buzzer?</p>	<p><b>Scientific ideas change over time</b> How did Carl Linneaus' ideas help us to group plants?</p>	<p><b>Comparative tests</b> Which type of exercise has the greatest effect on our heart rate?</p>	<p><b>Pattern seeking</b> Is there a pattern between what we eat for breakfast and how fast we can run?</p>	<p><b>Fair tests</b> How do we see things?</p>	<p><b>Research</b> What evidence is there for and against the idea of evolution?</p>
<p><b>Big Idea</b> The batteries affect the brightness of bulbs and volume of a buzzer in a circuit.</p>	<p><b>Big Idea Grouping by appearance eg leaves using keys and apps to identify</b></p>			<p><b>Big Idea</b> We see objects which reflect light. Models of reflection and light (rays)</p>	
Prior Learning					
<ul style="list-style-type: none"> <li>Identify common appliances that run on electricity. Y4</li> <li>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Y4</li> <li>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Y4</li> <li>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Y4</li> <li>Recognise some common conductors and insulators, and associate metals with being good conductors. Y4</li> </ul>	<ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>Describe the life process of reproduction in some plants and animals</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</li> <li>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</li> </ul>	<ul style="list-style-type: none"> <li>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Y5 - Properties and changes of materials)</li> </ul>	<ul style="list-style-type: none"> <li>Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)</li> </ul>
Knowledge					
<ul style="list-style-type: none"> <li>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines.</li> <li>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</li> <li>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</li> <li>Use the idea that light travels in straight lines to explain why</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>



• Use recognised symbols when representing a simple circuit in a diagram.	• Give reasons for classifying plants and animals based on specific characteristics.			shadows have the same shape as the objects that cast them.	
<b>Vocabulary</b>					
Cell /battery, electricity, circuit (loop), component,	Vertebrates, classify, invertebrate, microorganism, characteristics, habitat	pulse rate, blood vessels, lungs, oxygen, carbon dioxide	nutrients, respiratory system, circulatory system, digestive system, cholesterol, coronary	rays,, shadow,, source, reflection	Offspring, sexual reproduction, inherited, species, fossils