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<b>Plants</b>		<p>To know and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>To know and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>To know and name: leaves, flowers and blossom.</p> <p>Explore and ask questions about plants growing in their habitat</p> <p>Use their observations to answers their questions.</p> <p>Observe the growth of flowers and vegetables that they have planted</p>	<p>To know how seeds and bulbs grow into mature plants.</p> <p>To know that plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Record with some accuracy how the height of a plant changes over time.</p> <p>Perform a simple comparative test to show that plants need light and water to stay healthy.</p>	<p>To know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>To know 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</p> <p>To know the way in which water is transported within plants.</p> <p>To know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Identify and describe the functions of</p>			

		<p>Observe plants closely using magnifying glasses</p> <p>Compare and contrast familiar plants</p> <p>Record how plants have changed over time (for example the leaves falling off trees and buds opening)</p> <p>Observe changes across the four seasons</p>		<p>different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>Investigate the way in which water is transported within plants</p> <p>Observe how water is transported in plants</p> <p>Record findings using labelled diagrams (to show the parts and functions of a plant).</p> <p>Observe the different stages of plant life cycles over a period of time.</p>			
<b>Animals, including humans</b>		<p>To know and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>To know and name a variety of common animals that are carnivores,</p>	<p>To know that animals, including humans, have offspring which grow into adults.</p> <p>To know and describe the basic needs of animals, including humans, for survival (water, food and air).</p>	<p>To know 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.</p> <p>To know that</p>	<p>To know the simple functions of the basic parts of the digestive system in humans.</p> <p>To know the different types of teeth in humans and their simple functions.</p>	<p>To know and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>To know and recognise the</p>	

		<p>herbivores and omnivores.</p> <p>To know and describe the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>To know and name the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Identify and classify a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and classify whether a common animal is a carnivore, herbivores or omnivores.</p> <p>Compare the structure of a variety of common animals</p>	<p>To know and describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Find out about the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Ask questions about different life cycles (e.g. egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep).</p> <p>Observe (in real life or through video clips) changes in different life cycles (e.g. egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep).</p>	<p>humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Identify and classify animals with and without skeletons.</p> <p>Compare and contrast the diets of different animals and decide ways of grouping them according to what they eat.</p> <p>Research different food groups and how they keep us healthy.</p>	<p>To know and understand a variety of food chains, identifying producers, predators and prey.</p> <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions Create a labelled diagram to show the different types of teeth.</p> <p>Make systematic and careful observations about the damage different substances can do to teeth.</p> <p>Use the results of their observations to draw simple conclusions about how to look after and protect our teeth.</p>	<p>impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>To know the ways in which nutrients and water are transported within animals, including humans.</p> <p>Identify the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Planning a scientific enquiry to identify the impact of exercise on the human body, including recognising and controlling variables.</p> <p>Taking measurements with increasing accuracy and precision and repeating readings where</p>	
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		<p>(fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>Identify, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Ask questions about what things animals need for survival and what humans need to stay healthy.</p> <p>Use their observations to suggest answers to questions.</p> <p>Suggest ways of finding out the answers to their questions.</p>		<p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>appropriate to record heart-rate during exercise.</p> <p>Identify scientific evidence by exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.</p>	
<b>Living things &amp; habitats</b>			<p>To know the differences between things that are living, dead, and things that have never been alive.</p> <p>To know how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a</p>		<p>To know and recognise that living things can be grouped in a variety of ways.</p> <p>To know that environments can change and that this can sometimes pose dangers to living things.</p> <p>Classify and group living things in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>To know the life process of reproduction in some plants and animals.</p> <p>Describe the life process of reproduction in some plants and animals.</p> <p>Observe and comparing the life cycles of plants and animals in their local</p>	<p>To know how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</p> <p>To know reasons for classifying plants and animals based on specific characteristics.</p> <p>Through</p>

			<p>simple food chain, and identify and name different sources of food.</p> <p>Observe, explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Sort and classify things according to whether they are living, dead, or have never been alive.</p> <p>Ask questions to help them sort and classify things according to whether they are living, dead, or have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe.</p> <p>Observe, identify and name a variety of plants</p>		<p>variety of living things in their local and wider environment.</p> <p>Make systematic and careful observations of how habitats in the local environment change throughout the year in particular using a thermometer to accurately measure the temperature at different points throughout the year.</p>	<p>environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times).</p> <p>Asking questions and suggesting reasons for similarities and differences.</p> <p>Observe changes over time in animals (e.g. chicks hatching) either in real life or through video footage.</p>	<p>observations classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals).</p> <p>Identify scientific evidence to support classification</p>
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and animals in their habitats, including microhabitats.

**Evolution & inheritance**

To know and recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

To know and recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.

To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Identify how animals and plants are adapted to suit

							<p>their environment in different ways and that adaptation may lead to evolution.</p> <p>Identify and research scientific evidence that supports the theory of evolution.</p>
<b>Materials (Including Changing State)</b>		<p>Distinguish between an object and the material from which it is made.</p> <p>Know and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Know the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the</p>	<p>To know the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>To know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Identify and compare the suitability of a variety of everyday</p>		<p>To know how to identify if a material is a solid, liquid or gas.</p> <p>To know that some materials change state when they are heated or cooled.</p> <p>To know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Compare and group materials together, according to whether they are</p>	<p>To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of</p>	

		<p>basis of their simple physical properties.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Ask questions about every day materials.</p> <p>Perform a simple test to identify the best material for a particular function (e.g. best material for an umbrella or lining a dog's basket).</p> <p>Use ideas and observations to suggest answers to the above question.</p> <p>Gather and record data to help answer the above question.</p>	<p>materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Compare the uses of every day materials in and around school with materials found in other places (e.g. home / the park)</p> <p>Observe, and record these observations about how materials are used.</p> <p>Identify and classify the uses of different materials.</p>		<p>solids, liquids or gases.</p> <p>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).</p> <p>Classify and group a variety of different materials.</p> <p>Setting up simple practical enquiries to compare the melting temperature of different substances.</p> <p>Record findings about the melting temperature of different substances using scientific language.</p> <p>Report the findings from the above enquiry.</p>	<p>everyday materials, including metals, wood and plastic.</p> <p>To know that dissolving, mixing and changes of state are reversible changes.</p> <p>To know 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.</p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and</p>	
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					<p>Use the results to draw simple conclusions and make predictions.</p> <p>Identify the similarities and differences in the melting point of different materials.</p> <p>Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line.</p>	<p>thermal), and response to magnets.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>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.</p> <p>Planning different types of scientific enquiry to answer questions (for example 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout</p>	
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						<p>curtains?')</p> <p>Observe and compare what happens during reversible and irreversible changes.</p> <p>Take measurements using a range of scientific equipment with increasing accuracy (e.g. temperature) when carrying out fair tests.</p> <p>Use test results from the fair test to make predictions to set up further comparative fair tests.</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations and of degree of trust in results.</p>	
<b>Rocks</b>			To know that different kinds of				

rocks are grouped together on the basis of their appearance and simple physical properties.

Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

To know and recognise that soils are made from rocks and organic matter.

Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Observe different types of rocks in and around the local area and the purpose for which they have been used.

Ask questions about why rocks

			<p>might have changed over time.</p> <p>Classify and group rocks according to whether they have grains or crystals, and whether they have fossils in them (by using hand lenses or microscopes).</p> <p>Ask and answer questions about why soils are formed.</p>				
<p><b>Forces and Magnets, including Earth and Space</b></p>				<p>To know how things move on different surfaces, notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>To know how magnets attract or repel each other and attract some materials and not others.</p> <p>To know that a variety of</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some</p>	

				<p>everyday materials can be grouped together on the basis of whether they are attracted to a magnet, and identify some magnetic materials</p> <p>To know that magnets have two poles.</p> <p>Compare how things move on different surfaces, notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and</p>		<p>mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>Ask questions about how different objects fall.</p> <p>Observe how different objects fall.</p> <p>Observe the effects of friction on different objects (in real life or video footage).</p> <p>Identify scientific evidence to support understanding of gravity – Sir Isaac Newton’s theory.</p> <p>Plan scientific enquiry to investigate the most effective parachute or boat, recognise and control variables where necessary.</p>	
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				<p>identify some magnetic materials.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>Ask relevant questions about how things move on different surfaces.</p> <p>Set up simple practical enquiries to find out how things move on different surfaces.</p> <p>Sorting materials into those that are magnetic and those that are not.</p> <p>Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces</p>		<p>Take measurements with increasing accuracy and precision, taking repeat readings when appropriate to record the speed at which parachutes fall or the boat travels.</p> <p>Record the data from the above investigation.</p> <p>Report the findings of the above investigation.</p> <p>Observe how levers, pulleys and gears work.</p> <p>Present findings of how levers, pulleys and gears work using scientific diagrams and labels.</p>	
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				another.			
<b>Seasonal changes</b>		<p>To know weather associated with the four seasons and how day length varies.</p> <p>Observe changes across the four seasons Make charts to show how day length changes.</p>					
<b>The Earth</b>						<p>To know that the sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006) that orbit it.</p> <p>To know the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>To know the movement of the Moon relative to the Earth.</p>	

						<p>To know that the Sun, Earth and Moon are approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> <p>Identify scientific evidence to support or refute ideas about the movement of bodies within in the solar system - Geocentric / Heliocentric.</p> <p>Take measurements to create scaled scientific drawings of the relative sizes of the earth, sun and moon.</p> <p>Record the length of the day at different times over the year using an appropriate</p>	
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						graph.	
<b>Light</b>				<p>To know that they need light in order to see things and that dark is the absence of light.</p> <p>To know that light is reflected from surfaces.</p> <p>To know that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>To know that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Observe how shadows change throughout the day.</p> <p>Record observations using scientific language, diagrams and bar charts.</p> <p>Find patterns in</p>			<p>To know that light appears to travel in straight lines.</p> <p>To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>Design and make a periscope to explain how it works.</p> <p>Observe different phenomena</p>

				the way that the size of shadows changes.			(such as rainbows, colours on soap bubbles, objects looking bent in water and coloured filters) and record their findings using labelled diagrams.
<b>Sound</b>					<p>To know how sounds are made, associating some of them with something vibrating.</p> <p>To know that vibrations from sounds travel through a medium to the ear.</p> <p>To know that sounds get fainter as the distance from the sound source increases.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the</p>		

					<p>volume of a sound and the strength of the vibrations that produced it.</p> <p>Identify differences and similarities between sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses and how these sounds could possibly be changed.</p> <p>Take accurate measurements (using data loggers) to record the volume at different places around the school.</p> <p>Record their findings using a chart or table.</p> <p>Report their findings in a written explanation</p>		
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