

Russell Hall Primary School – Long Term Planning



Subject	Science	Leader	M Lugg				
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Nursery	<p>Use all their senses in hands-on exploration of natural materials</p> <p>Beginning to talk about what they see, using a wide vocabulary</p> <p>Begin to talk about what they see, making observations of seasonal changes</p> <p>Name & identify body parts</p> <p>Look at key stages of development from birth to adult</p> <p>Observe & describe in words or actions the effects of physical activity on body</p>	<p>Talk about what they see, using a wide vocabulary</p> <p>Explore different habitats outdoors, e.g. winter changes</p> <p>Talk about what they see, using a wide vocabulary</p> <p>Explore collections of materials with similar and/or different properties</p> <p>Observe the changes in the seasons and environmental changes in winter</p>	<p>Talk about the differences between materials and changes they notice e.g. cooking, melting, shadows, floating & sinking</p> <p>Characteristics of liquids & solids e.g. cooking eggs, melting chocolate</p> <p>Begin to talk about what they see, making observations of seasonal changes</p>	<p>Observe growth over time</p> <p>Understand the need to respect & care for the natural environment & all living things</p> <p>To know that most plants start growing from a seed or bulb</p> <p>To know that all plants need water & light to grow & survive</p> <p>Observe plants closely through a variety of means e.g. magnifiers & photographs</p> <p>Use all the senses in hands-on exploration of plants</p> <p>Understand the key features of the life cycle of a plant</p> <p>Understand the key features of the life cycle of a butterfly</p>	<p>Explore how things work e.g. pulleys</p> <p>Explore & talk about different forces they can feel e.g. stretch, snap, rigid, magnetic repulsion, water pushing up when pushing a boat under it</p>	<p>Observe animals closely through a variety of means e.g. magnifiers & photographs</p> <p>Begin to talk about what they see, making observations of seasonal changes</p>	

<p style="text-align: center;">Reception</p>	<p>Describe what they see, hear & feel whilst outside</p> <p>Observational drawings of the natural world</p> <p>Discuss how to care for the living things & their habitats</p> <p>Observe how plants and animals behave differently as the seasons change</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Describe what they see, hear & feel</p> <p>Identify different parts of their body & animals</p> <p>Observe & interact with natural processes, such as a magnet attracting an object</p>	<p>Observe how plants and animals behave differently as the seasons change</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Observe & interact with natural processes, such as light travelling through transparent material and an object casting a shadow</p>	<p>Observe how plants and animals behave differently as the seasons change</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Know the effects exercise has on their bodies</p> <p>Have some understanding of growth and change</p> <p>Observe & interact with natural processes, such as ice melting</p>	<p>All plants need water, light and warmth to grow and survive</p> <p>A seed produces roots to allow water to get into the plant and shoots to produce leaves to collect the sunlight</p> <p>Extend vocabulary: blossom, buds, bulb, evergreen, deciduous</p> <p>Name & describe some plants</p> <p>Draw pictures of plants</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p>	<p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Use correct terms e.g. chrysalis, pupa when observing life cycle of butterfly & ladybirds</p> <p>Understand the key features of the life cycle of a plant or animal</p> <p>Be able to show care and concern for living things</p> <p>Talk about things they have observed including animals</p> <p>Observational drawings of animals</p> <p>Observe & interact with natural processes, such as a sound causing a vibration</p>	<p>Express opinions on natural & built environments & opportunities to hear different points of view on the quality of the environment</p> <p>Use words such as busy, quiet, pollution</p> <p>Describe what they see, hear & feel whilst outside</p> <p>Understand the effect of changing seasons on the natural world around them</p> <p>Examine change over time</p> <p>Observe & interact with natural processes, such as a boat floating on water</p>
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Our yearly planning is flexible in the foundation stage and although we plan themes for the year ahead, with the nature of Early Years we find that the needs and interests of the children does not always fit with the planned topics, with this in mind we adapt our planning to the interests and needs of the children.

<p>Year 1</p>	<p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (including pets).</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the human body is associated with each sense.</p>	
<p>Year 2</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>Identify and compare the suitability of a variety of everyday 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>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>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.</p> <p>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.</p>	

<p>Year 3</p>	<p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Compare how things move on different surfaces.</p> <p>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 identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers.</p> <p>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.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Recognise that they need light in order to see things, and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p>	
<p>Year 4</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state</p>	<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including</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</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things</p>	<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel</p>	

	<p>when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	
<p>Year 5</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Describe the changes as humans develop to old age.</p>	<p>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.</p> <p>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p>	<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as 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>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 mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>

			<p>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 everyday materials, including metals, wood and plastic.</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>Year 6</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and</p>		<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare and give reasons for variations in how components</p>	<p>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.</p>

	<p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>out or reflect light into the eye.</p> <p>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.</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>lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Give reasons for classifying plants and animals based on specific characteristics.</p>
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