



Churchside Federation Long Term Planning

Mundford

Science 2024-2025



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery Development Matters	Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and or different properties. Talk about what they see using a wide vocabulary. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and animal. Begin to understand the needs 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.					
Reception	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</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.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>					
	EP - Magnets/Floating and Sinking Literacy Tree - Outside Inside	EP - Human Body Literacy Tree - Knowing Yourself	EP - Space Literacy Tree - Talents and Powers Seasonal changes	EP - Plants Literacy Tree - Sowing a Seed Plants	EP - Electricity/Light Literacy Tree - Strength of Mind	EP - Rocks Literacy Tree - Family and Friends
Year One	SC1 asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.	Animals (Humans - Senses, body parts) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.	identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees	Animals - naming and sorting identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	Materials distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties.



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Comparing seasonal changes throughout Year 1 observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.						
Year Two	<p>Plants - naming plants Planting bulbs Working scientifically - What do plants need to survive?</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats</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>Working scientifically - Materials - identifying and comparing</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>Animals - life cycles, explore and compare the differences between things that are living, dead, and things that have never been alive</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>Working scientifically - Life cycles</p>	<p>habitats and microhabitats.</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 animals and plants, and how they depend on each other</p>	<p>Animals - What humans need to survive.</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>
Year Three	<p>Animals including humans</p> <p>Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat.</p> <p>Know how nutrients, water and oxygen are transported within animals and humans.</p> <p>Know about the importance of a nutritious, balanced diet.</p> <p>Identify that humans and some other animals have skeletons and</p>	<p>Rocks</p> <p>Compare and group together different kinds of rocks based on 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>Forces and Magnets</p> <p>Compare how things move on different surfaces.</p> <p>Know how a simple pulley works and use making lifting an object simpler</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p>	<p>Plants</p> <p>Identify and describe the functions of different parts of the flowering plant: roots, stem/trunk/leaves and flowers</p> <p>Explore the part flowers play in a flowering plants life cycle, including pollination, seed formation and seed dispersal</p>	<p>Working scientifically</p> <p>Sc21 Make measurements using standard units</p> <p>Sc22 Discuss and describe findings</p> <p>Sc23 Communicate findings using simple scientific language in written explanations, drawings, labelled diagrams, keys, bar</p>	<p>Light and sight</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 a solid object.</p> <p>Find patterns in the way that the sizes of shadows change.</p>



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	<p>muscles for support, protection and movement:</p>		<p>Observe how magnets attract and repel each other and attract some materials and not others.</p>	<p>Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary between plants Know the way in which water is transported between plants</p>	<p>charts or tables Sc24 Use results</p>	
<p>Year Four</p>	<p>Living things and their habitats.</p> <p>NC Objectives: 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 in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose danger to living things.</p>	<p>Electricity</p> <p>NC Objectives: Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether a lamp will light in a simple series circuit, based on whether the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes the circuit and associate this with whether a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and</p>	<p>States of matter</p> <p>NC Objectives: Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Animals including humans - the digestive system.</p> <p>NC Objectives: 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. Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Living things and their habitats</p> <p>NC Objectives: 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 in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose danger to living things.</p>	<p>Sound</p> <p>NC Objectives: Know how sound is made associating some of them with vibrating.</p> <p>Know what happens to a sound as it travels from its source to our ears.</p> <p>Know the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Know how sound travels from a source to our ears.</p> <p>Know the correlation between pitch and the object producing a sound.</p>



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		<p>associate metals with being good conductors. Know the difference between a conductor and an insulator, giving examples of each.</p> <p>Safety when using electricity.</p>				
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Year Five	<p><u>Ambition and Desire</u></p> <p>Earth & Space: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Describe the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p><u>Belonging and Equality</u></p> <p><u>Living Things and their habitats:</u> Know the life cycle of different living things, e.g. Mammal, amphibian, insect bird. Know the process of reproduction in plants. Know the process of reproduction in animals.</p>	<p><u>Power vs Principle</u></p> <p><u>Materials Solids, Liquids, Gases</u> Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p><u>Power vs Principle</u></p> <p><u>Materials Mixtures & Separation:</u> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids, and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p>	<p><u>Mystery and Truth</u></p> <p>Forces: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object and the impact of gravity on our lives. Identify the effects of air resistance, water resistance and friction, which act between moving surfaces. Recognise that some mechanisms, including levers, pulleys, and gears, allow a smaller force to have a greater effect.</p>	<p><u>Lessons from History</u></p> <p>Forces to be continued into Sum 2 as Sum 1 is short term to fit all information in.</p> <p>Then catch up with:</p> <p><u>Animals including humans:</u> - describe the changes as humans develop to old age. (NB: a lot of this is covered in RSE) and consolidate and revisit any previous objectives as required.</p>
Year Six	<p><u>Migration and movement:</u> Animals including humans-linking movement to the circulatory system</p> <p>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are</p>	<p><u>Evolution and inheritance:</u> Evolution and inheritance</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 recognise that living things produce offspring of the same</p>	<p><u>Enterprise and Activism:</u> Electricity (History of electricity and inventions through time).</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><u>Utopia vs dystopia:</u></p> <p>Living things and their habitat (creating a mythical creature) describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-</p>	<p><u>Fate vs Free Will:</u></p> <p>Working Scientifically</p>	<p><u>Crossing borders:</u></p> <p>Light- linking to timezones</p> <p>recognise that light appears to travel in straight lines 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 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>



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	transported within animals, including humans	kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	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 use recognised symbols when representing a simple circuit in a diagram	organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics		use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Events:						