

Science Medium Term Plan

	Autumn	Spring	Summer
Reception	<p>Communication and Language:</p> <ul style="list-style-type: none"> Ask simple questions to find out more. Articulate our ideas and thoughts in well-formed sentences. Describe events in detail. Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen. Learn and use new vocabulary in different contexts. Make comments about what we have heard and ask questions to clarify our understanding. <p>Physical Development:</p> <ul style="list-style-type: none"> Know and talk about the different factors that support our overall health and wellbeing: regular physical activity, healthy eating, tooth brushing, sensible amounts of 'screen time', having a good sleep routine, being a safe pedestrian. <p>Understanding the World:</p> <ul style="list-style-type: none"> Describe what we see, hear and feel while we are outside. Recognise some environments that are different to the one in which we live. Explore the natural world around us, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around us and contrasting environments, drawing on our experiences and what has been read in class. Understand some important processes and changes in the natural world around us, including the seasons and changing states of matter. <p>Personal, Social, Emotional Development:</p> <ul style="list-style-type: none"> Manage our own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. 		
Year 1	<p>Seasonal Changes – Autumn to Winter</p> <ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. <p>Everyday Materials</p> <ul style="list-style-type: none"> 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. Distinguish between an object and the material from which it is made. Compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>Seasonal Changes – Winter to Spring</p> <ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. <p>Animals including Humans</p> <ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 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). 	<p>Seasonal Changes – Spring to Summer</p> <ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. <p>Plants</p> <ul style="list-style-type: none"> 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
Y1 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions. Identifying and classifying. Performing simple tests. 		

Year 2	<p>Animals including Humans</p> <ul style="list-style-type: none"> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise. Describe the importance for humans of eating the right amounts of different types of food. Describe the importance for humans of hygiene. Notice that animals including humans have offspring which grow into adults. <p>Uses of Everyday Materials</p> <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 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>Living Things and Habitats</p> <ul style="list-style-type: none"> Explore and compare the differences between things that are living, dead and things that have never been alive. Identify and name a variety of plants in their habitats, including microhabitats. Identify that most living things live in habitats to which they are suited. Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. 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>Plants</p> <ul style="list-style-type: none"> Find out and describe need water, light and a suitable temperature to grow and stay healthy. Observe and describe how seeds and bulbs grow into mature plants.
Y2 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Gathering and recording data to help in answering questions. Using their observations and ideas to suggest answers to questions. Identifying and classifying. Performing simple tests. 		

Year 3	<p>Light</p> <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light. • Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. • Notice that light is reflected from surfaces. • Recognise that shadows are formed when the light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change. <p>Forces</p> <ul style="list-style-type: none"> • Compare how things move on different surfaces (friction). • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. • 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>Animals including Humans</p> <ul style="list-style-type: none"> • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. • 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>Rocks and Soil</p> <ul style="list-style-type: none"> • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Recognise that soils are made from rocks and organic matter. 	<p>Plants</p> <ul style="list-style-type: none"> • 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. • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
Y3 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> • Asking relevant questions (and using different types of scientific enquiries to answer them). • Setting up simple practical enquiries, comparative and fair tests. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Using straightforward scientific evidence to answer questions or to support their findings. 		

Year 4	<p>Sound</p> <ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Recognise that sounds get fainter as the distance from the sound source increases. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Find patterns between the pitch of a sound and features of the object that produced it. <p>States of Matter</p> <ul style="list-style-type: none"> Compare and group materials together according to whether they are solids, liquids or gases. 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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Living Things and their Habitats</p> <ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways. Explore and use the classification keys to help group, identify and name a variety of living things in their local and wider environment. Construct and interpret a variety of food chains, identifying producers, predators and prey. Recognise that environments can change and that this can sometimes pose dangers to living things. 	<p>Electricity</p> <ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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. Recognise some common conductors and insulators, and associate metals with being a good conductor. 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>Animals including Humans – Digestion</p> <ul style="list-style-type: none"> Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions.
Y4 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> Asking relevant questions (and using different types of scientific enquiries to answer them). Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Identifying differences, similarities or changes related to simple scientific ideas and processes. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Using straightforward scientific evidence to answer questions or to support their findings. 		

	Earth and Space	Animals including Humans – Life Cycles	Properties and Changes of Materials
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Year 5	<ul style="list-style-type: none"> Describe the Sun, Earth and Moon as approximately spherical bodies. Describe the movement of the Moon relative to the Earth. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. <p>Forces</p> <ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers pulleys and gears, allow a smaller force to have a greater effect. 	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. <p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. 	<ul style="list-style-type: none"> 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. 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. Demonstrate that dissolving, mixing and changes of state are reversible changes. 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.
Y5 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> Planning different types of scientific enquiries to answer questions, (including recognising and controlling variables where necessary). Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Identifying scientific evidence that has been used to support or refute ideas or arguments. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as display and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments. 		

Year 6	<p>Light</p> <ul style="list-style-type: none"> • 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. • 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. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>Electricity</p> <ul style="list-style-type: none"> • Use recognised symbols when representing a simple circuit in a diagram. • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and on/off position of switches. 	<p>Living Things and Habitats</p> <ul style="list-style-type: none"> • 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. • Give reasons for classifying plants and animals based on specific characteristics. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • Recognise that living things produce offspring of the same kind but normally offspring very and are not identical to their parents. 	<p>Animals including Humans and Healthy Lifestyles</p> <ul style="list-style-type: none"> • Describe the ways in which nutrients and water are transported within animals, including humans. • 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.
Y6 Working Scientifically (to be covered over the year)	<ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, (including recognising and controlling variables where necessary). • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Using test results to make predictions to set up further comparative and fair tests. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as display and other presentations. 		