

Woodlands Park Primary and Nursery School

Science Curriculum Map - CYCLE A

Term	Early Years Not limited to terms	Year One & Year Two	Year Three & Year Four	Year Five	Year Six
Autumn 1	<p>Science is embedded in play and exploration.</p> <p>Outdoor learning is key for observing nature.</p> <p>"What do you notice?" or "What happens if...?" to promote scientific thinking.</p> <p>Encourage recording observations through drawing, talking, or simple charts.</p> <p>Make observations and comments about animals and plants.</p> <p>Begin to use simple scientific vocabulary such as: observe, change, grow, push, pull, sink, float.</p> <p>Ask simple questions about the world around them.</p> <p>Begin to compare objects, materials, and living things.</p> <p>Animals and Habitats</p> <ul style="list-style-type: none"> Explore animals and their habitats (pets, farm animals, wild animals). Conduct bug hunts and investigate mini-beasts. Observe and understand basic life cycles (butterflies, frogs, plants). Begin to notice similarities and differences between animals, and between animals and humans. 	<p><u>Uses of Everyday Materials</u></p> <p>Identify and sort according to criteria</p> <p>Recognise natural and man-made materials</p> <p>Identify that some materials can change shape temporarily and others cannot change shape at all.</p> <p>Explain why a particular material is chosen to make into an object</p> <p>Different products/materials made from same source material eg wood</p> <p>Understand purpose of product affect material that is used. Identify material inventions</p>	<p><u>Animals (including humans)</u></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;</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><u>Properties of Materials</u></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, Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;</p> <p>Learn how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p>	<p><u>Evolution and Inheritance</u></p> <p>Understand living things produce offspring of the same kind but they normally vary and are not identical to parents.</p> <p>Identify how animals and plants adapt to suit environment in different ways</p> <p>Understand adaptation of plants and animals may lead to evolution</p> <p>Evolution and Inheritance: Darwin</p> <p>Recognise living things have changed over time and a number of factors can affect a species' evolution</p> <p>Understand how humans have evolved over time, and how human behaviour can affect change in species over time.</p>
Autumn 2		<p><u>Animals including Humans</u></p> <p>1 - Growth</p>	<p><u>Electricity</u></p>	<p><u>Earth and Space</u></p>	<p><u>Living things and their habitats</u></p>

	<p>Living Things</p> <ul style="list-style-type: none"> Plant seeds and grow plants; care for living things. Observe changes and decay over time (e.g., rotting logs, compost). Begin to understand cause and effect in living things (what plants and animals need to survive). Recognise changes in themselves as they grow (baby → toddler → child). <p>Changing States</p> <ul style="list-style-type: none"> Explore ice melting and freezing. Cooking and observing changes in food. Experiments like eggs in vinegar to observe chemical change. 	<p>Describe the needs of animals for survival Describe the needs of humans, for survival. Explore the importance of eating the right food Understand the importance of a balanced diet. Investigate the impact of exercise on our bodies.</p>	<p>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.</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; Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit; Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Learning more about the Earth and the celestial bodies in our solar system. Explore each planet - from Mercury to Neptune Explore how scientific ideas surrounding Earth's movement and placement have changed and developed over time. Complete an assortment of fascinating Mission Assignments - such as making a papier-mache model of the solar system - to deepen their understanding of the Moon, time zones and the night and day cycle.</p>	<p>Describe how to classify a range of living animals and plants. Understand MRS GREN and how a living organism follows these rules. Understand how an animal can be classified depending on its characteristics. Know and explain that microorganisms are both helpful and harmful. Explain the differences between fungi and other organisms. Describe, represent and present data about a living organism</p>
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Spring 1	<ul style="list-style-type: none"> Explore water in different states (solid, liquid) and simple everyday phenomena (e.g., rain, condensation). <p>Everyday Materials</p> <ul style="list-style-type: none"> Explore malleable materials: playdough, oobleck, shaving foam, clay. Junk modelling, building and constructing using different materials. Investigate properties of materials (soft/hard, wet/dry, heavy/light). Begin to talk about why materials are used for certain purposes (Development Matters: understanding simple properties). <p>Forces</p>	<p><u>Animals, including humans</u> <u>2 - Life cycles</u> Order the stages of a human life cycle Identify features inherited from a parent Compare the life cycle of a chicken and human Explain the life cycle of a butterfly and the process of metamorphosis Compare some similarities and differences between the life cycle of a frog and other animals</p>	<p><u>Living Things and Their Environments</u> 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><u>Forces</u> 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; Learn how to recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p>	<p><u>Electricity</u> 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>Learn how to 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;</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>
Spring 2	<ul style="list-style-type: none"> Water tray activities: floating and sinking. Magnets: magnetic vs non-magnetic objects. Ball runs, ramps, and simple motion experiments to explore gravity and force. Begin to notice movement, pushes and pulls, and simple mechanical concepts in play. <p>Bodies and Healthy Lifestyles</p> <ul style="list-style-type: none"> Identify body parts and senses. Discuss healthy eating, exercise, and hygiene. Notice differences and similarities between people and animals. Begin to describe what happens to their bodies when active (heart beats faster, hot/cold). <p>Seasonal Change and Environment</p>	<p><u>Plants</u> Understand that different seeds grow into different plants and to describe them. Plants from bulbs. Understand why seeds need to be dispersed. Ask questions that can be investigated. Plan and carry out an investigation, making sure it is a fair test. Evaluate results and draw conclusions. Use technical vocabulary such as germination, growth, disperse.</p>	<p><u>Living Things and Their Habitats – Conservation</u> Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p><u>Living Things and their Habitats</u> Understand life cycles, reproduction and animal characteristics. New concepts such as asexual reproduction and metamorphosis are introduced to help the children understand how life cycles are constantly progressing. Have the opportunity to dissect an egg, pretend to be David Attenborough or Jane Goodall as they research their</p>	<p><u>Light</u> 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; Learn how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>

	<ul style="list-style-type: none"> Observe changes in weather, trees, and plants throughout the year. Scavenger hunts to notice seasonal differences. Explore light and dark and changes in daylight. Begin to talk about the environment and changes caused by humans 			favourite creature and even create their own reports on world-renowned scientists.	
Summer 1		<u>Living Things and their Habitats</u> Be able to identify things that are living, things that are dead and things that have never been alive. Understand that living things need to live in suitable habitats. Explore the plants and animals that live in seaside and unfamiliar habitats. Explore and describe a micro-habitat. Explore food chains in a habitat.	<u>Sound</u> Identify how sounds are made, associating some of them with something vibrating; Recognise that vibrations from sounds travel through a medium to the ear; Find patterns between the pitch of a sound and features of the object that produced it; Find patterns between the volume of a sound and the strength of the vibrations that produced it; Recognise that sounds get fainter as the distance from the sound source increases.	<u>Changes of Materials</u> Describe how to recover a substance from a solution; Demonstrate that dissolving, mixing and changes of state are reversible changes; Learn how to 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.	<u>Healthy Bodies</u> Find out how scientific ideas about food and diet were tested in the past and how this has contributed to our knowledge of a balanced diet. Investigate different food groups and find out why a variety of foods is important for a healthy diet Find out how nutrients and water are transported in the human body Investigate what happens to the heart when we exercise and why Investigate muscles, skeleton and increased blood flow Investigate effects of tobacco, alcohol and other drugs (Link with work with the Youth Service) Evaluate what we can do to keep our bodies healthy (link with PSHE)
Summer 2		<u>Habitats Around the World</u> Understand that living organisms are suited to live in one or more habitat Identify what you can do to help reduce the impact humans have on a habitat Identify how rainforests are endangered	<u>States of Matter</u> Compare and group materials together, according to whether they are solids, liquids or gases; Observe that some materials change state	<u>Animals including Humans</u> Identify key stages of a mammal's life cycle Explore the gestation period of mammals Learn about foetal development	<u>Looking after our environment</u> Learn about climate change Understand what happens to waste that is sent to landfill Suggest ways in which the school can reduce

		<p>Understand an ocean habitat</p> <p>Identify the differences between the Arctic and Antarctic</p>	<p>when they are heated or cooled,</p> <p>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>Investigate the hand span of differently aged children</p> <p>Learn about the changes experienced in puberty</p> <p>Describe the changes humans may experience during old age</p>	<p>the amount of waste that is sent to landfill</p> <p>Understand the difference between renewable and non-renewable energy</p> <p>Explore what happens when fuels are burnt</p> <p>Explore the outcomes of COP26</p> <p>Compare data associated with the weather</p> <p>Identify the effects of climate change on animals and habitats</p>
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