



Woodlands Park Primary and Nursery School Science Curriculum Map



| Term | Early Years Not limited to terms | Year One | Year Two | Years 3 and 4 (Robins) Cycle A | Years 4 and 5 (Otters) Cycle A | Years 5 and 6 (Wolves) Cycle A |
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| Autumn 1 | <p>Children are provided with regular access to the outside learning environment e.g. EYFS garden, Woody P Woods (weekly sessions) and wider school grounds.</p> <p>provided with opportunities to explore their immediate natural world through investigation using their senses e.g. hearing – listening walks, sight – observing changes in their environment across the four seasons – growth and colour, touch – explore textures within the natural world e.g. bumpy bark, smooth conkers, spiky leaves.</p> <p>provided with access to natural loose parts to explore and create with LW (CWM) encouraged to engage with The Wildlife Trusts 30 Days Wild initiative. Encourage families to engage with this at home as a family unit as well as in school e.g. walk barefoot outside, lie back and look at the clouds, make seed bombs etc.</p> <p>encouraged to seek out patterns within our natural world and use them within their wider work BOOK HOOK – ‘Swirl by Swirl Spirals in Nature’ by Joyce Sidman M (NP) EAD (CWM) provided with opportunities to go ‘bug hunting’, pond dipping etc. either on site or via a planned educational experience.</p> | <p><u>My Body</u> Identify and name several body parts and identify their location on their own bodies. Describe how body parts are used, or how they move. Conduct tasks to use their own sense of sight. Feel and describe a variety of objects Conduct a small investigation. Sort and describe foods</p> | <p><u>Growth and Survival</u> Find out about the offspring of a variety of different animals. Find out about the different ways in which animals reproduce. Explore how humans grow as they get older. Find out what animals, including humans, need to survive. Explore the environment as a factor of survival for animals, including humans. Find out how to eat a healthy balanced diet. Find out why exercise is important to keep our bodies healthy.</p> | <p><u>States of Matter</u> Compare and group materials according to whether they are solid or liquid Identify and explore properties of gases Observe that materials change state when they are heated or cooled Research temperature in degrees Celsius at which materials change state Understand evaporation and condensation and how these processes play a part in the water cycle.</p> | <p><u>Viking Science</u> Understand the science behind some of the Viking food production methods and about modern day food production. Identify, describe and classify micro-organisms Devise and conduct tests to compare the effectiveness of glue Plan and conduct scientific enquiries, presenting findings Use observations and test results to make predictions and set up further tests.</p> | <p><u>Living Things and Their Habitats</u> Classification of living things including micro-organisms. Sorting animals based on similarities and differences. Learn about standard system of classification developed by Carl Linnaeus. Design a curious creature based on its characteristics. Learn about micro-organisms Conduct an investigation into growth of mould on bread Use dough to create a new single celled micro-Organism and explain how and why it is classified. Create a field guide to living things in the local area.</p> |
| Autumn 2 | <p>provided with opportunities to talk about night and day, the movement of the Earth around the Sun, applying the concept of night and day to what they do and what different animals do too. Vocabulary: nocturnal, diurnal BOOK HOOK – ‘Meet the Planets’ by Caryl Hart & Bethan Woollvin</p> <p>encouraged to develop their knowledge and understanding of the seasons and the processes</p> | <p><u>Seasonal Changes</u> Describe the weather. Know that weather affects human activity Explain the terms ‘adapt’ and ‘hibernate’ Identify which season has the shortest/longest days Gather weather data over a period of time.</p> | <p><u>Living in 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</p> | <p><u>Changing Sound</u> Understand sounds are made when objects vibrate Make careful observations Investigate whether sound travels through different materials Explore relationship between distance and volume</p> | <p><u>Properties and Changes of Materials</u> To know some materials will dissolve in liquid to form a solution and to describe how to recover a substance from a solution Understand that some changes of state can be reversed and some cannot Changes caused by burning create new materials and</p> | <p><u>Evolution and Inheritance</u> Understand living things produce offspring of the same kind but they normally vary and are not identical to parents. Identify how animals and plants adapt to suit environment in different ways</p> |

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| | <p>and events that occur within them e.g. hibernation, migration, new life and lifecycles (CATERPILLARS – BUTTERFLIES in class BOOK HOOK – ‘The Very Hungry Caterpillar’ by Eric Carle – note misconception – chrysalis NOT cocoon) through use of books, images, online videos and exploration of other resources. provided with opportunities to discuss the weather and how this changes according to the seasons and where you are in the world. Encouraged to use descriptive vocabulary using The Write Stuff approach (Wendel the Word Collecting Monster). Make use of images and video clips of weather that may not be experienced within a school year or from around the world. Get out in all weathers to experience it and therefore be able to describe it!!</p> <p>provided with opportunities to compare and contrast different creatures and their living habitats e.g. Where in the world would you find them?, Who lives above ground/below ground?, How does the creature move?, What do they eat? When do they sleep? How are their young born? Vocabulary: herbivore, carnivore, omnivore, insect, bird, mammal, reptile, marsupial, nocturnal, diurnal, oviparous. Encourage and pose questions to be considered!! Do all mammals give birth to live young? – duck billed platypus/spiky echidna. Use a range of books and online sources to support this e.g. Penguins: Meet the Family https://www.bbc.co.uk/iplayer/episode/m000qgsj/penguins-meet-the-family BOOK HOOKS – ‘The Snail and the Whale’ by Julia Donaldson & Axel Scheffler, ‘Monkey Puzzle’ by Julia Donaldson & Axel Scheffler Wonder Why Kangaroos Have Pouches’ by Jenny Wood ‘Meet the Oceans’ by Caryl Hart & Bethan Woollvin</p> <p>provided with opportunities for children to discover what plants need to grow and survive. Observe the lifecycle of a plant seed, seedling, plant, flower/fruit. What produce grows above the ground? What grows below the ground? Be</p> | | <p>animals that live in seaside and unfamiliar habitats. Explore and describe a micro-habitat. Explore food chains in a habitat.</p> | <p>Why do we need to prevent sound to travel sometimes? Plan a test to measure how well materials muffle sound Investigate pitch and volume and how to change pitch</p> | <p>these changes are not reversible Compare and group materials Give reasons based on evidence from fair tests for particular uses of everyday materials.</p> | <p>Understand adaptation of plants and animals may lead to evolution Evolution and Inheritance: Darwin Recognise living things have changed over time and a number of factors can affect a species’ evolution Understand how humans have evolved over time, and how human behaviour can affect change in species over time.</p> |
| Spring 1 | | <p>Identifying Animals identify, name and describe a variety of common animals kept as pets. Identify a variety of mammals and compare and describe features. Compare the characteristics of a variety of birds and reptiles Consider similarities and differences between some fish and amphibians Collect, present and interpret data about pets or mini beasts.</p> | <p>Growing Plants 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>Circuits and Conduction Investigate and identify circuits and their different components Understand working with electricity can be dangerous Identify mains and battery powered Understand why come circuits do not work because they are not complete. Insulators and conductors Switches – understand why they are used and use one in a circuit Plan and carry out an experiment</p> | <p>Eating and Digestion Identify and classify carnivores, herbivores and omnivores Construct and interpret a variety of food chains Different types of teeth in humans and their functions Keeping teeth healthy Investigate digestive system and how it work. Describe basic functions of the digestive system.</p> | <p>Animals Including Humans Build on knowledge and understanding of different systems within the body Research parts and functions of the circulatory system Understand how nutrients are transported around the human body. Explore how a healthy lifestyle supports the body to function How different types of drugs affect the body.</p> |
| Spring 2 | | <p>Everyday Materials Identify a variety of common materials. Distinguish between an object and the material from which it is made. Describe materials according to their properties. Describe why some materials suit certain objects better than others. Carry out an experiment to</p> | <p>Exploring Everyday Materials Identify and sort according to criteria Recognise natural and man-made materials Identify that some materials can change shape temporarily and others cannot change shape at all. Explain why a particular material is</p> | <p>Eating and Digestion Identify and classify carnivores, herbivores and omnivores Construct and interpret a variety of food chains Different types of teeth in humans and their functions Keeping teeth healthy Investigate digestive system and how it work. Describe basic functions of the digestive system.</p> | <p>Life Cycles Describe process of sexual and asexual reproduction in plants Describe the process of sexual reproduction in animals. Observe and compare life cycles of animals in local environment with other animals around the world Compare how different animals reproduce and grow</p> | <p>Seeing Light Review understanding of light and shadow and explore how light travels. Investigate how we see things through light entering the eyes Explore how light can be reflected and changed direction Investigate reflections from a variety of surfaces</p> |

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| | <p>able to taste and use produce that we have cultivated. encouraged to work together to develop and cultivate class allotment plot.</p> <p>Links to EAD (CWM) e.g. grow sunflowers – consider Van Gogh’s ‘Sunflowers’ and create own versions M – measure and compare sunflower growth.</p> <p>encouraged to recognise the role plants and trees have in our world, the types of plants that attract insects to our gardens, the importance of insects to our food chain i.e. bees pollinate plants that are in our food chain.</p> <p>encouraged to consider how our actions can have an impact on our environments, locally and globally BOOK HOOKS – ‘Who Ate Stanley’ by Sarah Roberts ‘The Messy Magpie’ by Youzar Sif (Twinkl Story)</p> <p>provided and encouraged to notice ‘changes’ during their play and planned scientific experiences e.g. Ice – natural process of freezing and melting occurring and what impacts this e.g. adding salt, warm/cold water, Shadows – notice what happens to your shadow of that of an object across the day, Properties of materials - Light – light passing through materials, creation of rainbows Vocabulary: transparent, translucent, opaque, refraction, Magnetic Forces – using magnets Vocabulary: attract, repel, Floating and Sinking – What makes an object sink or float? How does size, weight, material impact this? What happens when you add salt to the water? (FLOATING EGG EXPERIMENT), Reactions – simple base reactions – ‘volcanoes’, Solutions and Mixtures – how some things can be separated having been mixed whilst others cannot. Changes that occur when ingredients are combined during cooking.</p> | <p>find out which materials are waterproof.</p> | <p>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>Find out about the work of naturalists</p> | <p>Plan and carry out an experiment to investigate how shadows behave</p> <p>Explore differences between shadows and reflections and consolidate knowledge of how we see things.</p> |
| Summer 1 | | <p>Identifying Plants Learn about what a plant is. Learn about identify features of a variety of common garden and wild plants. identify and name trees, learn some differences between deciduous and evergreen trees Identify the main parts of a variety of plants and describe their functions. Identify ways in which plants change over time.</p> | <p>Super Scientist A range of different experiments and investigations using scientific knowledge: Use knowledge to make predictions Observe patterns and talk about what they have found out. Gravity, light, sound, senses, germs, circuits.</p> | <p>Tombs, Torches and Timekeepers Recognise we need light to see and how light is reflected from surfaces Explore the sun as a light source and identify difference between day and night. Investigate what shadows are and why they are formed Investigate how the size of shadows changes throughout the day.</p> | <p>Changes and Reproduction Recognise the stages of growth in humans Know stages in gestation period of humans and compare them to other animals Recognise stages of development during childhood Understand the initial changes inside and outside the body during puberty and how they differ for boys and girls Understand changes throughout adulthood and old age.</p> | <p>Healthy Bodies 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)</p> |
| Summer 2 | | <p>Living Habitats Identify things that are living, things that are dead and things that have never been alive</p> | | <p>Under the Sea Find out what a habitat is and investigate which kinds of organisms live in a marine habitat Identify and classify animals of the sea</p> | <p>Changing Sound Understand sounds are made when objects vibrate Make careful observations Investigate whether sound travels through different materials</p> | |

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| | | <p>Understand that living things need to live in suitable habitats.</p> <p>Explore the plants and animals that live in seaside and unfamiliar habitats.</p> <p>Explore and describe a micro-habitat</p> <p>Explore food chains in a habitat.</p> | | <p>according to specific criteria</p> <p>Investigate life processes</p> <p>Investigate respiration differences between land and sea organisms</p> <p>Investigate how living organisms move and find out ways in which different types of animals reproduce.</p> | <p>Explore relationship between distance and volume</p> <p>Why do we need to prevent sound to travel sometimes?</p> <p>Plan a test to measure how well materials muffle sound</p> <p>Investigate pitch and volume and how to change pitch</p> | |
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