

Langley Primary School

Science Curriculum

	0-3 Preschool	3-4 EYFS1	4-5 EYFS2	Links to KS1 Curriculum
EYFS Area of Learning	Understanding the World: The Natural World			
Fundamental Knowledge	<p>Repeat actions that have an effect whilst exploring materials inside and outside with different properties.</p> <p>Explore and respond to different natural phenomena in their setting and on trips</p>	<p>Use all their senses in hands-on exploration of natural materials.</p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Explore how things work.</p> <p>Plant seeds and care for growing plants.</p> <p>Understand the key features of the life cycle of a plant and an animal.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p> <p>Explore and talk about different forces they can feel.</p> <p>Talk about the differences between materials and changes they notice.</p>	<p>Explore the natural world around them and describe what they see, hear and feel while they are outside.</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Understand the effect of changing seasons on the natural world around them.</p>	<p>Ask simple questions and recognising that they can be answered in different ways.</p> <p>Use their observations and ideas to suggest answers to questions</p> <p>Observing closely, using simple equipment. Performing simple tests. Identifying and classifying.</p> <p>Gathering and recording data to help in answering questions.</p>
Early Learning Goal	<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>			

	AUT 1	AUT 2	SPR 1	SPR 2	SUM 1	SUM 2
Y1	<p><u>Everyday Materials</u> Pupils develop vocabulary to describe material properties. They carry out a range of simple tests on materials and investigate the best material to make a particular object.</p>	<p><u>Everyday Materials</u> Pupils develop vocabulary to describe material properties. They carry out a range of simple tests on materials and investigate the best material to make a particular object</p>	<p><u>The Weather</u> Observe & describe the weather associated with the seasons and how day length varies.</p>	<p><u>Animals (including humans)</u> Pupils will become familiar with common British vertebrates and invertebrates. They learn about the different groups of vertebrates and be able to describe the main external features of each group. They look at what animals eat and will understand that different animals have different diets. They describe the external human body in detail.</p>	<p><u>Plants</u> Pupils learn the names of some common native flowering plants and trees. They plant bulbs and/or seeds and observe their growth over a period of weeks. They go outside to study flowers and trees in wild and cultivated areas, making sketches and notes.</p>	
<p><u>Seasonal Change</u> Pupils study the same natural area during the course of the year, looking at how the area as a whole changes and at how individual aspects such as a single tree change during the different seasons. They use their senses to observe the area and find common animals and plants within the area. They learn how to show respect for the area and for the living things in it.</p>						
Y2	<p><u>Animals (including humans)</u> In this unit pupils begin by learning about the stages of human growth. They learn that animals grow until they are adult and that that different animals start life in different forms, some as eggs and some as live births and they look at the needs of the young of different species.</p>	<p><u>Living Things and their habitats</u> Pupils classify things as living, once alive and never alive. They learn about the characteristics of living things and building and observing a wormery and going outside to hunt for examples of living and non-living things. They look for characteristic of life in plants and establish that plants are living things. Pupils spend time learning about familiar and unfamiliar habitats such as woodland and the seashore. They work in the classroom and outdoors to look at animals and plants and further their knowledge of the variety of life in</p>	<p><u>Use of Everyday Materials</u> Pupils explore different materials and begin to link properties with the use of the material, carrying out an investigation to decide on the best material for a particular use and imagining what objects would be like if they were made from “silly” materials. They learn about the life of John Boyd Dunlop who invented the pneumatic tyre.</p>		<p><u>Plants</u> Pupils think about the difference between seeds and other objects and work out what a seed is. They plant beans and monitor them weekly, observing, measuring, sketching and photographing them to provide a record of growth. They investigate the basic needs of plants for healthy growth and explore the way that plants change through the seasons.</p>	

		different places.They extend their knowledge of the diets of different animals to understand about food chains.			
<p><u>Local Habitats</u> Pupils visit the same habitats and microhabitats at different times of year and explore the seasonal changes in a habitat and a micro-habitat. They continue to develop their observation skills.</p>					
Y3	<p><u>Rocks and fossils</u> Pupils explore the characteristics of rocks and learn their names. They carry out simple tests on different rocks and use sweets to model how rocks are made. They explore the composition of soil and think about how soil is made. They learn about the formation of fossils and make their own model fossils. They look at pictures of dinosaur fossils and try to come to some conclusions about the living dinosaurs the fossils came from.</p>	<p><u>Light</u> Pupils learn to distinguish a light source from reflected light. They learn that light travels in straight lines, study how we see and are taught how to protect their eyes. They investigate the transparency of fabrics and carry out some experiments to find out about shadow formation.</p>	<p><u>Animals (including humans)</u> Pupils revisit the classification of animals according to diet as carnivores, herbivores or omnivores, researching the diets of animals in more detail. They look at human dietary requirements and begin to identify different food types and their different uses in the body. Dissecting an owl pellet provides a link between learning about diets and the study of skeletons. Pupils learn about external and internal skeletons , making a life size skeleton diagram and studying the names and functions of the major bones in the human skeleton.</p>	<p><u>Plants</u> Pupils carry out a long-term investigation of the factors that affect the growth of plants, observing and measuring their plants for the course of the unit. They learn about the main functions of the different parts of a plant and will study the life cycle of a flowering plant, including studying the structure of a flower and the different methods of seed dispersal.</p>	<p><u>Forces & Magnets</u> Pupils explore magnetism and non-contact forces, suspending magnetic items in mid-air under the influence of magnetic forces. They test materials for magnetic properties and think about what materials are magnetic. They describe the properties of a magnet in simple terms and learn about the uses of magnets.</p>
Y4	<p><u>Electricity</u> Pupils learn that some materials allow electricity through them and others do not. They learn about the history of electricity and they make and test electrical circuits with a variety of components. They use their knowledge of electricity to design and build a model of a burglar alarm for a house.</p>	<p><u>Sound</u> Pupils listen to and identify sounds and learn how our ears work to detect sounds. They carry out experiments to help them learn about loudness and pitch and use data loggers to investigate the best material for muffling sound. They make and play musical instruments.</p>	<p><u>States of Matter</u> Pupils learn that materials come in three states of matter: solid, liquid or gas. They identify materials as solids, liquids or gases, including some that are harder to classify such as sand or sponge. They learn how to use a thermometer and investigate changes of state. They learn about the water cycle.</p>	<p><u>Animals including humans- digestion</u> Pupils learn about the structure of the mouth and about how to care for their teeth, investigating which drink stains teeth the most. They learn about the structure of the digestive system and building a model of the digestive process and making “poo” then using their knowledge to produce a piece of creative writing. The explore interrelationships in</p>	<p><u>Living things and their habitats</u> Pupils look at the area within and near the school grounds and at the impact of humans on the environment. They discuss the need to balance human requirements against those of the environment.</p>

				food, constructing food chains and food webs.		
Y5	<p><u>Materials- Mixtures & Reactions</u> After reviewing and extending their knowledge of materials from previous years, pupils study dissolving and learn how to recover materials from a solution. They look at other methods of separating mixtures and carry out an investigation on “sewage” to clean it up before discharge into a river. They investigate chemical reactions including burning and use a key and a series of simple tests to identify some mystery powders. They learn about reversible and irreversible changes and they create a drama about the life of a famous materials scientist.</p>	<p><u>Forces</u> Pupils learn more about the forces of gravity and friction and investigate the friction of different surfaces. They study air resistance, investigate paper spinners falling, look at floating and sinking and build a self-righting boat. Learning about simple forces includes activities to study pulleys, gears and other simple machines and gives pupils the chance to use their knowledge of machines to build a catapult.</p>	<p><u>Earth & Space</u> Pupils study our solar system, learning about the relative movements of the planets and the Moon and relating these to the way we experience the Sun and the Moon on Earth. They carry out some research into planets and investigate the way meteorites have shaped the surface of the Moon.</p>	<p><u>Life Cycles</u> Pupils revisit the life cycle of plants, and learn about pollination. They compare the life cycles of birds, mammals, insects and amphibians and learn that insects and amphibians undergo metamorphosis.</p>	<p><u>Human Development</u> Pupils learn about the human life cycle and about the changes of the body during puberty. They learn about the development of a baby during pregnancy and about the birth of a baby.</p>	
Y6	<p><u>Classification</u> Pupils build on their knowledge of classification from previous years and look at the classification of invertebrates and microorganisms in more detail and playing games to help them learn about microorganisms and classes of invertebrates. They study yeast, observing its growth, using it to make bread.</p>	<p><u>Evolution and inheritance</u> Pupils learn about the life and work of Charles Darwin and what is meant by the terms evolution and survival of the fittest. They learn how animals and plants are adapted to their environment. They investigate camouflage and find out how humans evolved. They carry out a simple experiment to model evolution and selective breeding.</p>	<p><u>Animals including humans/circulatory system</u> Pupils study the circulatory system, learning about the basic components that make up blood, how the heart works and how blood circulates round the body. They learn about the lungs and the process of breathing and investigate the effect of exercise on the heart and breathing rates. They learn about the effects of smoking and alcohol.</p>	<p><u>Light</u> Pupils build on their work on light in Year 3 to make more detailed investigations of shadows. They use their conclusions from this work to create shadow puppets and use special effects in their puppet shows. They study reflectivity, build a periscope and investigate the effectiveness of sunglasses, learning about the dangers of UV light.</p>	<p><u>Electricity</u> Pupils build on their learning from Year 4 to learn more about circuits, including how to use recognised symbols to represent circuits. They investigate how to change the amount of electricity flowing round a circuit, looking at how different components affect the flow of electricity and at the difference that the length and thickness of wires can make. They learn about series and parallel circuits and they use their knowledge of electricity to build games that use electric circuits.</p>	<p><u>Diet and healthy living</u> Pupils build on their learning from Year 3 and learn more about how lifestyle impacts on health. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins.</p>

