Four Oaks Primary School Science Progression Map

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	Ask simple questions about given investigations. Explore the natural world around them To talk about differences and changes between materials. Make a simple representation of animals and plants.	To ask a simple question. explore the natural world around them know some similarities and differences between the natural world around them and contrasting environments Understand some important processes and changes in the natural world around them, including seasons and changing states of matter. make observations and drawing pictures of animals and plants	Ask simple questions and recognise that they can be answered in different ways. Use simple equipment to observe closely. Perform simple tests. Identify and classify Use his/her observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.	Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. Use simple equipment to observe closely including changes over time. Perform simple comparative tests. Identify, group and classify Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns. Gather and record data to help in answering questions including from secondary sources of information.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help with answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a Range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help with answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Plan different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments.	Plan different types of scientific enquiries to answer their own or others questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments.

					Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support his/her findings.	Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support his/her findings.		Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources. Group and classify things and recognise patterns. Find things out using a wide range of secondary sources of information. Use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate his/her methods and findings.

Animals Including Humans	Observe animals closely through a variety of means e.g. magnifiers & photographs. Look at key stages of development from birth to adult. Name & identify body parts. Observe & describe in words or actions the effects of physical activity on body. Understand the key features of the life cycle of an animal.	Shows some understanding that good practices with regard to exercise, eating, drinking water, sleeping & hygiene can contribute to good health. Describe what they see, hear & feel. Identify different parts of their body & animals. Be able to show care and concern for living things. Know the effects exercise has on their bodies. Have some understanding of growth and change. Talk about things they have observed including animals. Observational drawings of animals.	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). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Understand that animals, including humans, have offspring which grow into adults. Describe the basic needs of animals, including humans, for survival Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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.	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. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop into old age.	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 transported within animals, including humans.

Materials	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. Explore how things work e.g. pulleys. Explore & talk about different forces they can feel e.g. stretch, snap, rigid, magnetic repulsion, water pushing up when pushing a boat under it. Talk about the differences between materials and changes they notice e.g. cooking, melting, shadows, floating & sinking. Characteristics of liquids & solids e.g. cooking eggs, melting chocolate	Observe & interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object & a boat floating on water. Use vocabulary to name specific features of the natural world, both natural & man-made.	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.	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.			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. Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. 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.	

Plants	Most plants start growing from a seed or bulb. All plants need water & light to grow & survive. Observe plants closely through a variety of means e.g. magnifiers & photographs. Extend vocabulary: leaves, petals, roots, bulb, trunk, branches, stem, garden plants, wild plants, seeds. Use all the senses in hands-on exploration of plants. Understand the key features of the life cycle of a plant.	All plants need water, light and warmth to grow and survive. Extend vocabulary: blossom, buds, bulb Describe what they see, hear & feel whilst outside Name & describe some plants. Draw pictures of plants.	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.	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.	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. 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.			
Seasonal Changes		Understand the effect of changing seasons on the natural world around them. Notice & discuss patterns around them e.g. the effect of seasons.	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.					

Living Things and their Habitats	Explore different habitats outdoors, e.g. scent, colour & shape of flowers attracting bees. Observe growth & decay over time. Begin to understand the need to respect & care for the natural environment & all living things. Talk about what they see, using a wide vocabulary. Understand the key features of the life cycle of a butterfly.	see, hear & feel whilst outside. Observational drawings of the natural world Discuss how to care for the living things & their habitats. Examine change over time. Use correct terms e.g. chrysalis, pupa when observing life cycle of butterfly & ladybirds. Express opinions on natural & built environments & opportunities to hear different points of view on the quality of the environment. Use words such as busy, quiet, pollution		Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats. 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.		Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things.	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.	Give reasons for classifying plants and animals based on specific characteristics. 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.

Forces and Magnets					Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Compare and group together a variety of everyday materials on the basis of whether or not they are attracted to a magnet, and identify some magnetic materials. 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.		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.	
Rocks					Recognise that soils are made from rocks and organic matter. 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.			

Light					Notice that light is reflected from surfaces. Recognise that he/she needs 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 eyes. 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.			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. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity						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 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.		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 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.

Sound						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.		
States of Matter						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 (°C). Identify the part played by evaporation and condensation in the water cycle, and associate the rate of evaporation with temperature		

Earth and 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. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.		
Evolution and Inheritance								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 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.