



# Micklands Primary School

## Progression in Learning - Science

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Working Scientifically</b>	<b>Asking and answering questions</b>	Demonstrate curiosity about the world around them.	Begin to use simple scientific words to ask or answer a scientific question	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources, such as books and video clips.	Use ideas to pose questions, independently, about the world around them.	Answer questions using straight forward scientific evidence.	Raise different types of scientific questions, and hypotheses.	Pose/select the most appropriate line of enquiry to investigate scientific questions.
	<b>Making predictions</b>	Talk about what they think might happen based on their own experiences.	Begin to say what might happen in an investigation.	Begin to make predictions	Make predictions and begin to give a reason.	Make predictions and give a reason using simple scientific vocabulary.	Make predictions and give a reason using scientific vocabulary.	Base predictions on findings from previous investigations.
	<b>Making observations</b>	Use senses to explore the world around them and talk about what they notice.	Observe objects, materials and living things and describe what they see.	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigation.	Make systematic and careful observations.	Plan and carry out comparative and fair tests, making systematic and careful observations	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
	<b>Equipment and measurements</b>	Use senses and simple equipment to explore the world around them e.g. magnifying glasses,	Use simple, non-standard equipment and measurements in a practical task	Use simple equipment to take measurements, make observations and carry out simple tests.	Take accurate measurements using standard units.	Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.	Take measurements using a range of scientific equipment with increasing accuracy and precision.	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately.
	<b>Identifying and classifying</b>	Begin to sort and group items together e.g. small world animals by type, fruits and vegetable by type or colour.	Sort and group objects, materials and living things, with help, according to simple observational features.	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns.	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.	Use and begin to create simple keys.	Use and develop keys to identify, classify and describe living things and materials.	Identify and explain patterns seen in the natural environment.
	<b>Practical enquiry</b>	Use senses to explore the world around them and talk about what they notice and what else they could find out.	Follow instructions to complete a simple test individually or in a group.	Do things in the correct order when performing a simple test and begin to recognise when something is unfair	Discuss enquiry methods and describe a fair test.	Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.	Plan a range of science enquiries, including comparative and fair tests.	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
	<b>Reporting and recording findings</b>	Talk to an adult about what has been found out.	Begin to record simple data.	Gather data, record and talk about their findings, in a range of ways, using	Record their findings using scientific language and present in note form, writing frames,	Choose appropriate ways to record and present information,	Record data and results of increasing complexity using scientific diagrams, labels, classification	Choose the most effective approach to record and report results, linking to

				simple scientific vocabulary.	diagrams, tables and charts.	findings and conclusions for different audiences	keys, tables, bar and line graphs and models.	mathematical knowledge.
	<b>Drawing conclusions</b>	With support, begin to explain why some things happen in the world around them.	Explain, with help, what they think they have found out.	Use simple scientific language to explain what they have found out.	Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.	Use a simple mode of communication to justify their conclusions on a hypothesis.	Identify validity of conclusion and required improvement to methodology.
	<b>Analysing data</b>	Talk about what they have found out from information gathering, e.g. eye colour, favourite animal.	Use every day or simple scientific language to ask and/or answer a question on given data.	Identify simple patterns and/or relationships using simple comparative language.	Gather, record and use data in a variety of ways to answer a simple question.	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.
<b>Animals Including Humans</b>	<p>Know similarities and differences between animals, e.g.</p> <ul style="list-style-type: none"> <li>-adults and their young</li> <li>-body parts of animals</li> <li>-how animals move</li> <li>-sounds animals make</li> <li>-where animals live</li> </ul> <p>Begin to use language related to animals, e.g.</p> <ul style="list-style-type: none"> <li>-names of animals</li> <li>-body parts of animals</li> <li>-names of where they live</li> </ul> <p>Begin to group animals in different ways using small world.</p> <p>Begin to know ways to keep healthy and look after their own basic hygiene.</p>	<p><b>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates</b></p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets)</p> <p><b>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</b></p>	<p><b>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</b></p> <p><b>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</b></p>	<p><b>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</b></p> <p><b>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</b></p>	<p><b>Describe the simple functions of the basic parts of the digestive system in humans</b></p> <p><b>Identify the different types of teeth in humans and their simple functions</b></p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><b>Describe the changes as humans develop from birth to old age.</b></p> <p><b>Explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird</b></p>	<p><b>Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood</b></p> <p><b>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</b></p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	
<b>Materials</b>	<p>Know some similarities and differences between everyday materials using</p> <p>Begin to use language related to everyday materials.</p> <p>Begin to know how some materials change</p>	<p>Distinguish between an object and the material from which it is made</p> <p><b>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</b></p> <p><b>Describe the simple physical properties of a</b></p>	<p><b>Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard</b></p> <p><b>Find out how the shapes of solid objects made from some materials can be changed by</b></p>		<p><b>Compare and group materials together, according to whether they are solids, liquids or gases</b></p> <p><b>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which</b></p>	<p><b>Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</b></p>		

	-when heated, cooled, manipulated by hand or tools (e.g. dough, chocolate, water, fabric, paper)	<b>variety of everyday materials</b>  Compare and group together a variety of everyday materials on the basis of their simple physical properties	<b>squashing, bending, twisting and stretching.</b>		<b>this happens in degrees Celsius (°C)</b>  Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	<b>Understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</b>  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	
<b>Living Things</b>	Know about some similarities and differences between plants, based on their experiences.  Begin to use language related to plants and living things		<b>Explore and compare the differences between things that are living, dead, and things that have never been alive</b>  <b>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</b>  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  <b>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</b>  Recognise that environments can change and that this can sometimes pose dangers to living things.		<b>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</b>  Give reasons for classifying plants and animals based on specific characteristics.
<b>Plants</b>	Plant and care for growing plants.	Identify and name a variety of common plants, including garden	Observe and describe how seeds and bulbs grow into mature plants	<b>Identify and describe the functions of different parts of</b>		<b>Describe the life process of reproduction in some plants.</b>	

	Know a basic lifecycle of a plant.	plants, wild plants and trees, and those classified as deciduous and evergreen  <b>Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.</b>	<b>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</b>	<b>flowering plants: roots, stem, leaves and flowers</b>  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.			
<b>Light and Sound</b>	Explore and talk about light and sounds in their environment.			<b>Recognise that they need light in order to see things and that dark is the absence of light</b>  Notice that light is reflected from surfaces  Recognise that light from the sun can be dangerous and that there are ways to protect their eyes  <b>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</b>  Find patterns in the way that the size of shadows change.	<b>Identify how sounds are made, associating some of them with something vibrating</b>  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  Recognise that sounds get fainter as the distance from the sound source increases		Understand that light appears to travel in straight lines  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  <b>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</b>
<b>Forces</b>	Talk about forces they can feel -use words push and pull.			Compare how things move on different surfaces  <b>Compare and group together a variety of everyday materials on</b>	Identify common appliances that run on electricity  <b>Construct a simple series electrical circuit, identifying and naming</b>	<b>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</b>	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit

	<p>To explore and talk about forces applied to objects, e.g. -cars and ramps -playdough</p>			<p><b>the basis of whether they are attracted to a magnet, and identify some magnetic materials</b></p> <p><b>Describe magnets as having two poles</b></p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing</p>	<p><b>its basic parts, including cells, wires, bulbs, switches and buzzers</b></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</p> <p><b>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</b></p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p><b>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</b></p> <p>Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.</p>	<p><b>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</b></p> <p><b>Use recognised symbols when representing a simple circuit in a diagram.</b></p>
<p><b>Earth and Space</b></p>	<p>To know simple facts about the Earth and other planets.</p> <p>Talk about changes in weather and seasons, as they are observed and experienced.</p>	<p>Observe changes across the four seasons</p> <p><b>Observe and describe weather associated with the seasons and how day length varies.</b></p>		<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p><b>Recognise that soils are made from rocks and organic matter.</b></p>		<p><b>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</b></p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night.</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p><b>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</b></p>