

More detailed progress maps are available for each topic which identify cross topic teaching and are used to further deepen the children's working knowledge. Please speak to the Science Lead for further assistance.

Progress when Working Scientifically

Pupils should be taught to:

	Year 1/2	Year 3/4	Year 5/6
Planning	<ul style="list-style-type: none"> ask simple questions and recognise that they can be answered in different ways 	<ul style="list-style-type: none"> ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests 	<ul style="list-style-type: none"> plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Measuring & Recording	<ul style="list-style-type: none"> observe closely, using simple equipment perform simple tests gather and record data to help in answering questions 	<ul style="list-style-type: none"> make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables gather, record, classify and present data in a variety of ways to help in answering questions 	<ul style="list-style-type: none"> 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
Concluding	<ul style="list-style-type: none"> identify and classify use their observations and ideas to suggest answers to questions 	<ul style="list-style-type: none"> identify differences, similarities or changes related to simple scientific ideas and processes report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions use straightforward scientific evidence to answer questions or to support their findings 	<ul style="list-style-type: none"> identify scientific evidence that has been used to support or refute ideas or arguments. 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
Evaluating		<ul style="list-style-type: none"> use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 	<ul style="list-style-type: none"> use test results to make predictions to set up further comparative and fair tests

National Curriculum : Progression in Science

Pupils should be taught to:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	<ul style="list-style-type: none">identify and name a variety of common wild and garden plants, including deciduous and evergreen treesidentify and describe the basic structure of a variety of common flowering plants, including trees	<ul style="list-style-type: none">observe and describe how seeds and bulbs grow into mature plantsfind out and describe how plants need water, light and a suitable temperature to grow and stay healthy	<ul style="list-style-type: none">identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersexplore 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 plantinvestigate the way in which water is transported within plantsexplore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
Animals incl. Humans	<ul style="list-style-type: none">identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammalsidentify and name a variety of common animals that are carnivores, herbivores and omnivoresdescribe 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	<ul style="list-style-type: none">notice that animals, including humans, have offspring which grow into adultsfind out about and describe the basic needs of animals, including humans, for survival (water, food and air)describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	<ul style="list-style-type: none">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 eatidentify that humans and some other animals have skeletons and muscles for support, protection and movement	<ul style="list-style-type: none">describe the simple functions of the basic parts of the digestive system in humansidentify the different types of teeth in humans and their simple functionsconstruct and interpret a variety of food chains, identifying producers, predators and prey	<ul style="list-style-type: none">describe the changes as humans develop to old age	<ul style="list-style-type: none">identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and bloodrecognise the impact of diet, exercise, drugs and lifestyle on the way their bodies functiondescribe the ways in which nutrients and water are transported within animals, including humans
Living things & habitat		<ul style="list-style-type: none">explore and compare the difference between things that are living, dead, and things that have never been aliveidentify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each otheridentify and name a variety of plants and animals in their habitats, including micro-habitatsdescribe 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		<ul style="list-style-type: none">recognise that living things can be grouped in a variety of waysexplore and use classification keys to help group, identify and name a variety of living things in their local and wider environmentrecognise that environments can change and that this can sometimes pose dangers to living things	<ul style="list-style-type: none">describe the differences in the life cycles of a mammal, an amphibian, an insect and a birddescribe the life process of reproduction in some plants and animals	<ul style="list-style-type: none">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 animalsgive reasons for classifying plants and animals based on specific characteristics
Evol & Inher						<ul style="list-style-type: none">recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years agorecognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parentsidentify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
S/C	<ul style="list-style-type: none">observe changes across the four seasonsobserve and describe weather associated with the seasons and how day length varies					
Materials	Everyday Materials <ul style="list-style-type: none">distinguish between an object and the material from which it is madeidentify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rockdescribe the simple physical properties of a variety of everyday materialscompare and group together a variety of everyday materials on the basis of their simple physical properties	Uses of Everyday Materials <ul style="list-style-type: none">identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular usesfind out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Rocks <ul style="list-style-type: none">compare and group together different kinds of rocks on the basis of their appearance and simple physical propertiesdescribe in simple terms how fossils are formed when things that have lived are trapped within rockrecognise that soils are made from rocks and organic matter	States of Matter <ul style="list-style-type: none">compare and group materials together, according to whether they are solids, liquids or gasesobserve 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	Properties and changes of materials <ul style="list-style-type: none">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.Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.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.	
Electricity			<ul style="list-style-type: none">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.			<ul style="list-style-type: none">Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.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.Use recognised symbols when representing a simple circuit in a diagram.
Light			<ul style="list-style-type: none">recognise that they need light in order to see things and that the dark is the absence of lightnotice that light is reflected from surfacesrecognise that light from the sun can be dangerous and that there are ways to protect their eyesrecognise that shadows are formed when the light from a light source is blocked by a solid objectfind patterns in the way that the size of shadows changes			<ul style="list-style-type: none">recognise that light appears to travel in straight linesuse the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyeexplain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyesuse the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Sound				<ul style="list-style-type: none">identify how sounds are made, associating some of them with something vibratingrecognise 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 itfind patterns between the volume of a sound and the strength of the vibrations that produced itrecognise that sounds get fainter as the distance from the sound source increases	<ul style="list-style-type: none">	
Forces & Magnets			<ul style="list-style-type: none">compare how things move on different surfacesnotice that some forces need contact between two objects, but magnetic forces can act at a distanceobserve how magnets attract or repel each other and attract some materials and not otherscompare and group together a variety of everyday materials on the basis on whether they are attracted to a magnet, and identify some magnetic materialsdescribe magnets as having two polespredict whether two magnets will attract or repel each other, depending on which poles are facing		<ul style="list-style-type: none">explain that unsupported objects fall towards the Earth because of the force of gravity act-ing between the Earth and the falling objectidentify the effects of air resistance, water resistance and friction, that act between mov-ing surfacesrecognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	
Earth & Space					<ul style="list-style-type: none">describe the movement of the Earth, and other planets, relative to the Sundescribe the movement of the Moon relative to the Earthdescribe the Sun, Earth and Moon as approximately spherical bodiesuse the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	