



Science Progression Grid

National Curriculum		
Early Years Framework	National Curriculum Aims	
<p>ELG: The Natural World</p> <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of plants and animals. 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>ELG: Speaking</p> <ul style="list-style-type: none"> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. <p>ELG: The Natural World</p> <ul style="list-style-type: none"> Understand some important processes and changes in the natural world, including the seasons and changing states of matter. 	<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. 	
	Year 1 and Year 2	Year 3 and Year 4
	<p>The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.</p>	<p>The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.</p>



Subject Progression Grid- Knowledge Progression

Theme	EYFS	Year 1 and Year 2	Year 3 and Year 4
Seasonal Changes	ELG: The Natural World <ul style="list-style-type: none">- Understand some important processes and changes in the natural world, including the seasons.	<ul style="list-style-type: none">• Children observe changes across the four seasons• Children observe and describe weather associated with the seasons and how day length varies.	
Plants	ELG: The Natural World <ul style="list-style-type: none">- Explore the natural world around them, making observations and drawing pictures of plants.- 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.	<ul style="list-style-type: none">• Children identify and name a variety of common wild and garden plants, including deciduous and evergreen trees• Children identify and describe the basic structure of a variety of common flowering plants, including trees.• Children observe and describe how seeds and bulbs grow into mature plants• Children find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	<ul style="list-style-type: none">• Children identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers• Children 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• Children investigate the way in which water is transported within plants• Children explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

<p>Animals including humans</p>	<p>ELG: The Natural World</p> <ul style="list-style-type: none"> - Explore the natural world around them, making observations and drawing pictures of animals. 	<ul style="list-style-type: none"> • Children identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • Children 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) • Children identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • Children notice that animals, including humans, have offspring which grow into adults • Children find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • Children describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<ul style="list-style-type: none"> • Children 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 • Children identify that humans and some other animals have skeletons and muscles for support, protection and movement. • Children describe the simple functions of the basic parts of the digestive system in humans • Children identify the different types of teeth in humans and their simple functions • Children construct and interpret a variety of food chains, identifying producers, predators and prey.
<p>Living things & their habitats</p>		<ul style="list-style-type: none"> • Children explore and compare the differences between things that are living, dead, and things that have never been alive • Children 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 • Children identify and name a variety of plants and animals in their habitats, including microhabitats • Children 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. 	<ul style="list-style-type: none"> • Children recognise that living things can be grouped in a variety of ways • Children explore and use classification keys to help group, identify • Children name a variety of living things in their local and wider environment • Children recognise that environments can change and that this can sometimes pose dangers to living things.

<p>Everyday Materials & States of Matter</p>	<p>ELG: The Natural World</p> <ul style="list-style-type: none"> - Understand some important processes and changes in the natural world, including changing states of matter. 	<ul style="list-style-type: none"> • Children distinguish between an object and the material from which it is made • Children distinguish between an object and the material from which it is made • Children identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • Children describe the simple physical properties of a variety of everyday materials • Children compare and group together a variety of everyday materials on the basis of their simple physical properties. • Children identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Children find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> • Children compare and group materials together, according to whether they are solids, liquids or gases • Children 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) • Children identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
<p>Rocks (KS2)</p>			<ul style="list-style-type: none"> • Children compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Children describe in simple terms how fossils are formed when things that have lived are trapped within rock • Children recognise that soils are made from rocks and organic matter.
<p>Sound (KS2)</p>			<ul style="list-style-type: none"> • Children identify how sounds are made, associating some of them with something vibrating • Children recognise that vibrations from sounds travel through a medium to the ear • Children find patterns between the pitch of a sound and features of the object that produced it

			<ul style="list-style-type: none"> • Children find patterns between the volume of a sound and the strength of the vibrations that produced it • Children recognise that sounds get fainter as the distance from the sound source increases.
Light (KS2)			<ul style="list-style-type: none"> • Children recognise that they need light in order to see things and that dark is the absence of light • Children notice that light is reflected from surfaces • Children recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Children recognise that shadows are formed when the light from a light source is blocked by an opaque object • Children find patterns in the way that the size of shadows change.
Forces & Magnets (KS2)			<ul style="list-style-type: none"> • Children compare how things move on different surfaces • Children notice that some forces need contact between two objects, but magnetic forces can act at a distance • Children observe how magnets attract or repel each other and attract some materials and not others • Children compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Children describe magnets as having two poles • Children predict whether two magnets will attract or repel each other, depending on which poles are facing.

Electricity (KS2)

- Children identify common appliances that run on electricity
- Children construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- Children 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
- Children recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- Children recognise some common conductors and insulators, and associate metals with being good conductors.



Subject Progression Grid- Skills Progression

Theme	EYFS	Year 1 and Year 2	Year 3 and Year 4
Working Scientifically	<p>ELG: Listening, Attention and Understanding</p> <ul style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. <p>ELG: Fine motor skills</p> <ul style="list-style-type: none"> • Use a range of small tools, including scissors, paint brushes and cutlery. <p>ELG: Building Relationships</p> <ul style="list-style-type: none"> • Work and play cooperatively and take turns with others. 	<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions. 	<p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.