



Science Progression of Skills

Working Scientifically (Taught throughout each unit)		
Years 1 and 2	Years 3 and 4	Year 5 and 6
<i>Pupils will be taught to use the following practical scientific methods, processes and skills:</i>	<i>Pupils will be taught to use the following practical scientific methods, processes and skills:</i>	<i>Pupils will be taught to use the following practical scientific methods, processes and skills:</i>
Asking simple questions and recognising that they can be answered in different ways	Asking relevant questions and using different types of scientific enquiries to answer them	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
	Using straightforward scientific evidence to answer questions or to support their findings.	Identifying scientific evidence that has been used to support or refute ideas or arguments
Observing closely, using simple equipment and measurement	Making systematic and careful observations and where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Performing simple tests	Setting up simple practical enquiries, comparatives and fair tests.	Using test results to make predictions to set up further comparative and fair tests
Identifying and classifying	Identifying differences, similarities or changes related to simple scientific ideas and processes.	Recognise that scientific ideas change and develop over time
Using their observations and ideas to suggest answers to questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings
Gathering, recording and communicating data and findings to help in answering questions	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically
	Reporting on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presentations of results and conclusions	Reporting and presenting 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
Use scientific language and read and spell age-appropriate scientific vocabulary at a level consistent with their increasing word and spelling knowledge at Key Stage 1.	Use scientific language and read and spell age-appropriate scientific vocabulary at a level consistent with their increasing word and spelling knowledge	Pupils should read, spell and pronounce scientific vocabulary correctly

Animals, including humans					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> ▪ Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 	<ul style="list-style-type: none"> ▪ Notice that animals, including humans, have offspring which grow into adults ▪ Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) 	<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 eat 	<ul style="list-style-type: none"> ▪ Construct and interpret a variety of food chains, identifying producers, predators and prey 		<ul style="list-style-type: none"> • Describe the ways in which nutrients and water are transported within animals, including humans
<ul style="list-style-type: none"> ▪ Identify and name a variety of common animals that are carnivores, herbivores and omnivores 					
<ul style="list-style-type: none"> ▪ Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 					
<ul style="list-style-type: none"> ▪ 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"> ▪ 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 humans and some 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 humans. • Identify the different types of teeth in humans and their simple functions 	<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 blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

Living things and habitats

Year 2	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> ▪ Explore and compare the differences between things that are living, dead, and things that have never been alive 	<ul style="list-style-type: none"> ▪ Recognise that living things (including those in the locality) can be grouped in a variety of ways 	<ul style="list-style-type: none"> ▪ Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird 	<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 animals
<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment 	<ul style="list-style-type: none"> ▪ Describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> ▪ Give reasons for classifying plants and animals based on specific characteristics
<ul style="list-style-type: none"> ▪ Identify and name a variety of plants and animals in their habitats, including micro-habitats 	<ul style="list-style-type: none"> ▪ Recognise that environments can change and that this can sometimes pose dangers to living things 		
<ul style="list-style-type: none"> ▪ Describe how animals obtain their food from plants and other animals, using the ideas of a simple food chain, and identify and name different sources of food. 			

Plants		
Year 1	Year 2	Year 3
<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants 	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
<ul style="list-style-type: none"> Identify and describe the basic structure of a variety of common flowering plants, including trees 	<ul style="list-style-type: none"> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 	<ul style="list-style-type: none"> 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
		<ul style="list-style-type: none"> Investigate the way in which water is transported within plants
		<ul style="list-style-type: none"> Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Everyday materials		
Year 1	Year 2	Year 5 (Properties and Changes of Materials)
<ul style="list-style-type: none"> ▪ Distinguish between an object and the material from which it is made 	<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 uses 	<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
<ul style="list-style-type: none"> ▪ Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 	<ul style="list-style-type: none"> ▪ 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"> ▪ Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
<ul style="list-style-type: none"> ▪ Describe the simple physical properties of a variety of everyday materials 		<ul style="list-style-type: none"> ▪ Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
<ul style="list-style-type: none"> ▪ Compare and group together a variety of everyday materials on the basis of their simple physical properties 		<ul style="list-style-type: none"> ▪ Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
<ul style="list-style-type: none"> ▪ 		<ul style="list-style-type: none"> ▪ Demonstrate that dissolving, mixing and changes of state are reversible changes.
<ul style="list-style-type: none"> ▪ 		<ul style="list-style-type: none"> ▪ 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

Forces and Magnets	
Year 3	Year 5
<ul style="list-style-type: none"> Compare how things move on different surfaces 	<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
<ul style="list-style-type: none"> Notice that some forces need contact between two objects, but magnetic forces can act at a distance 	<ul style="list-style-type: none"> Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
<ul style="list-style-type: none"> Observe how magnets attract or repel each other and attract some materials and not others 	<ul style="list-style-type: none"> Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect
<ul style="list-style-type: none"> 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 	
<ul style="list-style-type: none"> Describe magnets as having two pole 	
<ul style="list-style-type: none"> Predict whether two magnets will attract or repel each other, depending on which poles are facing 	

Electricity	
Year 4	Year 6
<ul style="list-style-type: none"> Identify common appliances that run on electricity 	<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
<ul style="list-style-type: none"> Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer 	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Identify whether or not a lamp will light in a simple series circuit/ 	<ul style="list-style-type: none"> Use recognised symbols when representing a simple circuit in a diagram
<ul style="list-style-type: none"> Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit 	
<ul style="list-style-type: none"> Recognise some common conductors and insulators, and associate metals with being good conductors 	

Light	
Year 3	Year 6
<ul style="list-style-type: none"> ▪ Recognise that they need light in order to see things and that dark is the absence of light. 	<ul style="list-style-type: none"> ▪ Recognise that light appears to travel in straight lines.
<ul style="list-style-type: none"> ▪ Notice that light is reflected from some surfaces. 	<ul style="list-style-type: none"> ▪ 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.
<ul style="list-style-type: none"> ▪ Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. 	<ul style="list-style-type: none"> ▪ 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.
<ul style="list-style-type: none"> ▪ Recognise that shadows are formed when the light from a light source is blocked by a solid object. 	<ul style="list-style-type: none"> ▪ Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
<ul style="list-style-type: none"> ▪ Find patterns in the way the size of shadows change. 	

Evolution and inheritance
Year 6
<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 ago
<ul style="list-style-type: none"> ▪ Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
<ul style="list-style-type: none"> ▪ Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Earth and Space

Year 5

- 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

States of Matter

Year 4

- Explore a variety of everyday materials and develop simple descriptions of the 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

Sound

Year 4

- 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

Rocks

Year 3

- Compare and group together different kinds of rocks (including those in the locality) on the basis of appearance and simple physical properties
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock
- Recognise that soils are made from rocks and organic matter

Seasonal Changes
Year 1
▪ Observe changes across the four seasons
▪ Observe and describe weather associated with the seasons and how day length varies