Science Progression of Skills

	EYFS	KS1		KS2			
	Reception	Year 1	Year 2	Year3	Year 4	Year 5	Year 6
Working Scientifically		- Ask simple questions - Observe closely using simple equipment e.g. egg timers, magnifying glasses - Perform simple tests - Identify, classify and group - Use observations and ideas to suggest answers to questions - Gather and record data to help answer questions - Compare and contrast using first-hand experiences, videos and photographs	- Ask simple questions and recognise they can be answered in different ways. - Observe closely using simple equipment e.g. egg timers, magnifying glasses - Perform simple tests - Identify, classify and group using charts - Use observations and ideas to suggest answers to questions - Gather and record data with some accuracy - Compare and contrast using first-hand experiences, videos and photographs including comparative tests	- Ask relevant questions and use different types of scientific enquires 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 answer questions. - Record findings using simple scientific language, drawings, labelled diagrams, displays or presentations of results and conclusions. - Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. - Identify differences, similarities or changes related to simple scientific ideas and processes. - Use straightforward scientific evidence to answer questions to support findings.		- Plan different types of scientific enquiries to answer 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, casual relationships and explanations of and a degree of trust in results, in oral and written forms such as display other presentations - Identify scientific evidence that has been used to support or refute ideas or arguments	

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 (leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem) - Use the local environment to explore plants - Observe the growth of plants and vegetables they have planted over time.	- Observe and describe how seeds and bulbs grow into maturing plants. - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. - Introduce the requirements of plants for germination, growth and survival, as well as reproduction process and growth in plants	- Identify and describe the functions of different parts of the 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. **Please note: pupils can be introduced to the idea that plants can make their own food, but at**		-	

				this stage they do not need to understand how this happens.			
Animals including Humans		- 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 (as above, including pets) - Understand how to take care of animals in our local environment. - Identify, name, draw and label the basic parts of the human body (head, neck, arms, elbows, legs, knees, face.	- Notice that animals, including humans, have offspring which grow into adults - Introduce the process of reproduction and growth in animals **The focus should be on growth. Pupils should not be expected to understand how reproduction occurs (e.g. egg, chick, chicken / baby, toddler, child, teenager, adult)** - Find out about and describe the basic needs of animals, including	- Identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their own food; they get nutrition from what they eat. - Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	- 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 to 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

		Ears, eyes, hair, mouth, teeth) and say which part of the body is associated with each sense.	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				
Everyday Materials / Properties and changes of materials		- Distinguish between an object and the material from which it is made - Identify and name a variety of everyday materials e.g; wood, plastic, glass, metal, water, rock (plus brick, paper, fabrics, elastic, foil) - Describe the simple physical properties of materials (hard, soft, stretchy, stiff, shiny, dull,	- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how shapes of solid objects can be changed by squashing, bending, twisting and stretching. - Research people who have			- 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	

		rough, smooth, bendy, not bendy, waterproof, not waterproof, absorbent, not absorbent, opaque, transparent) - Compare and group materials on the basis of their simple physical properties. - Perform simple tests to explore questions such as 'what is the best material for an umbrella / bookshelf?	developed useful new materials e.g. John Dunlop, Charles Macintosh, John McAdam			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 **Note: pupils are not required to make quantitative measurements about conductivity and insulation at this stage. It is sufficient for them to observe that some conductors will produce a brighter bulb in a circuit than others and that some materials will feel hotter than others when a heat source is placed against them. Safety guidelines should be followed when burning materials**	
Seasonal Changes		- Observe changes across the four seasons - Observe and describe weather associated with the seasons and					

		how the day length varies. **It is not safe for pupils to look directly at the Sun, even when wearing dark glasses.**					
Living things and their habitats			- Explore and compare the differences between things that are living, dead and have never been alive - Identify that most living things live in habitats to which they are suited - Compare habitats such as local environment, seashore, woodland, ocean and rainforest - Describe how habitats provide the basic needs of different kinds of animals and plants and how they depend on each other - Identify and name a variety of		- 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 to living things **Note: Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants (ferns and mosses).**	- 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	- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities ad differences, including micro-organisms, plants and animals - Give reasons for classifying plants and animals based on specific characteristics

			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 (grass, cow, human) and identify and name different sources of food				
Rocks				- Compare and group together different kinds of rocks on the basis of their appearance and simple physical features. - Describe in simple terms how fossils are formed when things that have lived are trapped within a rock. - Recognise that soils are made from rocks and organic matter. - Explore different kinds of			

				rocks and soils in the local environment			
Light				- Recognise that they need light in order to see things and that dark is in the absence of light. - 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. - Recognise that shadows are formed when the light from a light source is blocked by an opaque object. - Find patterns in the way that the size of shadows change. - Explore when light reflects off a mirror. - Look for, and measure, shadows. Find out how they are formed and what			- Recognise that light appear 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 object that cast them

				causes them to change. **Note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.**			
Forces and Magnets				- Compare how things move on different surfaces. - Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. - Observe how magnets attract or repel each other and attract some materials and not others. - 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.		- 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	

				- Describe magnets as having 2 poles. - Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. - Observe that magnetic forces can act without direct contact, unlike most forces.			
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 - Identify the part played by evaporation and		

					condensation in the water cycle and associate the rate of evaporation with temperature **Note: Teachers should avoid using materials with chemical change i.e. through baking or burning**		
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 sound and the strength of the vibrations that produced it		

					- Recognise that sounds get fainter as the distance from the sound source increases		
Electricity					- Identify common appliances that run on electricity - Construct a simple series electrical circuit, identifying and naming 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 not a lamp lights in a simple series circuit		- 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 **Note: Pupils are expected to learn only about series circuits, not parallel circuits. Pupils should be**

					- Recognise some common conductors and insulators, and associate metals with good conductors **Note: Pupils might use the terms current and voltage, but these should not be introduced or defined formally at this stage. Pupils should be taught about precautions for working safely with electricity**		**taught to take necessary precautions for working safely with electricity**
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 **Note: Pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses**	
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 adaption may lead to evolution **Note: At this stage, pupils are not expected to understand how genes and chromosomes work**