The King's School Science Skills and Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	Explore the natural world through outdoor play, nature hunts and gardening Make observations and draw plants they come across in their environment thinking about what they look and feel like	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.	observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	identify and describe the functions of different parts of 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.		describe the life process of reproduction in some plants and animals.	
Animals	To explore the natural world around them through outdoor play, minibeast hunts, bug hotel investigation, bird watching To describe what the creatures they observe look, feel and sound like To begin thinking about different types of animals and describing their characteristics	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 (fish, amphibians, reptiles, birds and mammals, including pets)	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)	identify that animals need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat	construct and interpret a variety of food chains, identifying producers, predators and prey.	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.	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
Living things and their habitats	To show care and concern for living things and the environment. To begin exploring where different		explore and compare the differences between things that are living, dead, and things that have never been alive		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		describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences,

Reproduction & classification	animals might live e.g. sea, land, etc. To sort animals by different characteristics e.g. number of legs, furry/not furry		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 identify and name a variety of plants and animals in their habitats, including microhabitats 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.		things in their local and wider environment recognise that environments can change and that this can sometimes pose dangers to living things.		including microorganisms, plants and animals give reasons for classifying plants and animals based on specific characteristics. identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Humans	To know and talk about the different factors that support their overall health and wellbeing: Regular physical activity Healthy eating Toothbrushing Sensible amounts of 'screen time' Having a good sleep routine Being a safe pedestrian Name different parts of the body	identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 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)	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 identify the different types of teeth in humans and their simple functions	describe the simple functions of the basic parts of the digestive system in humans identify that humans and some other animals have skeletons and muscles for support	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.
Rocks & Soils				compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock			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 soils are made from rocks and organic matter.			
Light & Sound	**To** explore instruments and the different sounds objects make			recognise that they need light in order to see things and that dark is 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 a solid object find patterns in the way that the size of shadows change	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 recognise that sounds get fainter as the distance from the sound source increases		recognise that light appears 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 objects that cast them associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
Forces & Magnets	Introduce the concept of gravity when learning about Space To explore magnets and begin sorting magnetic and non-magnetic materials through play Observe the effects of air resistance and design when flying paper aeroplanes	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		compare how things move on different surfaces notice that some forces need contact between two objects, but magnetic forces can act at a distance observe how magnets attract or repel each other and attract some materials and not others		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	

				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 describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing			
Earth & Space	Recognise some environments are different to theirs and begin comparing and contrasting different places					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 explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	
Electricity	Understand the use of different household				recognise common appliances that run on electricity.		associate the brightness of a lamp or the volume of a buzzer with the number and

	appliances and how to use them safely Observe the effects some technology has e.g. oven, toaster, etc. Use technology such as cameras, torches and BeeBots purposefully, discussing how they work				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		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
Materials & Properties and changes & States of Matter	Understand the effect of changing seasons ont eh natural world around them Experiment with the processes of freezing and melting and discuss what happens to liquids/solids and why Investigate materials that float and sink	distinguish between an object and the material from which it is made compare and group together a variety of everyday materials on the basis of their simple physical properties describe the simple physical properties of a variety of everyday materials identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses		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	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	
Scientists and inventors	Mae Jemison (*astronaut)*	Jane Goodall 1934-	Charles Macintosh 1766-1843	Mary Anning 1799-1847	Michael Faraday 1791 - 1867	Galileo Galilei 1564-1642 Maggie Aderin-Pocock 1968 -	Charles Darwin 1809 - 1882
Links		Apes	Materials	Fossils	Electricity	Light space and time	Evolution
Working Scientifically Skills	Show curiosity about objects, events and people Questions why things happen	Explore the world around them and raise their own simple questions		Raise their own relevant questions about the world around them		Use their science experiences to explore ideas and raise different kinds of questions	
	Engage in open-ended activity	Experience different types of science enquiries, including practical activities		Should be given a range of scientific experiences including different types of science enquiries to answer questions		Talk about how scientific ideas have developed over time	
	Take a risk, engage in new experiences and learn by trial and error	Begin to recognise different ways in which they might answer scientific questions		Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions		Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why	
	Find ways to solve problems / find new ways to do things / test their ideas	Carry out simple tests		Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up		Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions	
	Develop ideas of grouping, sequences, cause and effect Know about similarities and differences in relation to places, objects, materials and living things	Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)		Talk about criteria for grouping, sorting and classifying; and use simple keys		Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.	

	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world	Ask people questions and use simple secondary sources to find answers	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
	Closely observes what animals, people and vehicles do	Observe closely using simple equipment with help, observe changes over time	Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used	Make their own decisions about what observations to make, what measurements to use and how long to make them for.
	Use senses to explore the world around them	With guidance, they should begin to notice patterns and relationships	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas
	Choose the resources they need for their chosen activities *ELG* Handle equipment and tools effectively	Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data	Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers/ thermometers appropriately	Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.
	Create simple representations of events, people and objects	Record simple data	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data	Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	Answer how and why questions about their experiences Make observations of animals and plants and explain why some things occur, and talk about changes	Use their observations and ideas to suggest answers to questions. Talk about what they have found out and how they found it out	With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions	Identify scientific evidence that has been used to support or refute ideas or arguments
	Develop their own narrative and explanations by connecting ideas or events Builds up vocabulary that reflects the breadth of their experience	With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results
			With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.	Use their results to make predictions and identify when further observations, comparative and fair tests might be needed
				Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.