Working Scientifically – Progression of skills

	FS1	FS2	Year 1	Year 2
Posing questions	• Demonstrate curiosity about the world around them.	• Demonstrate curiosity about the world and objects around them.	• Exploring the world around them and raising their own simple questions. • Recognising there are different types of enquiry (ways to answer a question). • Responding to suggestions of how to answer their questions.	
Planning	• Respond to prompts to say what happened to objects, living things or events,	• With support, perform simple tests to explore a question or an idea suggested to them,	• Beginning to recognise whether a test is fair. • With support, deciding if suggested observations are suitable. • Ordering a simple method.	
Predicting	• With support and prompting talk about what they think might happen based on their own experience,	• With support and prompting talk about what they think might happen based on their own experience,	• Suggesting what might happen, often justifying with personal experience.	
Observing (qualitative data)	• With support, using their senses to explore the world around them,	• With support, using their senses to explore the world around them,	• Using their senses to describe, in simple terms, what they notice or what has changed.	
Measuring (quantitative data)	• Use simple equipment to explore the world around them e.g. .magnifying glasses and magnets	• Use simple equipment to explore the world around them e.g. .magnifying glasses and magnets • Beginning to use non-standard units of measurement,	• Using non-standard units to measure and compare. • Beginning to use standard units to measure and compare. • Beginning to use simple measuring equipment to make approximate measurements. • Reading simple numbered scales.	
Researching	• Adult led research	• Adult led research	• Gathering specific information from one simplified, specified source.	
Recording (diagrams)	• Contributing to a drawing and photo evidence	• Drawings, photo evidence and labels with support	• Drawing and labelling simple diagrams.	

Recording (tables)	• Practical investigation, verbal feedback	• Practical investigation, adult recording	• Using a prepared table to record results including:
			  ● Numbers.
			  ● Simple observations.
			  ● Tally frequency.	

Grouping and classifying	• With support, grouping based on visible characteristics.	• Grouping based on visible characteristics.	• Grouping based on visible characteristics. • Organising questions to create a simple classification key.
Graphing	•	•	• Representing data using pictograms and block charts.
Analysing and drawing conclusions	• With support, talk about what they have found out or what they think might happen next	• With support, talk about what they have found out or what they think might happen next/change based on their own experience.	• Using their results to answer simple questions. • Beginning to recognise when results or observations do not match their predictions.
Evaluating	• With support, explain why somethings occur.	• With support, explain why somethings occur.	• Beginning to recognise whether a test is fair or not.

Progression of knowledge

		FS1	FS2	Year 1	Year 2
Animals including humans	Animal Growth	• To begin to understand the need to respect and care for all living things. • To understand the key features of the life cycle of an animal • To begin to understand healthy choices about food, drink, activity and tooth brushing.	• To know the features of some animals, make observations, and draw pictures of animals. • To know the names of some animals and use the appropriate language to describe what they look, hear and feel like. • To understand some important processes and changes in the natural world around them, including the seasons and the effect they have on the natural world • To understand the key features of the life cycle of an animal and use appropriate to describe them. • To know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - tooth brushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian	• To know a variety of common animals (including fish, amphibians, reptiles, birds and mammals).	• To understand how living things change, and that animals have offspring that grow into adults. • To know which offspring comes from which parent animal. • To know the stages in some animal life cycles.
	Animal Structure and function			• To know the main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns/tusks, shell) • To know key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth). • To know the five main senses: sight, smell, hearing, taste and touch. • To know that eyes are used for sight, the nose is used for smell, ears are used for hearing, the tongue and mouth are used for taste and the skin is used for touch.	
	Health and nutrition			• To know that a carnivore is an animal that eats other animals and to give some examples. • To know that a herbivore is an animal that eats only plants and to give some examples. • To know that an omnivore is an animal that eats both animals and plants, and to give some examples.	• To know that animals, including humans, need water, food and air to survive. • To understand the importance of exercise, a balanced diet and hygiene for humans.

Living things and their habitats	Characteristics of living things	• To begin to understand the need to respect and care for the natural environment and all living things.	• To know some environments that are different to the one in which they live. • To know some similarities and differences between the natural world around them and contrasting environments.		• To begin to understand some of the life processes, including movement, reproduction, sensitivity, growth, excretion and nutrition. • To know the difference between things that are living, dead, and things that have never been alive, using some of the life processes.
	Variation and inheritance				• To know a variety of plants and animals and describe some differences.
	Habitats and interdependence				• To name a variety of habitats, including woodland, ocean, rainforest and seashore. • To know that a habitat is the environment where an animal or plant lives/ grows, because it provides what they need to survive. • To know that a micro-habitat is a very small habitat (e.g. stones, logs and leaf litter). • To know that living things depend upon each other (e.g. for food, shelter.) • To understand that a food chain can be used to show how animals obtain food from eating either plants and/or other animals.

Everyday Materials	Identifying and naming	• To know to use all their senses in hands-on exploration of natural materials. • To know to describe collections of materials with similar and/or different properties. • To know how things work and talk about different forces they can feel • To know about the differences between materials and changes they notice.	• To know how to describe what materials they see, hear, and feel. • To identify and describe some natural processes and changes including freezing and melting, floating and sinking, sound, light and creating shadows, and magnets.	• To know that objects are items or things. • To know that a material is what an object is made from. • To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.	
	Properties and uses			• To know that property refers to how a material can be described. • To describe the physical properties of a variety of everyday materials. • To understand that materials can be grouped based on their physical properties.	• To know why objects are made from particular materials and to give examples of their suitability. • To know that one material can be used for a range of purposes (and to give examples.) • To know that different materials can be used for the same purpose (and to give examples.) • To know why certain materials are unsuitable for particular objects.
	Change				• To know that a force must be applied to change the shape of a solid object. • To know that solid objects can be squashed, bent, twisted or stretched. • To know that different solid objects may take a different amount of force to change shape.

Plants	Plant structure and function	• To begin to understand the need to respect and care for the natural environment and all living things. • To know how to plant seeds and care for growing plants. • To understand the key features of the life cycle of a plant.	• To know how to explore the natural world and how to care for it. • To know the features of some plants, make observations, and draw pictures of plants. • To know the names of some plants and use the appropriate language to describe what they look, smell and feel like.	• To know a variety of common plants, and how they differ. • To know that deciduous trees lose their leaves seasonally, but evergreen trees do not. • To know the basic structure (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees.	
	Plant growth and needs			• To begin to understand how plants grow and change over time.	• To know that seeds and bulbs grow into seedlings by producing roots and shoots. • To know that seedlings grow into mature plants by developing parts, that may include stems/trunks, leaves, flowers and fruits. • To know that seeds need water to germinate. • To know that plants need water, light and a suitable temperature for growth and health.
Seasonal changes	Key facts	• To know how to describe what they see, using a wide vocabulary whilst they are outside.	• To know how to describe what they see, hear and feel while they are outside. • To understand the effect of changing seasons on the natural world around them. • To understand some important processes and changes in the natural world around them, including the seasons	• To know the name and order of the four seasons; spring, summer, autumn and winter. • To know that it is unsafe to look directly at the Sun.	
	Forces in motion			• To know weather associated with the four seasons and how it changes (in the UK). • To understand that day length varies across the four seasons, with fewer daylight hours in the winter and more in the summer.	

Science in action				• To know about famous scientists throughout history. • To know about a range of jobs and careers that use scientific knowledge and methods. • To know about the work of modern day scientists. • To know about science in the news and recent discoveries. • To explore spiritual, moral, social and cultural links with Science.

Vocabulary

	FS1	FS2	Year 1	Year 2
Animals including humans	Head, eyes, nose, mouth, ears, hands, feet, arm, leg, fingers, toes, animal Animal names – farm animals, pets, wild animals e.g. lion, tiger, elephant Lifecycle – caterpillar, cocoon, butterfly	Human, animal, fish, bird, head, ear, eye, mouth, nose, face, hair, leg, knee, arm, elbow, back, toes, hands, fingers, Animal names – farm animals including babies, wild animals – tiger, lion, elephant, , sea creatures – fish, shark, whale,	body, senses, hearing, sight, smell, taste, touch, sweet, sour, bitter, salty, sensitive, blind, loud, quiet, volume **Animals** – Coming Soon	Coming Soon
Living things and their habitats	Animal habitats - Garden, wood, sea Food, water, grow	Animals habitats - Garden, wood, desert, jungle, polar, sea,		**Habitats** Alive, camouflage. Carnivore, classify, coastal, dead, depend, diet, energy, excretion, food chain, growth, habitat, herbivore, life process, mammal, movement, nutrition, ocean, omnivore, predator, prey, producer, rainforest, reproduction, sensitivity, shelter, woodland

				<u>Microhabitats</u> Botanist, camouflage, characteristics, classification key, classify, comparative/fair test, conclusion, criteria, data, food chain, identify, invertebrate, method, microhabitat, minibeast, research, results, species, survey, tally, test
Everyday Materials	Object, paper, plastic, fabric, metal, brick, glass, wood, hard, soft, push, pull, float, sink, melt	Object, material, float, sink, melting, freezing, light, dark, magnet, attract, repel, loud, quiet, push, pull, soft, shiny, rough, smooth	group, material, object, fabric, glass, metal, plastic, rock, wood, property, absorbent, opaque, transparent, waterproof, tough	Bend, block graph, elastic ,fabric, flexible, glass, material, metal, object, plastic, property, pull, push, record, rock, squash, stretch, suitable, twist, wood
Plants	Tree, leaf, flower, seed, stem	Grow, lifecycle, roots, stem, buds, leaves, flower, bulb, water, light, soil, compost, tree, trunk, branch	Coming Soon	Coming Soon
Seasonal changes	Sun, rain, wind, hot, cold, day, night,	Spring, summer, autumn, winter, dark, light, day, night	Weather, symbol, season, spring, summer, autumn, winter, deciduous tree, evergreen tree, temperature, sunrise, sunset, thermometer	