Science: Progression of knowledge and skills.

Plants

		Nursery	Reception: Our beautiful planet	Year 1: Introduction to plants	Year 2: Plant growth
Scientific knowledge and understanding	**Plant structure and function**		To know the name for the basic plant parts (leaves, flowers, stem and roots.) To know the names of some familiar flowering plants (e.g. daisy, rose, sunflower, daffodil).	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), fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees.	
	Plant growth and needs	To know plants are alive. To know that seeds need water to grow.		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 such as roots, stems, leaves and flowers. To know that seeds need water and warmth to germinate. To know that plants need water, light and a suitable temperature for growth and health.
	Plant life cycle	To know that seeds grow into plants if taken care of.			

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Animals, including humans

		Nursery	Reception: Animal adventures	Year 1: Sensitive bodies and Comparing animals	Year 2: Lifecycles and health
Scientific knowledge and understanding	**Animal growth**	To know the names of familiar animals (e.g. farm animals, pets and animals seen in storybooks.)		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 (number of legs, wings, fur, tail). To know that animals, including humans use their senses to explore the world.	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 the skin is used for touch, the tongue is used for taste, the nose is used for smell, the eyes are used for sight and the ears are used for hearing.	
	Health and nutrition	To know that animals need food.		To know that a carnivore is an animal that eats other animals and give some examples. To know that a herbivore is an animal that eats only plants and 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.

Science: Progression of knowledge and skills.

Living things and their habitats

		Nursery	**Reception: Animal adventures**	**Year 1:**	**Year 2: Habitats and Microhabitats**
Scientific knowledge and understanding	**Characteristics of living things**	To know that animals and plants move, grow and feed.	To know that animals and plants move, grow and feed. To know the difference between things that are living and things that are non-living. To know that some animals hibernate or store food in winter.		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 the names of familiar animals (e.g. farm animals, pets and animals seen in storybooks.)	To know the names of familiar animals (e.g. farm animals, pets and animals seen in storybooks.) To know the names of some familiar flowering plants (e.g. daisy, rose, sunflower, daffodil).		To know a variety of plants and animals and describe some differences.
	Habitats and interdependence	To know that plants and animals live in a range of different places.	To know that plants and animals live in a range of different places. To name some different places where animals live on the school site.		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.

Science: Progression of knowledge and skills.

Materials

		Nursery	Reception: I am a scientist	Year 1: Everyday materials	Year 2: Uses of everyday materials
Scientific knowledge and understanding	**Identifying and naming**			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 objects float or sink.		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 some objects move when pushed or pulled. To know some objects freeze or melt.			To know that a push or pull 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.

Energy

Science: Progression of knowledge and skills.

		Nursery	Reception: I am a scientist	Year 1:	Year 2:
Scientific knowledge and understanding	**Sources**	To identify devices that use electricity and battery.	To know day is light because the sun is in the sky. To know night is dark because the sun is not in the sky.		
	Transfer	To create simple circuits. To know that shadows are created when something blocks the light.	To know that shadows are created when something blocks the light.		
	Factors affecting energy		To know about differences in sounds.		

Forces, Earth and space

		Nursery	Reception: Changing seasons	Year 1: Seasonal changes	Year 2:

Science: Progression of knowledge and skills.

Scientific knowledge and understanding	**Key facts**	To know that some trees change in the four seasons.	To know that some trees change in the four seasons. To know some signs of each season (leaves on the ground, cold weather, daffodils growing and sunny weather.) To know that some animals hibernate or store food in winter.	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 that the weather changes throughout the year.	To know that the weather changes throughout the year. To know and compare weather types (rain, sun, snow, wind).	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.	
	Factors affecting forces				

Working Scientifically

	Nursery	**Reception**	**Year 1**	**Year 2**

Science: Progression of knowledge and skills.

Posing questions	Asking questions about the natural world with support		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 on how to answer questions.	
Planning	Beginning to share ideas and suggestions, when working practically.		Beginning to recognise whether a test is fair. Deciding if suggested observations are suitable, with support. Ordering a simple method.	
Predicting	Beginning to make guesses about what might happen.		Suggesting what might happen, often justifying with personal experience.	
Observing (qualitative data)	Commenting on what they see and hear in the natural world.		Using their senses to describe, in simple terms, what they notice or what has changed.	
Measuring (quantitative data)			Using non-standard units to measure and compare. Beginning to use standard units and read simple scales to measure and compare. Beginning to use simple measuring equipment to make approximate measurements.	
Researching	Recognising that information can be found online and in books.		Gathering specific information from one simplified, specified source.	
Recording (diagrams)		Drawing and labelling pictures of plants and animals.	Drawing and labelling simple diagrams.	
Recording (tables)		Recognising that tables can be used to record information.	Using a prepared table to record results including: ● Numbers. ● Simple observations. ● Tally frequency.	
Grouping and classifying	Grouping objects, plants and animals with support.		Grouping based on visible characteristics. Organising questions to create a simple classification key.	
Graphing			Representing data using pictograms and block graphs.	
Analysing and drawing conclusions			Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.	
Evaluating				

Science in Action

Nursery	**Reception**	**Year 1**	**Year 2**

Science: Progression of knowledge and skills.

To know some different job roles.	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 know there are spiritual, moral, social and cultural links with Science.