Curriculum Long Term Plan
Science

	Autumn	Spring	Summer
Nursery	Exploring loud and quiet sounds Use all of their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Use pairs of words to describe what they see, taste, smell and feel e.g. shiny stone, crunchy leaf, smelly cheese. To know their own name and distinguish their own photograph from others', to know how old they are and say what they like/don't like.	Spring: changes we see Talk about the differences between materials, objects, living things and familiar people. To notice changes Show an interest in different occupations. Explore how things work and different forces. To describe some of their own physical features e.g. hair and skin colour. Continue developing positive attitudes about the differences between people. Begin to understand the need to respect and care for the natural environment and all living things.	Dinosaurs & Fossils Begin to make sense of their own life-story and family make up eg who is the oldest. Understand the key features of the life cycle of a plant and an animal. Plant seeds and care for growing plants. Use what they have noticed about how things work to achieve an end e.g. noticing that the cars need a steeper ramp to roll down without help. Know that there are different countries in the world and talk about the differences.
Reception	Humans, Sound, Seasonal Changes Talk about members of their immediate family and community	Earth & Space, Materials, Seasonal Changes, Plants	Animals, living things, Seasonal Changes Draw information from a simple map

	Name and describe people who are familiar to them. Comment on images of familiar situations in the past. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.	Compare and contrast characters from stories, including figures from the past. Explore the natural world around them Understand the effect of changing seasons on the natural world around them.	Understand that some places are special to members of their community. Recognise some similarities and differences between life in this country and life in other countries. Understand the effect of changing seasons on the natural world around them.
Year 1	Materials **Autumn 1** **Everyday Materials** Identifying the difference between objects and materials, children explore their surroundings to find examples of each. They work scientifically by planning tests, making observations and recording data. Pupils use results to answer questions and sort and group materials by their properties. **Key End Points:** **By the end of this unit children will be able to:** • To know that objects are items or things.	**Animals, including humans** **Spring 1** **Sensitive bodies (6 lessons)** Familiarising themselves with the basic parts of the human body. Investigate our senses through stimulating experiences that highlight how we interact with the world around us. Develop an understanding of the importance of our senses and how science can support those who have lost sensory function. **Key End Points:** **By the end of this unit children will be able to:** • Talk about and describe their body.	**Plants** **Summer 1** **Introduction to plants** Identifying the key features of a plant, children describe important structures and make comparisons between different plants. Pupils use investigative skills to record the growth of a plant over time and begin to reflect on factors that will affect its development. They begin to explore how plants are used by humans and grow their own herb garden. **Key End Points:** **By the end of this unit children will be able to:**

	• 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. • 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. **Forces, Earth and space** **Autumn 2** **Seasonal changes** Reflecting on their own experiences, children learn about the four seasons and the weather associated with each. Pupils explore how seasonal changes affect trees, daylight hours and our choices about outfits. They plan and carry out their own weather reports, considering the knowledge required for this job. **Key End Points: By the end of this unit children will be able to:** • Name the seasons and the time of year associated with them.	• Talk about how they are the same as and different from others e.g. physical appearance, things you things you believe, how we do things etc. • Talk about their senses and how they use them everyday life. • Talk about how they've changed during the year • Measure themselves over the year and compare others **Animals, including humans** **Spring 2** **Comparing animals** Studying both local and global animals, children recognise common features and use this information to make comparisons and begin to classify animals. Pupils collect data by surveying class pets, to then explore ways in which this information can be recorded. They develop their understanding of classification by comparing the dietary habits of different animals and use their knowledge and imaginations to take on the role of a zookeeper.	• 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. **Making connections** **Summer 2** Bringing together pupils' learning from multiple Science units, helping them to make connections between the key concepts and skills.

	• Talk about and notice the seasons throughout the year. • Talk about and describe the seasons. Talk about what we do to adapt to different seasons e.g. clothes, activities, physical environment, food • Talk about the plants and animals of different seasons and what they do. • Compare seasons. General Seasonal changes (day-to-day discussions) Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	**Key End Points: By the end of this unit children will be able to:** • 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.	
Year 2	**Materials** **Autumn 1** **Uses of Everyday Materials** Reflecting on their knowledge of different materials, children begin to explain why materials are used in certain contexts. They develop enquiry skills to investigate the properties of materials and explore the science of inventing new ones.	**Living things and their habitats** **Spring 1** **Microhabitats** Developing their understanding of scientific enquiry, pupils learn that scientists use a range of skills to answer questions. They discover that microhabitats provide what minibeasts need to survive and carry out a survey to find	**Plants** **Summer 1** **Plant growth** Using their prior knowledge of important plant structures, children explain what factors are needed for successful growth and compare how those needs vary across different plants. They grow plants from seeds and bulbs to ascertain the needs for initial

	Key End Points: By the end of this unit children will be able to: • Talk about and describe different objects/materials. • Talk about the properties of everyday objects that we use. • Understand different materials have different properties. • Talk about the suitability of materials for different objects. • Explore changing materials. **Living things and their habitats** **Autumn 2** **Habitats** Considering the life processes that all living things have in common, pupils classify objects into alive, was once alive or has never been alive. Pupils explore global habitats, naming plants and animals that can be found there. They learn how a range of different living things depend on each other for food or shelter.	out where different minibeasts live in the school grounds. They practise asking scientific questions and follow a method to investigate which conditions woodlice prefer. Pupils explore the job role of a botanist by identifying flowering plants. **Key End Points: By the end of this unit children will be able to:** • 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. **Spring 2** **Life cycles and health** Studying the life cycles of various animals, children learn what animals need to survive and how they change over time. Pupils collect data that	development and compare this to the survival needs of plants in later growth phases. Pupils take their own measurements and reflect on historical examples to understand how conclusions can be drawn. **Key End Points: By the end of this unit children will be able to:** • Talk about how to grow a variety of plants. • Grow a variety of plants from seeds and bulbs • Care for a variety of houseplants/plants over the whole of Y2 • Describe different seeds – what they look like, what they grow in to and how we use the plant. • Talk about how to grow a variety of bulbs. • Describe different bulbs – what they look like, what they grow in to and how we use the plant. • Talk about the parts of the plants we eat.

	Pupils explore this further by creating food chains to show the sequence that living things eat each other for energy to grow and stay healthy. **Key End Points: By the end of this unit children will be able to:** • 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. • To know a variety of plants and animals and describe some differences. • 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.	allows them to observe changes in their peers, while also developing their ability to take measurements and record data. They consider the role of expert scientific knowledge in careers that inform people to make healthy choices. **Key End Points: By the end of this unit children will be able to:** • Talk about and describe how to look after themselves – what foods are best to eat; why we need to exercise; why and how to rest. • Look after their own health e.g. brushing their teeth , washing hands, drinking water, choosing appropriate clothing, appropriate activities, bedtimes etc. • Make comparisons between themselves and people that are older and younger than them. • Talk about baby animals and their parents. • Describe how baby animals change as they grow. • Compare baby animals with their parents and other baby animals.	**Making connections** **Summer 2** **Title TBC** Bringing together pupils' learning from multiple Science units, helping them to make connections between the key concepts and skills.

Working Scientifically in KS1. Children will develop the following skills across the Key Stage…

Posing Questions:
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 recognise whether a test is fair.
With support, deciding if suggested observations aresuitable.
Ordering a simple method.

Predicting:
Suggesting what might happen, often justifying with personal experience.

Observing:
Using their senses to describe, in simple terms, what they notice or what has changed.

Measuring:
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:
Gathering specific information from one simplified, specified source.

Recording:
Drawing and labelling simple diagrams.
Using a prepared table to record results including:
- Numbers.
- Simple observations.
- Tally frequency.

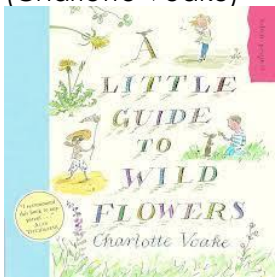
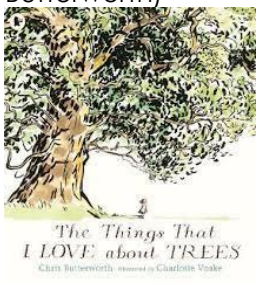
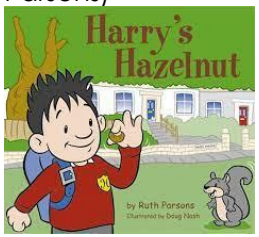
Grouping & Classifying:
Grouping based on visible characteristics.
Organising questions to create a simple classification key.

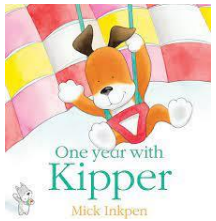
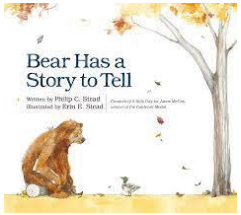
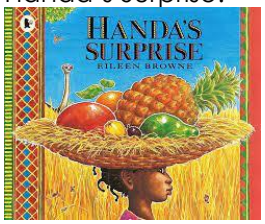
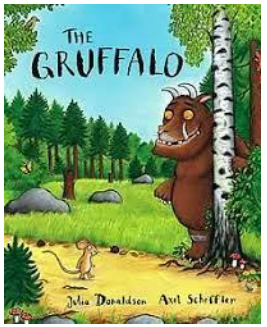
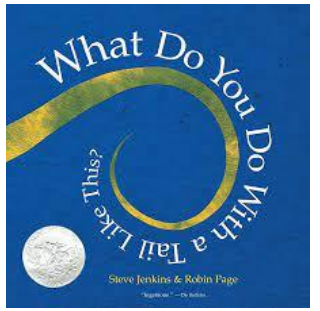
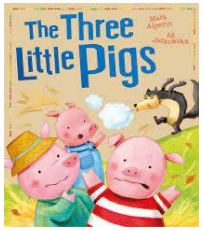
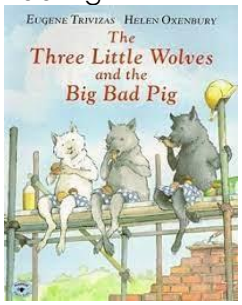
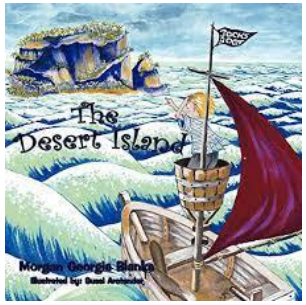
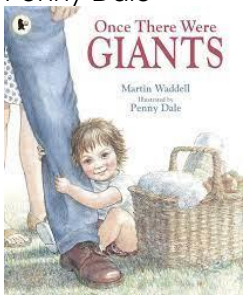
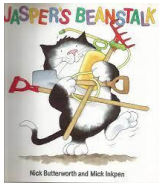
Graphing:
Representing data using pictograms and block charts.

Analysing & drawing conclusions:
Using their results to answer simple questions.
Beginning to recognise when results or observations do not match their predictions.

Evaluating:
Beginning to recognise whether a test is fair or not.

Key Texts:

Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup) 	A Little Guide to Wild Flowers (Charlotte Voake) 	The Things That I LOVE about TREES (Chris Butterworth) 	Harry's Hazelnut (Ruth Parsons) 	One winter's day by Christian Butler. 	Autumn is here poem.

One year with Kipper – Mike Inkpen 	Bear Has a Story to Tell Book by Philip C. Stead 	Funny Bones 	Handa's Surprise. 	The Gruffalo. 	What to do with a tail like this. 
Joan Proctor, Dragon Doctor Patricia Valdez 	The Three Little Pigs 	The Three Little Wolves and the Big Bad Pig 	The Desert Island by Morgan Georgia Banks 	Once There were Giants by Martin Waddell and Penny Dale 	Jack and the Beanstalk. 
Jasper's Beanstalk— Nick Butterworth 	Tadpole's Promise