Science Knowledge Progression

	By the end of Reception	By the end of Year 2	By the end of Year 4
To work Scientifically	*Look closely at similarities, differences, patterns and change*	*Ask simple questions* *Know how to use simple equipment* *Know how to observe closely* *Understand how to perform simple tests* *Know how to identify and classify Use observations and ideas to suggest answers to questions* *Know how to gather and record data to help answer questions*	*Ask relevant questions* *To know how to set up simple practical enquiries and comparative and fair tests To know how to make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers.* *To know how to gather, record, classify and present data in a variety of ways to help in answering questions.* *Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.* *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.* *Know how to use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.* *Knows how to identify differences, similarities or changes related to simple, scientific ideas and processes.* *Understands how to use straightforward, scientific evidence to answer questions or to support their findings*

Plants	**By the end of Reception**	**By the end of Year 1**	**By the end of Year 2**	**By the end of Year 3**	**By the end of Year 4**

BIOLOGY	Children should know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	**To understand 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 (seeds, roots etc), including trees.	**To understand plants** To observe and know how seeds and bulbs grow into mature plants To find out and describe how plants need water, light and suitable temperature to grow and stay healthy	**To understand plants** Identify, know and describe the functions of different parts of flowering plants: roots, stem/truck, leaves and flowers Explore and know 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 and understand 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.	

Animals and humans **Biology**	EYFS Explore the natural world around them, making observations and drawing pictures of animals and plants. I know the names of different animals: from our country and far away.	**Y1** **To understand animals and 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 (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Y2** **To understand animals and humans** To know that animals, including humans, have offspring which grow into adults To know and describe the basic needs of animals, including humans, for survival (water, food and air) Know and describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Y3** **To understand animals, including humans** To identify and know 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 and know that humans and some animals have skeletons and muscles for support, protection and movement	**Y4** **To understand animals and humans** 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.

Living things Biology	EYFS – Natural World Explore the natural world around them making observations and drawing pictures about animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.		**Y2 To investigate living things** explore and compare the differences between things that are living, dead, and things that have never been alive 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.		**Y 4 To investigate living things** Identify and name a variety of living things (plants and animals) in the local and wider Give reasons for classifying plants and animals based on specific characteristics. Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats.

Materials Chemistry	States of Matter Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter Explore collections of materials with similar and/or different properties.	**Y1 To investigate everyday materials** To know how to distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock To be able to describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials based on their simple physical properties.	**Y2 To investigate everyday materials** Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Identify and compare and know the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard	**Y3 Rocks** 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 soil are made from rocks and organic matter	**Y4 To investigate materials** (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 the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Physics **Light** **Sound** **Seasons**	EYFS Understand some important processes and changes in the natural world around them, including the	**Y1** **To understand seasonal changes** Observe and talk about changes across the four seasons Observe and describe weather associated with the		**Y3** **To investigate light** Recognise that they need light in order to see things and that dark is absence of light Notice that light is reflected from surfaces	**Y4** **To investigate sound and hearing** 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

	seasons and changing states of matter	seasons and how day length varies, including understanding that it is unsafe to look directly at the Sun.		Recognise that light from the sun can be dangerous and that there are ways to protect the eyes. Recognise that shadows are formed when light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change **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 describe magnets as having 2 pole Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound's source increases. Electricity **To understand electrical circuits** Identify common appliances that run on electricity 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.