

KS1 Cycle 1 – To be taught throughout the year.

Builds on EYFS

- Know about the characteristics of weather and seasons
- Know the changes across the 4 seasons
- Know and describe weather associated with the seasons and how day length varies

Types of Knowledge Will study...	Disciplinary Knowledge Working scientifically – knowledge of how scientific knowledge is generated and grows.	Substantive Knowledge The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.	Vocabulary	Experience
A SCIENTIST studying Physics. Seasonal Changes (weather)  Physical World and Space  Questions  Methods and Measurements  Data Analysis  Explanations	will understand ... Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. Communicate my ideas, what I can do and what I can find out in different ways. Use simple equipment to observe closely including changes over time. Ask my own questions about what I notice. Use hand lenses and egg timers. Gather and record data to help in answering questions including from secondary sources of information.	will know ... Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	seasons, winter, spring, summer, daylight, length.	Observe changes in the four seasons. Observe how daylight varies dependent on the season. Signs of autumn. Observe the changes in weather and the impact it has on animals and plants. Observe change in length of daylight. Signs of spring. Observe the changes in weather and the impact it has on animals and plants. Observe change in length of daylight. Signs of summer. Observe the changes in weather and the impact it has on animals and plants. Observe change in length of daylight.

KS1 Cycle 1 – Autumn 1

Builds on EYFS.

- Know about similarities and differences in relation to living things and their habitats.
- Know how to talk about the features of my own immediate environment and how environments might vary from one another.
- Know how to make observations of animals and plants and explain why some things occur, and talk about changes.

Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Biology. Living Things and their Habitats [SCHOOL GROUNDS / AROUND OUR SCHOOL]  Living Organisms  Questions  Methods and Measurements  Data Analysis  Explanations	I can I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. I can communicate my ideas, what I can do and what I can find out in different ways. I can use simple equipment to observe closely including changes over time. I can ask my own questions about what I notice. I can gather and record data to help in answering questions including from secondary sources of information	I know I know how to identify whether things are alive, dead or have never lived. I know how to explore and compare the differences between things that are living, dead, and things that have never been alive. I know all animals need water, air and food to survive. I know a habitat is a natural environment or home of a variety of plants or animals. I know a habitat is a place where living things, such as animals and plants, can find all the things they need to survive. This includes food, water, air, space to move and grown and some shelter. I know some habitats are large, like the ocean, and some are very small, such as under a log. I know that a micro-habitat is a very small habitat.	animals, plants, living, non-living, , mechanical, real, pretend, dead, alive, breath, survive habitat, microhabitat, minibeasts, environment, vegetation foodchain source of food	Sort objects/photos of living and non-living things. e.g. real baby and a doll. Identify whether things are alive, dead or never lived. Explore and compare the differences between things that are living, dead, and things that have never been alive. Describe my habitat and how it helps me survive. Minibeast hunts. Make a minibeast house. What are the most common minibeasts found in our woodland? What micro-habitats are on our school grounds?

		I know that most living things live in habitats to which they are suited I know that different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other I know the names of some different plants and animals that live in the area around my school and describe how they are suited to their different habitats (including micro-habitats) I know that animals obtain their food from plants and other animals, I know some simple food chains of animals that live in micro habitats around school by identifying and naming different sources of food		What conditions do woodlice prefer to live in? What is a butterfly/worm/woodlouse's favourite food? Do minibeasts' habitats change overtime/due to weather conditions?
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KS1 Cycle 1 – Autumn 2

Builds on from EYFS:

- know that plants need sun to grow.
- know that plants need water to grow.
- know that most plants need soil and nutrients to grow.
- know some plants grow from seeds.

Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Biology PLANTS (Y1) (Tree Focus)  Living Organisms  Questions  Methods and Measurements  Data Analysis  Explanations	I can I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. I can communicate my ideas, what I can do and what I can find out in different ways. I can use simple equipment to observe closely including changes over time. I can ask my own questions about what I notice. I can gather and record data to help in answering questions including from secondary sources of information	I know I know that trees are plants. I know the names of some common wild and garden plants. I know what deciduous and evergreen means. I know some trees are deciduous and some are evergreen. I know the basic structure of flowering plants including trees. I know that seeds and bulbs grow into plants. I know all plants have the same main parts but look different.	growing, living, weeds, decay, plants, trees, water, dead, healthy, seeds, branches, roots, leaf, stem, trunk, crown, common, evergreen, deciduous, flower, flowering, fruit, vegetables, bark, herb, wild, garden, petal	Nature walks Plant bulbs ready for Spring Find out what type of trees are in their local environment. Make a trees identification kit. Going on a wild plant hunt – identifying plants creating a tally chart to record the types found. Sort and compare seeds Compare and contrast features of a tree. Match seeds to trees – e.g. horse chestnut / acorns Draw and label parts of common plants and trees. Compare two different plants

				Sequence the life cycle of a tree.
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KS1 Cycle 1 – Spring 1 and 2

Builds on EYFS.

- Know that objects are made from different materials.
- Know about similarities and differences in relation to places, objects, materials and living things.
- Know how to about the features of my immediate environment and how environments might vary from one another.
- Know how to make observations of animals and plants and explain why some things occur, and talk about changes.

Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Chemistry Everyday Materials Y1 and Y2  Materials and their properties ??  Methods and Measurements  Data Analysis  Explanations	I can I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. I can communicate my ideas, what I can do and what I can find out in different ways. I can use simple equipment to observe closely including changes over time. I can ask my own questions about what I notice. I can gather and record data to help in answering questions	I know I know there are different materials and they are used to make different objects. I know the name and can identify a variety of everyday materials, including wood, plastic, glass, metal, water, and rock I know the simple physical properties of a variety of everyday materials I know that the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching and this is known as flexibility. I know how to compare and group together a variety of everyday materials on the basis of their simple physical properties	materials, hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent, brick, paper, fabrics, elastic, foil. squashing, bending, twisting and stretching flexible	Sort objects by different materials /materials dependent on properties. Uses of different materials. What are objects made from? Can I sort materials based on their properties? What materials are most used for objects outside? What material is the best to wrap a parcel? What material is best to mop up a puddle? Pipettes Beakers Hand lenses Egg timers

	including from secondary sources of information.	I know how to distinguish between an object and the material from which it is made. I know that objects can be made from more than one material. I know that certain materials are suitable for different uses. I know how to compare the suitability of different materials to a particular use. I know that some materials are more absorbent than others.		
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KS1 Cycle 1 – Summer 1 and 2				
Builds on from EYFS: • know that plants need sun to grow. • know that plants need water to grow. • know that most plants need soil and nutrients to grow. • know some plants grow from seeds.				
Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...				

	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Biology Plants (Y2)     	I can I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. I can communicate my ideas, what I can do and what I can find out in different ways. I can use simple equipment to observe closely including changes over time. I can ask my own questions about what I notice. I can gather and record data to help in answering questions including from secondary sources of information.	I know I know the names of some common wild and garden plants. I know the basic structure of flowering plants including trees. I know all plants have the same main parts but look different. I know that seeds and bulbs grow into plants. I know the life cycle is the series of changes that an animal or plant passes through from the beginning of its life until its death. I know plants are living things and require things to grow. I know plants need water, light and a suitable temperature to grow and stay healthy. I know plants require nutrients from soil to grow. I know plants grow taller and measurements increase as they mature. I know that some plants will stop growing if the conditions are not suitable. I know that seeds can be found in the fruit of the plant. I know that seeds can vary in size, shape and colour.	growing, living, weeds, decay, plants, trees, water, dead, healthy, seeds, branches, roots, leaf, stem, trunk, crown, common, evergreen, deciduous, flower, flowering, fruit, vegetables, bark, herb, wild, garden, petal	How to make a plant identification kit. Local nature walk. Growing seeds in different conditions Planting a sunflower and observing it growing. Sequence the life cycle of a sunflower / bean Drawing and labelling parts of common plants and trees. Are all daisy leaves the same? Do bigger seeds grow into bigger plants? Compare two different types of plants – similarities and differences Grow a bean stalk and observe the changes over time. Write a bean diary Researching what do the different parts of a plant do?

		I know many plants provide us with food by bearing fruits which carry their seeds. I know when farmers grow plants to provide us with food, these are called crops. I know we eat many fruits that contain seeds (including tomatoes!). We also eat different parts of vegetable plants: root vegetables (carrots, potatoes) stem vegetables (celery, spring onion) leafy vegetables (cabbage, lettuce) flowering vegetables (cauliflower, broccoli) I know we eat grains and cereals from plants too (wheat, oats). I know that nuts and seeds are also sometimes edible (sesame seeds, pumpkin seeds, peanuts). I know many herbs are also grown to add flavour to foods.		Identifying/ sorting parts of plants that we eat. root vegetables (carrots, potatoes) stem vegetables (celery, spring onion) leafy vegetables (cabbage, lettuce) flowering vegetables (cauliflower, broccoli) Do the biggest fruits have the most seeds?
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