

Key knowledge development: KS1 Science

	EYFS-Reception	Year 1	Year 2
National Curriculum aspects	<p><u>Plants</u></p> <ul style="list-style-type: none"> Grow plants and name some common plants they see <p><u>Seasonal changes</u></p> <ul style="list-style-type: none"> Play and explore outside in all seasons and in different weather Observe living things throughout the year <p><u>Animals, excluding humans</u></p> <ul style="list-style-type: none"> Name and describe animals that live in different habitats. Describe different habitats <p><u>Humans</u></p> <ul style="list-style-type: none"> Describe people who are familiar to them Learn about how to take care of themselves <p><u>Materials</u></p> <ul style="list-style-type: none"> Explore a range of materials, including natural materials Make objects from different materials, including natural materials Observe, measure and record how materials change when heated and cooled Compare how materials change over time and in different conditions <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> Explore the plants in the surrounding natural environment Explore the animals in the surrounding natural environment Explore plants and animals in a contrasting natural environment <p><u>Light</u></p> <ul style="list-style-type: none"> Explore shadows 	<p><u>Plants</u></p> <ul style="list-style-type: none"> 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, including trees <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> 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. <p><u>Materials</u></p> <ul style="list-style-type: none"> 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 describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties. <p><u>Seasonal changes</u></p>	<p><u>Plants</u></p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults – find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> 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

	<ul style="list-style-type: none"> • Explore rainbows <p><u>Forces</u></p> <ul style="list-style-type: none"> • Explore how to change how things work • Explore how the wind can move objects • Explore how objects move in water <p><u>Sound</u></p> <ul style="list-style-type: none"> • Listen to sounds outside and identify the source • Make sounds <p><u>Earth and space</u></p> <ul style="list-style-type: none"> • Learn about the Solar System and stars • Learn about space travel 	<ul style="list-style-type: none"> • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies. 	<p>plants and animals in their habitats, including microhabitats</p> <ul style="list-style-type: none"> • 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. <p><u>Uses of everyday materials</u></p> <ul style="list-style-type: none"> • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
<p>Working Scientifically Skills</p>	<p><u>Asking scientific questions</u></p> <ul style="list-style-type: none"> • Asking simple questions about what they are curious about or would want to find out through their exploration of the world <p><u>Predict</u></p> <ul style="list-style-type: none"> • Verbalise what they think may happen or choosing between pre-made predictions <p><u>Plan and do</u></p> <ul style="list-style-type: none"> • Talk about how we could test our questions • Set up by adults for children to perform simple tests guided by adults <p><u>Record</u></p> <ul style="list-style-type: none"> • Observe simple changes and discuss • Collect class data and discuss what they have found- class table/chart 	<p><u>Asking scientific questions</u></p> <ul style="list-style-type: none"> • Explore the world around them and ask simple questions liked to science units <p><u>Predict</u></p> <ul style="list-style-type: none"> • Using prior knowledge of the world around them, say what they think will happen. <p><u>Plan and Do</u></p> <ul style="list-style-type: none"> • With adult support and guidance perform simple tests • use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, <p><u>Record</u></p> <ul style="list-style-type: none"> • Observe closely, using simple equipment like magnifying glasses. 	<p><u>Asking scientific questions</u></p> <ul style="list-style-type: none"> • raise and answer questions that help them to become familiar with the life processes that are common to all living things. • raise and answer questions about the local environment <p><u>Predict</u></p> <ul style="list-style-type: none"> • Using what they have learnt in year 1 to say what they think will happen <p><u>Plan and Do</u></p> <ul style="list-style-type: none"> • talk about and suggest ways of answering their questions • set up a comparative test to show that plants need light and water to

	<ul style="list-style-type: none"> • Sorting activities supported by adults to model and replicate • Make obvious comparisons between objects, materials and living things and • With adult support, spotting obvious patterns and relationships <p><u>Analyse and Explain</u></p> <ul style="list-style-type: none"> • Have experiences of different scientific enquiries, majority practical • Start to use simple scientific language • Use secondary resources provided to them such as visitors, photographs and videos 	<ul style="list-style-type: none"> • Draw simple diagrams • record simple data e.g. tables and charts • use simple features to compare and contrast objects, materials and living things • with help, decide how to sort and group the above • observe changes over time • with guidance, they should begin to notice patterns and relationships. • use simple secondary sources to find answers <p><u>Analyse and Explain</u></p> <ul style="list-style-type: none"> • Experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. • Use simple scientific language in the correct context to talk about what they have found out and how they have found it out. • Communicate their ideas to a range of audiences in a variety of ways. • Find things out using secondary sources of information such as books, photographs and videos. 	<p>stay healthy.</p> <ul style="list-style-type: none"> • observe objects, materials and living things. • observe, through video or first-hand observation and measurement, <p><u>Record</u></p> <ul style="list-style-type: none"> • Compare objects, materials and living things. • sort and classify things according to whether they are living, dead or were never alive and describe how they decided where to place things, • classify the uses of different materials, recording their observations. • record their findings using charts • construct a simple food chain that includes humans <p><u>Analyse and Explain</u></p> <ul style="list-style-type: none"> • Describe how they decided where to place things • Describe the conditions in different habitats and micro-habitats and how the conditions affect the number and type(s) of plants and animals that live there. • discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than
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<p>Method of scientific enquiry</p>	<p><u>Observation over time</u> The changes they observe can take place in seconds, minutes, hours, or days, or over longer periods of time, such as weeks or months. This type of enquiry lends itself to observing the natural world, but can also be used when comparing materials and observing physical processes.</p> <p><u>Research</u> Children get to use a range of secondary sources to help them find the answers to their ‘big questions’. Alternatively, children could plan research tools, such as questionnaires and interviews, to collect their own data. They are also an ideal type of enquiry to encourage collaborative learning in children, both in the researching and sharing of information, but also in presenting their findings to a variety of audiences. Research enquiries help to develop children’s scientific literacy, as children learn to compare and evaluate information from different sources.</p> <p><u>Pattern Seeking</u> In this type of enquiry, children are trying to answer ‘big questions’ by identifying patterns in the measurements and observations they record. Often, pattern-seeking enquiries may be preliminary tests that lead on to more systematic enquiries, such as fair tests or comparative tests. The key difference here is that pattern-seeking enquiries are not fair or comparative tests, because certain variables can’t be controlled. Children may still identify a possible causal relationship from their data, such as ‘the more you wind up a clockwork mouse, the further it will run’, but they may find links between variables that can’t be explained by cause and effect, such as ‘children with longer arms can jump higher’.</p> <p><u>Grouping and Classifying</u> In this type of enquiry, children make observations and measurements to help them look for similarities and differences. This will help them to organise things into groups and make connections. Identifying and classifying enquiries are fantastic for promoting discussion and collaborative learning. In revisiting this type of enquiry regularly, teachers can support children in becoming more highly skilled in making and recording detailed observations.</p> <p><u>Comparative fair testing</u> Enquiries that are comparative tests have many similar features to fair tests in that one variable is changed, another variable is measured, and any other variables are controlled. The difference is that in a comparative test the variable that is changed is discrete rather than continuous, so children are comparing different cases/situations. Children regularly ask questions that lead to a comparative test, and these types of enquiries provide lots of opportunities to measure and collect data.</p> <p><u>Fair Testing</u> Like comparative tests, fair test enquiries are an opportunity for children to explore cause and effect relationships in science. Children find the answers to ‘big questions’ in fair test enquiries by planning tests to collect data through changing, measuring and controlling variables. Fair tests involve making systematic changes and analysing data to identify how one variable influences another. Due to the increased challenge in this type of enquiry they are introduced and practised in KS2.</p>		
<p>Scientific vocab</p>	<p>See EYFS folder</p>	<p>See Year 1 Folder</p>	<p>See Year 2 Folder</p>