

## Science Progression Document KS1 and KS2 Coverage from the National Curriculum (Biology)

Year Group	FS1	FS2	Year 1 programme of study	Year 2 programme of study	Year 3 programme of study	Year 4 programme of study	Year 5 programme of study	Year 6 programme of study
Area	Understanding the World	Personal Social Emotional Development Understanding the World	Plants	Plants	Plants	Living Things and Habitats	Living Things and Habitats	Living Things and Habitats
Statutory	<p><b>N1 – UTW</b></p> <ul style="list-style-type: none"> <li>To be able to name the parts of a plant e.g. stem, leaf, petal.</li> <li>To know that different creatures live in different places based on their characteristics.</li> <li>To begin to understand the importance of looking after our environment and all living things and where we can collect natural resources from.</li> </ul> <p><b>N2 – UTW</b></p> <ul style="list-style-type: none"> <li>To be able to name parts of a range of plants.</li> <li>To talk about different fruits</li> </ul>	<ul style="list-style-type: none"> <li>Looking after our outdoor area e.g. watering the plants. (PSED - Extra Foci)</li> <li>To know how to look after plants and living things. (PSED)</li> <li>To look after plants within our own outdoor environment. (UTW)</li> <li>To know and describe the 5 things a plant needs to grow (UTW)</li> </ul>	<ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>	<ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore 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</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination,</li> </ul>	<ul style="list-style-type: none"> <li>grouping a variety of flowering and non-flowering plants</li> <li>using classification keys.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding that plants and animals reproduce as part of their lifecycle.</li> <li>To know that plants reproduce sexually and asexually.</li> <li>To understand that asexual reproduction only involves one parent plant. (Bulbs, tubers, runners and plantlets are examples of asexual plant reproduction).</li> <li>-To understand that sexual reproduction in plants occurs through pollination (recap from year 3), usually involving wind or insects.</li> <li>-To know that flowers exchange</li> </ul>	<ul style="list-style-type: none"> <li>To know that plants can be divided broadly into two main groups – flowering and non-flowering plants.</li> <li>To create classification keys for plants and animals.</li> </ul>

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	and a range of plants.				seed formation and seed dispersal		<p>pollen grains from the anther to the stigma (often through pollinators such as insects) in a process called pollination.</p> <ul style="list-style-type: none"> <li>-To know that after pollination a process called fertilisation occurs inside the plant and a seed is produced which is then dispersed.</li> </ul>	
<b>Non-Statutory</b>			They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).	<p>Pupils should use the local environment throughout the year to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants.</p> <p>Note: seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a</p>	<p>Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p> <p>Note: pupils can be introduced to the idea that plants can make their own food, but at this stage they do not</p>			

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				store of food inside them.	need to understand how this happens.			
<b>Working Scientifically</b>			Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example, the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.	Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.			
<b>Area</b>	<b>Understanding the World</b>	<b>Understanding the World Physical Development Personal, Social, Emotional Development</b>	<b>Animals, including humans</b>	<b>Animals, including humans</b>	<b>Animals, including humans</b>	<b>Animals, including humans</b>	<b>Animals, including humans</b>	<b>Animals, including humans</b>
<b>Statutory</b>	<b>N1 – UTW</b> <ul style="list-style-type: none"> <li>To be able to use my senses to explore the</li> </ul>	<ul style="list-style-type: none"> <li>To know how exercise affects our own bodies</li> </ul>	<ul style="list-style-type: none"> <li>identify and name a variety of common</li> </ul>	<ul style="list-style-type: none"> <li>notice that animals, including humans,</li> </ul>	<ul style="list-style-type: none"> <li>identify that animals, including humans, need</li> </ul>	<ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of</li> </ul>	<ul style="list-style-type: none"> <li>describe the changes as humans</li> </ul>	<ul style="list-style-type: none"> <li>identify and name the main parts of the human</li> </ul>

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	<p>world around me.</p> <ul style="list-style-type: none"> <li>To categorise animals by their characteristics.</li> <li>To be able to talk about my own features e.g. I have blue eyes.</li> <li>To be able to make simple observations of living things e.g. look there's a butterfly, it has wings.'</li> <li>To know that every living being has a life cycle and they change in shape and size as they grow.</li> <li>To know that living beings follow a similar growth pattern and make comparisons.</li> <li>To begin to understand the importance of looking after our environment</li> </ul>	<p>e.g. breathing, sweating, effect on muscles. (PD)</p> <ul style="list-style-type: none"> <li>To talk about the effects of exercise on my body. (UTW)</li> <li>To explain about the importance of brushing our teeth and visiting the dentist. (PD)</li> <li>To explain about the importance of brushing my teeth and drinking water (UTW)</li> <li>To know that humans and other animals can grow and change. (UTW)</li> <li>To know how and be able to explain ways we can look after our teeth. (UTW)</li> <li>To be able to explain the</li> </ul>	<p>animals including fish, amphibians, reptiles, birds and mammals</p> <ul style="list-style-type: none"> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>	<p>have offspring which grow into adults</p> <ul style="list-style-type: none"> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<p>the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <ul style="list-style-type: none"> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	<p>the digestive system in humans</p> <ul style="list-style-type: none"> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<p>develop to old age</p>	<p>circulatory system, and describe the functions of the heart, blood vessels and blood</p> <ul style="list-style-type: none"> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>

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	<p>and all living things and where we can collect natural resources from.</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p><b>N2 – UTW</b></p> <ul style="list-style-type: none"> <li>• To be able to use my senses to explore the world around me and talk about them simply</li> <li>• To be able to talk about my own features and compare and contrast with others.</li> <li>• To make more complex observations of living things e.g. 'That butterfly is yellow and has green stripes'.</li> <li>• To know the difference between farm animals and wild animals.</li> </ul>	<p>life cycle of a butterfly. (UTW)</p> <ul style="list-style-type: none"> <li>• To know how to keep ourselves healthy e.g. teeth brushing, healthy foods, exercise. (PSED)</li> <li>• To know how to look after plants and living things. (PSED)</li> <li>• To look after ourselves e.g. hygiene and teeth brushing (PSED – Extra Foci)</li> <li>• Importance of healthy foods and exercise (PSED – extra foci)</li> <li>• To act out a sequence of events e.g. life cycle of a butterfly (EA&amp;D)</li> </ul>						
<b>Non-Statutory</b>			Pupils should use the local environment	Pupils should be introduced to the basic needs of	Pupils should continue to learn about the importance	Pupils should be introduced to the main body parts associated	Pupils should draw a timeline to indicate stages in the growth	Pupils should build on their learning from years 3 and 4



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			<p>throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.</p> <p>Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.</p>	<p>animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.</p> <p>The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.</p>	<p>of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions</p>	<p>with the digestive system, for example: mouth, tongue, teeth, oesophagus, stomach, and small and large intestine, and explore questions that help them to understand their special functions.</p>	<p>and development of humans. They should learn about the changes experienced in puberty.</p>	<p>about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.</p> <p>Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</p>
<b>Working Scientifically</b>			<p>Pupils might work scientifically by: using their observations to compare and contrast animals at</p>	<p>Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how</p>	<p>Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and</p>	<p>Pupils might work scientifically by: comparing the teeth of carnivores and herbivores and suggesting reasons</p>	<p>Pupils could work scientifically by researching the gestation periods of other animals and comparing them with</p>	<p>Pupils might work scientifically by: exploring the work of scientists and scientific research about the</p>

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			first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.	different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.	comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy, and design meals based on what they find out.	for differences; finding out what damages teeth and how to look after them. They might draw and discuss their ideas about the digestive system and compare them with models or images	humans; by finding out and recording the length and mass of a baby as it grows.	relationship between diet, exercise, drugs, lifestyle and health.

Year Group	Year 1 programme of study	Year 2 programme of study	Year 3 programme of study	Year 4 programme of study	Year 5 programme of study	Year 6 programme of study
<b>Area</b>		<b>Living things and their habitats</b>		<b>Living things and their habitats</b>	<b>Living things and their habitats</b>	<b>Living things and their habitats</b>
<b>Statutory</b>		<ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>identify that most living things live in habitats to which they are suited and describe how different habitats</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul>	<ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals</li> </ul>	<ul style="list-style-type: none"> <li>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> </ul>

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		<p>provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> <li>identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>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</li> </ul>		<ul style="list-style-type: none"> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>		<ul style="list-style-type: none"> <li>give reasons for classifying plants and animals based on specific characteristics</li> </ul>
<b>Non-Statutory</b>		<p>Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar with the life processes that are common to all living things. Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'microhabitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and</p>		<p>Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants. Pupils could begin to put vertebrate animals into groups, for example: fish, amphibians, reptiles, birds, and mammals; and</p>	<p>Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall.</p> <p>Pupils should find out about different types of reproduction, including</p>	<p>Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why</p>



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		<p>answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.</p>		<p>invertebrates into snails and slugs, worms, spiders, and insects.</p> <p>Note: plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, for example ferns and mosses.</p> <p>Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.</p>	<p>sexual and asexual reproduction in plants, and sexual reproduction in animals.</p>	<p>living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</p>
<b>Working Scientifically</b>		<p>Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions like: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food</p>		<p>Pupils might work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</p>	<p>Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent</p>	<p>Pupils might work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.</p>

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		chain that includes humans (eg, grass, cow, human). They could describe the conditions in different habitats and microhabitats (under log, on stony path, under bushes); and find out how the conditions affect the number and type(s) of plants and animals that live there			plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.	

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<b>Area</b>					<b>Living Things and Habitats</b>	<b>Evolution and inheritance</b>
<b>Statutory</b>					<ul style="list-style-type: none"> <li>To know that animals have offspring which grow into adults.</li> <li>To know that mammals' offspring will be born live such as babies or kittens and will then grow into adults.</li> <li>To know that other animals may lay</li> </ul>	<ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same</li> </ul>

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					<p>eggs such as chickens (birds) or snakes (reptiles) which then hatch to young and then grow to adults.</p> <ul style="list-style-type: none"> <li>To know that some animals undergo a further change called metamorphosis before becoming an adult such as caterpillars to butterflies (insects) or tadpoles to frogs (amphibians).</li> </ul>	<p>kind, but normally offspring vary and are not identical to their parents</p> <ul style="list-style-type: none"> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>
<b>Non-Statutory</b>						<p>Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the</p>

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						<p>development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.</p> <p>Note: at this stage, pupils are not expected to understand how genes and chromosomes work.</p>
<b>Working Scientifically</b>						<p>Pupils might work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on 2 feet rather than 4, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.</p>