

How is the science curriculum organised?

The science curriculum is organised around Biology, Physics and Chemistry with working scientifically embedded across all of the unit of work. Working scientifically is ever present within the curriculum design ensuring the children have the disciplinary knowledge required to think and work as a scientist.

How are key strands of learning used?

The key strands within the science curriculum add a further layer of knowledge and understanding to the children's learning. Carefully selected strands provide the children with cumulative knowledge over time around key aspects. This cumulative knowledge will allow the children to understand wider themes to a greater level, being able to reason with thoughts and language. This allows the children to engage in topics of conversation and feel confident with their own knowledge and understanding of these areas. It is through these key strands of learning that the children will be able to recognise and link to other subjects.

Science						
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
KS1 Cycle A	Living Things and their Habitats		Materials (y1)	Material (y2)	Plants (y1)	Plants (y2)
KS1 Cycle B	Animals, including Humans (y1)	Animals, including Humans (y2)	Animals, including Humans (y1)	Animals, including Humans (y2)	Seasonal Change	
LKS2 Cycle A	Living Things and their Habitats	States of Matter	Animals, including Humans (y3)	Animals, including Humans (y4)	Electricity	
LKS2 Cycle B	Rocks	Light	Forces and Magnets	Sound	Plants	

KS1.CB.T1	<p>Area of study: Animals Including Humans</p> <p>Unit aims / outcome: (Year 1- Animals)</p> <ul style="list-style-type: none"> Identify and name a variety of common animals, including fish, amphibians, reptiles, bird 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). <p>(Year 2-Animals)</p> <ul style="list-style-type: none"> Notice that animals, including humans have offspring which grow in to adults. (animals) Find out and describe the basic needs of animals to survive. 		
<p>Geographical concepts to organise knowledge: Biology- the study of living organisms Working Scientifically- disciplinary knowledge required to think and work as a scientist.</p>			
Key strands of learning:			
<p>Hierarchical Strands: (see progression) Plants (Build year on year)</p>		<p>Cumulative Strands: e.g. environment (key features throughout NC)</p>	
<p>Learning in Reception:</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changes in their personal environment.</p> <p>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.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Tier 2</p> <p><u>New</u> Amphibians Reptiles Mammals Senses Survival</p> <p><u>Review –</u> Fish Birds humans</p>		<p>Tier 3</p> <p><u>New</u> Environment Carnivores Herbivores omnivores reproduction</p>

NC objective:	Vocabulary and crucial knowledge:	
<ul style="list-style-type: none"> Identify and name a variety of common animals, including fish, amphibians, reptiles, bird 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). Notice that animals, including humans 	<p><u>Context of study:</u> This builds upon knowledge taught in (KS1.CA.T1), where children have been taught plants produce oxygen and that they are living things. The children also are aware from this unit that humans and animals are also living things and this come sunder the concept of biology. During (KS1.CA.T1) they will also know that plants often start simple food chains and that some animals eat each other depending on where they are in a food chain. Children will understand that living things have a habitat that provides them with food and water. They will know about different world habitats and local habitats to them. Children will have learned about living things and plants through their forest school sessions in reception and year 1. Children should know plants can grow and can be found in gardens, allotments or in public areas. They will also know about deciduous and evergreen plants from their investigations during the Plants topic (KS1.CA.T3).</p> <p><u>Crucial Knowledge:</u></p> <p><u>Five animal groups</u></p> <p>To know that there are 5 different groups for animals; fish, birds, amphibians, reptiles, birds and mammals. To know that humans are mammals. To know that each group of animals have different characteristics. To know some groups are warm blooded or cold blooded. To know some groups are vertebrates (have a backbone), and some are invertebrates (don't have a backbone). To know that robins, seagulls, blackbirds and eagles are all birds. To understand that birds are warm-blooded, can fly, have two legs and are vertebrates. To understand that clownfish, puffer fish, salmon are all types of fish. To understand that fish are cold-blooded as their body temperature is regulated by the water around them, they have gills, can breathe underwater and are vertebrates. To know that snakes, lizards and tortoises are types of reptiles. To understand that reptiles are cold blooded, (they can't control their own temperature, most reptiles have shells or scales, most reptiles lay their own eggs and that they are vertebrates. To know that frogs, toads and newts are all types of amphibians. To understand that most amphibians lay eggs in water for their offspring, they are cold blooded and they are vertebrates.</p>	

<p>have offspring which grow in to adults. (animals)</p> <ul style="list-style-type: none"> Find out and describe the basic needs of animals to survive. 	<p>To know that humans, dogs, cats, lions, elephants are types of mammals. To understand that mammals have vertebrates, are warm-blooded, have hair or fur and give birth to live young/babies/offspring.</p> <p><u>Carnivores, herbivores, omnivores</u></p> <p>To understand that a carnivore is an animal that only eats other animals (meat). To understand that a herbivore is an animal that only eats plants. To understand that a omnivore is an animal that eats meat and plants. To know cheetahs, leopards, polar bears, dogs, wolves and foxes are all carnivores. To know that elephants, giraffes, horses, coats, cows, zebras and rabbits are all herbivores. To know that bears, rats, chimpanzee, mice and gorillas are all omnivores.</p> <p><u>Offspring</u></p> <p>To know that animals, have offspring (babies), which grow in to adults. To understand this process is called reproduction. To know that adult animals look very similar to their offspring. To know a cow's offspring is a calf. To know a dog's offspring is a puppy. To know a horse's offspring is a fowl. To know a bear's offspring is a cub. To know animals, grow bigger as they get older. To understand that animals needs water, food and air to survival. To understand that habitat (where an animal lives provides these things). To understand that animals also provide water and food for their offspring to help it grow.</p> <p>.</p> <p><u>Working Scientifically:</u></p> <p><u>Identifying, grouping and classifying</u> To group, identify and classify animals into the 5 different animal groups. To group, identify and classify animals based on their structures and characteristic, based on what they eat and what they look like. To match animals to their offspring. How will I be a scientist?</p> <ul style="list-style-type: none"> Observe: different animals and compare them based on what they eat and what they look like. Ask questions: about different types of animals. <p><u>Observing changes over time</u> To observe how animals, change as they grow. To observe what characteristics, they get from their adult parents. How will I be a scientist?</p> <ul style="list-style-type: none"> Ask questions: about the names of the adult animal's offspring.
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| | <ul style="list-style-type: none">• Observe: how offspring and adult animals tend to look similar.• Record: animals and their offspring matched together and the characteristics they have as well as which animal groups they belong to. |
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Key scientists of study:

Charles Darwin- linked between KS1 and 2