Archbishop Hutton's Primary School

Key Stage 1 WORKING SCIENTIFICALLY

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in diverse ways.
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions.
- gathering and recording data to help in answering question.

Pupils in years 1 and 2 should explore the world around them and raise their own questions.

- They should experience several types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions.
- They should use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should notice patterns and relationships.
- They should ask people questions and use simple secondary sources to find answers.
- They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, conduct simple tests, record simple data, and talk about what they have found out and how they found it out.
- With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.
- These opportunities for working scientifically should be provided across years 1 and 2 so that the expectations in the programme of study can be met by the end of year 2.
- Pupils are not expected to cover each aspect for every area of study

NATIONAL CURRICULUM PROGRAMES OF STUDY

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using several types of scientific enquiry to answer their own questions, including observing changes over a period, noticing patterns, grouping, and classifying things, conducting simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done using first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs, and videos. 'Working scientifically' is described separately in the programme of study but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Prior knowledge: EYFS	**Year Group Expectations: Year 1/2**	**KS2 expectations:**
Animals Including humans. **Understanding the world: The natural world** **Early Learning Goal:** They make observations of animals and plants and explain why some things occur and talk about changes. Understand that some animals are nocturnal.	**Animals Including humans.** To identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals. Y1 To 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). Y1 To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, and mammals, and including pets) Y1. To find out and describe how animals look different to one another Y1.	**Animals Including humans.** To identify that animal, 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. Y3 To identify that humans and some other animals have skeletons and muscles for support, protection, and movement. Y3 To describe the simple functions of the basic parts of the digestive system in humans Y4 To identify the several types of teeth in humans and their simple functions. Y4 To construct and interpret a variety of food chains, identifying producers, predators, and prey. Y4 To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Y6.

	To group together animals according to	To recognise the impact of diet, exercise, drugs, and lifestyle on the way their body's function. Y6 To describe the ways in which nutrients and water are transported within animals, including humans. Y6
	Seasonal changes To observe changes across the four seasons Y1. To observe and describe weather associated with the seasons and how day length varies Y1.	To recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3-Light)
Livings things and their habitats Understand that there are diverse types of environments e.g., rainforest, desert, urban. Understand that animals change as they grow. Name and describe farm animals and their young	**Livings things and their habitats** Identify/name plants and animals including microhabitats. Y2 How can we sort living, dead and never been alive things? Y2 Describe how animals get food – food chain. Y2 What are the similarities and differences between local habitats and how does it affect the animals and plants that live there? Y2	**Livings things and their habitats** Recognise that living things can be grouped in a variety of ways. Y4 How do I use a key to identify local plants and animals? Y4 That environments can change and that this can sometimes pose dangers to living things. Y4 What ways can we protect living things and the environment? Y4
SCIENCE **Theme: SCIENCE AROUND US** **On Safari**	SCIENCE **Theme: NATURAL WORLD** **What's in the woods?**	GEOGRAPHY & SCIENCE **Global Travellers** **Let's go to Scotland!**
		
Key Knowledge: • Animals come in lots of different shapes and sizes. Common animals including fish, amphibians, reptiles, mammals, and birds. • Common animals that are carnivores, herbivores, and omnivores eat different things. • Animals can be grouped using features common animals (birds, fish, amphibians, reptiles, and mammals, including pets)	**Key Knowledge:** **What is a microhabitat?** • Microhabitats are exceedingly small habitats where minibeasts may live. • Examples of microhabitats include under stones, in grass, under fallen leaves and in the soil. • Minibeasts that can be found there include worms, snails, ants, centipedes, millipedes, and butterflies and they help to keep the microhabitat healthy. • Minibeasts can survive in their habitats because they can find the things they need to survive there, such as food and water. For example, caterpillars can survive on leaves as they give them food. **How do animals and plants depend on each other?**	Key Knowledge: • Understand there are four seasons. • Understand the changes that take place in autumn. • Understand the change that take part in winter. • Describe the general types of weather and changes in day length over the seasons. • Describe some other features of their surroundings, themselves, animals, plants that change over the seasons.

			• Animals and plants depend on each other to survive. For example, worms depend on plants because they feed on dead leaves, but plants depend on worms who make the soil healthy by digging holes and allowing air in. • Birds also need worms because they eat them. Worms are a source of food for birds. • This called a food chain. • If there were no worms, there would be less birds as there would be more competition for food. The soil would not be as healthy without worms. • All living things (or things that were once living) have a part to play in food chains. Without them, other animals and plants may not be able to survive		
	Procedural Knowledge • Use observations in the local environment to compare animals or through videos and photographs. • Describe how to identify and group animals. • Group animals according to what they eat. • Research how to take care of animals taken from the local environment and how to return them safely.		**Procedural Knowledge** • Carefully observe a microhabitat (forest school) and sketch the plants you find. Can you find any evidence of plants being eaten? What other living things can you see? • Compare two different habitats and explain what animals and plants can be found there. • Go on a minibeast hunt. What minibeasts can you find? Why can they survive in their habitat? Create a tally chart or pictogram to show your results. • Compare two different microhabitats. What do you notice about the minibeasts that live in each one? Why do you think that is? Discuss how the minibeasts help keep the microhabitat healthy. • Use your knowledge of biomes to describe the types of animals and plants that live there. Match animals and plants to their habitats (e.g., forest, ocean, poles, desert). • Answer questions such as 'Why would a polar bear not survive in the desert?' • Create simple food chains that begin with a plant. Discuss what would happen if one of those living things in a food chain did not exist		**Procedural Knowledge** • In the UK the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again. • The weather also changes with the seasons. • In the UK it is usually colder and rainier in Winter and hotter and dryer in the Summer. • The change in weather causes many other changes, some examples are numbers of minibeasts found outside, seed and plant growth, leaves on trees and type of clothes worn by people
	Key Vocabulary: Birds, fish, amphibians, reptiles, mammals, and invertebrates. Feathers, scales, gills, fins, hair, land, water, backbone, skeleton. Carnivores, herbivores, omnivores. Meat, plants,		**Key Vocabulary:** Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert		**Key Vocabulary:** Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark, Weather (sunny, rainy, windy, snowy), Seasons, Sun, Sunrise, Sunset, Day, Length

	Assessment: Can they begin to classify animals according to several given criteria? Y1 Can they point out differences between living things and non-living things? Y1 Can create a drawing of an imaginary animal labelling its key features. Y1 Can use secondary resources to find out what animals eat, including talking to experts e.g., pet owners, zookeepers etc. Y1 Can write descriptively about an animal. Y1 Can write a What am I? riddle about an animal. Y1 Can describe what a range of animals eat. Y1		**Assessment:** Can sort and group animals using similarities and differences. Y1 Can use simple charts etc. to identify unknown animals. Y1 Can name a range of animals which includes animals from each of the vertebrate groups. Y1 Can describe the key features of these named animals. Y1		**Assessment** Can name the four seasons and identify when in the year they occur. Y1 Can observe and describe weather in different seasons over a year. Y1 Can observe and describe days as being longer (in time) in the summer and shorter in the. Y1 Can collect information to classify weather and day length in different seasons and present the information in tables or charts to compare the seasons. Y1 Can collect information on features that change with seasons and present in displays. Y1