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Science is our curiosity

Science develops children's problem-solving and critical thinking skills, which will enable them to succeed in school and beyond. It gives children the opportunity to recognise the power of rational explanation, knowledge and most importantly a sense of excitement and curiosity about natural phenomena. By exploring scientific methods and concepts within the three main scientific disciplines of Biology, Chemistry and Physics children will learning to question and marvel at the world around them.	
Year 4 Curriculum	**KPI**
Working scientifically	
Ask relevant questions and use different types of scientific enquiry to answer them.	With some support asks scientifically relevant questions. Makes decisions about what type of observations to make and how long for. Recognises when a fair test is necessary.
Sets up simple practical enquiries comparative and fair tests. Begins to make own decisions for planning and performing simple tests, including observations and measurements.	Selects from a reasonable range of equipment. Identifies things to accurately measure in a simple investigation and specifies units of measure.
Makes systematic and careful observations and, where appropriate, takes accurate measurements using standard units, using a range of equipment.	Systematically records observations and measures accurately. E.g. using thermometers and data loggers.
Gathers, records, classifies and presents data in a variety of ways to help in answering questions.	Gathers data using own format.
Records findings using simple scientific language in a variety of ways.	Selects an appropriate way to best display findings. e.g. drawings, labelled diagrams, keys, bar charts and tables.
Reports on findings from enquiries orally and in writing.	Uses scientific language to report results e.g. displays, presentations of results.
Uses results to draw simple conclusions, make predictions and begin to evaluate	With support describes and explains conclusions i.e. Suggest improvements and raise further questions.
Identifies differences and similarities or changes related to simple scientific concepts	Describes patterns and relationships with scientific ideas and processes.
Use straightforward scientific evidence to answer questions to support their findings.	Uses results to answer enquiry question.

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Knowledge – Animals including humans - Teeth and Digestion	
Describe the simple functions of the basic parts of the digestive system in humans.	**Name and describe the body parts associated with the digestive system: mouth, tongue, teeth, oesophagus, stomach and small and large intestine**
Identify the different types of teeth in humans and their simple functions.	Relate different types of teeth to animal diets Describe how to look after their teeth and know the importance of this.
Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Construct and interpret food chains. Identify the features of different groups e.g. comparing the teeth of carnivores and herbivores.**
Knowledge – States of Matter - Solids, Liquids and Gases	
Compare and group materials together, according to whether they are solids, liquids or gases.	Compare the properties of solids, liquids and gases. Classify different materials using these properties.
Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).	**Describe the properties of water at different temperatures.** **Read a scale on a thermometer.**
Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	**Draw and label a diagram of the water cycle.** **Understand the terms: evaporation, condensation, precipitation.**
Knowledge – Sounds and vibrations	
Identify how sounds are made, associating some of them with something vibrating and that these vibrations travel through a medium to the ear.	
Recognise that sounds get fainter as the distance from the sound source increases.	**Describe the relationship between the volume of a sound and the distance from its source.**
Find patterns between the pitch of a sound and features of the object that produced it	**Describe the relationship between the pitch of a sound and the features of its source**
Find patterns between the volume of a sound and the strength of the vibrations that produced it.	**Describe the relationship between the volume of a sound, the strength of the vibrations and the distance from its source**

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Knowledge – Living things and their habitats - Classification and Interdependence	
Recognise that living things can be grouped in a variety of ways.	Can name and make distinctions between the 5 main types of organism (animals, plants, fungi, bacteria and Protista)
Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	
Recognise that environments can change and that this can sometimes pose dangers to living things.	
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.	
Knowledge – Electricity	
Identify common appliances that run on electricity	Can name a range of electrical devices.
Construct simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.	Describes a circuit as an unbroken path of conductors that allow electricity to flow between a source and a device.
Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery	
Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp light in a simple series circuit.	
Recognise some common conductors and insulators, associate metals with good conductors.	
Pupils might work scientifically by: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	