

Overview **Science** Year 4

	Autumn Term	Spring Term	Summer Term
Big Question	What makes a good civilisation?	How do you leave a legacy?	What makes a good mystery?
Other Subject links	Ancient Greece, map work, living things & habitats. DT - making Greek salad (looking at specific diets of civilisations) Music - Ancient Greek music study	Roman & Celt invaders & settlers. Art - Celtic mosaics, Anglo-Saxon masks	Egypt. DT- making Shadufs

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Living things and their habitats	Animals including humans	Electricity	Sound	Materials and States of Matter	Working Scientifically
National Curriculum <u>Working Scientifically</u> - Asking relevant questions and using different types of scientific enquiries to answer them - Setting up simple practical enquiries, comparative and fair tests - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	- Recognise that living things can be grouped in a variety of ways - 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	- Describe the simple functions of the basic parts of the digestive system in humans - Identify the different types of teeth in humans and their simple functions - Construct and interpret a variety of food chains, identifying producers, predators and prey	- Identify common appliances that run on electricity - Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - 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	- Identify how sounds are made, associating some of them with something vibrating - Recognise that vibrations from sounds travel through a medium to the ear - Find patterns between the pitch of a sound and features of the object that produced it - Find patterns between the volume of a sound and the strength of the vibrations that produced it	- Compare and group materials together, according to whether they are solids, liquids or gases - 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) - Identify the part played by evaporation and condensation in the water cycle and associate the rate of	- Asking relevant questions and using different types of scientific enquiries to answer them - Setting up simple practical enquiries, comparative and fair tests - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gathering, recording,

<ul style="list-style-type: none"> <li>- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>- Identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>- Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>			<ul style="list-style-type: none"> <li>- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>- Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>	<ul style="list-style-type: none"> <li>- Recognise that sounds get fainter as the distance from the sound source increases</li> </ul>	<p>evaporation with temperature</p>	<p>classifying and presenting data in a variety of ways to help in answering questions</p> <ul style="list-style-type: none"> <li>- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>- Identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>- Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>
<p>Knowledge</p>	<p>Living things can be divided into groups based upon their characteristics. Environmental change affects different habitats differently.</p>	<p>Animals have teeth to help them eat. Different types of teeth do different. Food is broken down by the teeth and further in the stomach and</p>	<p>A source of electricity (mains or battery) is needed for electrical devices to work. Electricity sources push electricity round a circuit.</p>	<p>Sound travels from its source in all directions and we hear it when it travels to our ears. Sound can be blocked.</p>	<p>Solids, liquids and gases are described by observable properties. Materials can be divided into solids, liquids and gases. Heating causes solids to melt into liquids and</p>	<p>Know how to ask relevant questions and use different types of scientific enquiries to answer them. Know how to set up simple practical enquiries, comparative</p>

	<p>Different organisms are affected differently by environmental change.</p> <p>Different food chains occur in different habitats.</p> <p>Human activity significantly affects the environment.</p>	<p>intestines where nutrients go into the blood. The blood takes nutrients around the body.</p> <p>Nutrients produced by plants move to primary consumers then to secondary consumers through food chains.</p>	<p>More batteries will push the electricity round the circuit faster.</p> <p>Devices work harder when more electricity goes through them.</p> <p>A complete circuit is needed for electricity to flow and devices to work.</p> <p>Some materials allow electricity to flow easily and these are called conductors.</p> <p>Materials that don't allow electricity to flow easily are called insulators.</p>	<p>Sound spreads out as it travels.</p> <p>Changing the shape, size and material of an object will change the sound it produces.</p> <p>Sound is produced when an object vibrates.</p> <p>Sound moves through all materials by making them vibrate.</p> <p>Changing the way an object vibrates changes its sound.</p> <p>Bigger vibrations produce louder sounds and smaller vibrations produce quieter sounds.</p> <p>Faster vibrations (higher frequencies) produce higher pitched sounds.</p>	<p>liquids evaporate into gases.</p> <p>Cooling causes gases to condense into liquids and liquids to freeze into solids.</p> <p>The temperature at which given substances change state are always the same.</p>	<p>and fair tests</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Use results to make simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>
Vocabulary	Environment, flowering, non-flowers, plants,	Herbivore, carnivore, digestive system, tongue, mouth, teeth	Electricity, electric current, appliances, mains, crocodile	Amplitude, volume, quiet, loud, eat, pitch,	Solid, liquid, gas, particles, state, materials, properties,	Experiment, investigation, fair test, variable, conclusion,

	animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrates, human impact, nature reserves, deforestation.	, oesophagus, stomach, gallbladder, small intestine, pancreas, large intestine, liver, tooth, canine, incisor, molar, premolar, producer, consumer.	clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator.	high, low, particles, instruments, waves.	matter, melt, freeze, water, ice, temperature, process, condensation, evaporation, water vapour, energy, precipitation, collection.	findings, results, method, equipment.
Links to Big Question	Links to individual civilisations in the animal world and how animals are best suited for their 'civilisation'.	Links to the idea of things working together to form one complete 'whole'.	Links to Joseph Swann (Victorian inventor) who created the lightbulb - looking at how the things we create can be our legacy.	Link to Music and local musicians - again, the things we create will be our legacy.	Where does water go when it evaporates? Does it disappear?	How can we work systematically to answer questions? How can we use scientific experiments to answer questions?