

*Cheadle Primary – the school at the heart of the village, free to flourish, ready to learn and succeed.* **Progression of Skills and Knowledge: SCIENCE Year 4**

	Ancient Greece	Digestive System	Roman Empire	The Environment	UK Study Blackpool	UK Study Stockport
Science Topic	Sound	Digestive System	States of matter	Living things and their habitats	Electricity	Scientists and Inventors
<b>SCIENTIFIC ENQUIRY/ &amp; QUESTIONING</b>	Find patterns between the pitch of a sound & features of the object that produced it ?	Generate questions and use scientific evidence that is given to answer questions. Identify similarities related to scientific ideas. Set up a simple enquiry with support. Make observations, record findings and use results to draw simple conclusions. Name parts of the digestive system. Add functions to the parts of the digestive system. Identify the function of teeth in humans. Construct a simple food chain.	To compare and group materials together, according to whether they are solids, liquids or gases by sorting and describing materials into solids, liquids and gases.	To recognise that living things can be grouped in a variety of ways by sorting living things into a range of groups.	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	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers in the context of building a solar oven
<b>OBSERVING</b>	recognise that vibrations from sounds travel through a medium to the ear  find patterns between the volume of a sound and the strength of the vibrations that produced it?  recognise that sounds get fainter as the distance from the sound source increases?	Describe the simple functions of the basic parts of the digestive system in humans	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)? To make systematic, careful and accurate observations and measurements and report on findings from enquiries by displaying results and conclusions by investigating the effect of temperature on drying washing.	Recognise that environments can change and that this can sometimes pose dangers to living things To explore and use classification keys to help group, Identify and name a variety of living things in their local and wider environment by using keys to identify invertebrates found in the local environment.	Identify common appliances that run on electricity  Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit?	To 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) by exploring Kelvin’s discovery of absolute zero
<b>IDENTIFYING &amp; CLASSIFYING</b>	identify how sounds are made, associating some of them with something vibrating? To find patterns between the volume of a sound and the strength of the vibrations that produced it, by performing a dramatisation of how sounds travel. To recognise that vibrations from sounds travel through a medium to the ear, by investigating the best material for absorbing sound.	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	Compare and group materials together, according to whether they are solids, liquids or gases? Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature?	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 my local and wider environment Begin to identify differences, similarities or changes related to simple scientific ideas and processes by identifying vertebrates by their similarities and differences.	Identify common appliances that run on electricity by learning to distinguish between appliances that use and do not use electricity, the different types of electricity and identify how to stay safe when using electricity.	To identify the different types of teeth in humans and their functions by finding out about the invention of toothpaste. To identify ways to look after our teeth. To identify common electrical appliances that run on electricity by exploring Thomas Edison’s work with electricity. To compare and group materials together according to whether they are solids, liquids or gases by exploring the discovery of oxygen.
<b>TESTING &amp; FINDINGS</b>	To identify how sounds are made, associating some of them with something vibrating, by performing a dramatisation of how sounds travel.	Create a model of the mouth, labelling the types and functions of teeth.  t instead of teeth they will be using boiled eggs with shells on as this is similar to enamel on a tooth	To compare and group materials together, according to whether they are solids, liquids or gases by investigating gases and their uses.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions by creating tables and keys showing the characteristics of living things.	Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Recognise some common conductors and insulators, and associate metals with being good conductors?	To use scientific evidence from comparative tests to support their findings by comparing different toothpastes. To take accurate measurements using standard units and a range of equipment, including thermometers by comparing the Kelvin scale with Celsius.
<b>Key Questions</b>	How are sounds made? How does sound travel? How do you hear sound? What is pitch? What is volume?	What is a producer/predator/prey? What is the digestive system and how does it work? What is its function? What are some parts of the parts of the digestive system? Why do we have different types of teeth? What is their purpose?	How can we group materials? How can we compare materials? What happens to plastic when it is heated / cools? What does evaporation do? Water cycle What does condensation do in the water cycle?	What could happen when an environment changes? How could you classify living things? What are some ways to group animals?	What are conductors of electricity? What could we use to insulate? What are the basic parts of a circuit?	What is solar power? What is absolute zero? What is an endangered species?

<b>Key Learning Intentions</b>	To describe and explain sound sources To explain how different sounds travel To explore ways to change the pitch of a sound To investigate ways to absorb sound. To investigate ways to absorb sound To make a musical instrument to play different sounds	To describe the simple functions of the basic parts of the digestive system  To identify the different types of teeth in humans and their simple functions.  To identify differences, similarities by comparing human and animal teeth. To understand food chains and the role of different plants and animals within them.	To sort and describe materials. To investigate gases and explain their properties. To investigate materials as they change state To explore how water changes state To investigate how water evaporates To identify and describe the different stages of the water cycle	To group living things in a range of ways To use a range of methods to sort living things To identify vertebrates by observing their similarities and differences To use a key to identify invertebrates To show the characteristics of living things in a table and a key To recognise positive and negative changes to the local environment To describe environmental dangers to endangered species To present findings orally and in writing	To explain that there are different types of electricity To identify electrical appliances and the types of electricity they use To identify complete and incomplete circuits To identify and sort materials into electrical conductors or insulators To explain how a switch works and why they are needed To record and report on an investigation	To explore deforestation and conservation in Madagascar. To set up an enquiry to find out about soil erosion. To describe Alexander Graham Bell and his inventions. To present findings about Alexander Graham Bell. To build a solar oven and explain how the temperature changes inside it. To build a traffic light using series circuits To describe the properties of oxygen gas. To explain how oxygen was discovered. To explain what Lord Kelvin called 'absolute zero' To accurately use a thermometer
						To describe how Thomas Edison's inventions changed people's lives. To identify appliances that run on electricity. To identify ways to look after our teeth. To investigate the invention of toothpaste
<b>Key Knowledge</b>	Describe sounds around them. <ul style="list-style-type: none"> <li>Identify high and low sounds.</li> <li>Identify loud and quiet sounds.</li> <li>Observe how different sounds are made.</li> </ul> <ul style="list-style-type: none"> <li>Describe how sounds change over distance.</li> <li>Participate in an investigation to find the best material for absorbing sound.</li> <li>Answer questions based on their learning using prompts.</li> <li>Create a musical instrument that will play different sounds.</li> <li>Predict what will happen in an investigation.</li> <li>Make observations describe Alexander Graham Bell and his inventions.</li> </ul>	To describe the function and name parts of the digestive system. Functions Of Teeth: Incisors, Canines, Premolars, Molars, Wisdom Teeth. Children match the functions of teeth to a labelled diagram of the mouth. Children write the type and function of teeth on a diagram of the mouth. Construct a food chain.	Sort materials into solids, liquids and gases. Observe that heating causes melting, and cooling causes freezing. Identify the melting and freezing point of water. Describe evaporation and condensation using practical examples. Describe the effect of temperature on evaporation referring to their investigation. Identify the stages of the water cycle. Predict what will happen in an investigation. Make observations	Sort living things into groups. Generate questions about animals. See similarities and differences between vertebrates. Identify vertebrate groups. Identify the characteristics of living things. Suggest how to have a positive effect on the local environment. Record observations on a map. Name some endangered species	To learn to identify electrical and non-electrical appliances. To recognise how a circuit will work. To name some electrical conductors and insulators To will be able to create a simple series circuit both with and without a switch. To will be able to accurately record their findings in a table. identify the achievements of Maria Telkes Who was Garrett Morgan?	investigate and describe the dangers of deforestation in Madagascar; Describe Gerald Durrell and his conservation work in Madagascar; Pick out key facts with support about Alexander Graham Bell's life and work; Identify the achievements of Maria Telkes Discuss the achievements of Garrett Morgan; To describe Lord Kelvin's life and work;
<b>Key Vocab</b>	vibration, sound wave, volume, amplitude, pitch, ear, particles, distance, soundproof, absorb sound, vacuum, eardrum	Mouth, tongue, teeth, oesophagus, stomach, digestion, digest, digestive system. Incisors, canines, molars, premolars, humans, animals. tooth, decay, questions, scientific, non-scientific, practical enquiries, comparative tests, fair tests, variables. Food chain, predator, consumer, prey, producer, construct, interpret, diagram.	states of matter solids, liquids, gases, water vapour, melt, freeze, evaporate, condense, precipitation Who was Lord Kelvin?	organisms, life processes, respiration, sensitivity, reproduction, excretion, nutrition, habitat, environment, endangered species, extinct, classification, vertebrates, invertebrates, specimen, characteristics	electricity, generate, appliances, battery, circuit,	conservationist. endangered species, solar power, respiration, oxygen,
<b>Key Challenge</b>		Place parts of the digestive system in the correct order. Can use scientific evidence I have been given to answer questions. Look at food chains and food webs to understand what causes tooth decay duodenum, small intestine, large intestine, pancreas, liver, rectum, anus, salivary glands, gallbladder,		To generate questions to use in a classification key To create a classification key	How can electricity flow? What is mains electricity What is battery electricity? renewable, non-renewable, electrons, voltage,	
<b>Yr 4 Support</b>						
<b>Visit or Visitor</b>	STEM Ambassador	Parent Event				
<b>Key text</b>		Magic School Bus – Inside the Human Body				

<b>Resources</b>	Explorify Website	Liquids – water, milk, orange juice, apple juice, coke • Hard-boiled eggs • Containers • Measuring jugs • (Any other liquid or equipment that the children suggested on their Tooth Decay Scientific Enquiry Activity Sheets) • Completed Tooth Decay	Explorify Website	Explorify Website	Explorify Website	Explorify Website
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