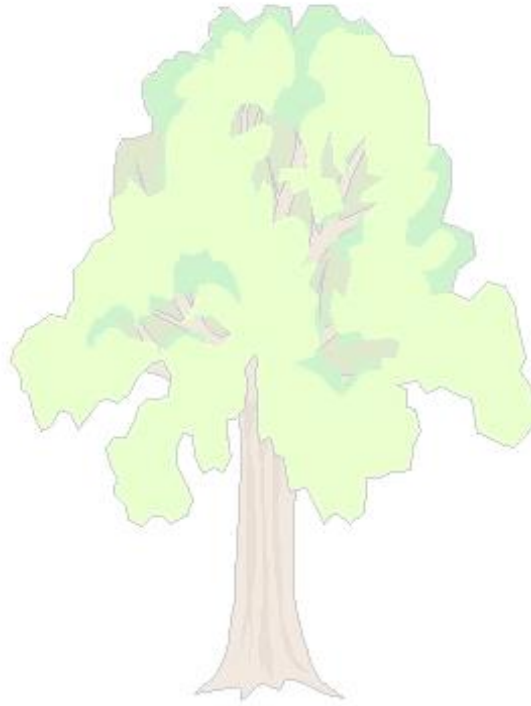


Year 4 Science Long Term Plan

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
How are animals adapted to their habitats? Living Things and their Habitats	How can we hear sound? Sound	How does a lightbulb turn on? Electricity		Where does water end up? States of Matter	What happens to the food we eat? Animals Including Humans



Year 4 Science Medium Term Plan

Term 1 Science –How are living things adapted to their environments?		
National Curriculum Links	Key Vocabulary	Pupil Offer
<p>SCIENCE- Living Things and Their Habitat</p> <ul style="list-style-type: none"> - To be able to recognise that living things can be grouped in a variety of ways. - To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. - To be able to recognise that environments can change and that this can sometimes pose dangers to living things. 	Habitat, micro habitat, pond, meadow, log pile, woodland, river, lake, beach, cliff, organism plant, animal, deciduous, evergreen, vertebrates, invertebrates	Fieldwork – habitat spotting

Term 6	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Lesson Overview including Substantive knowledge	<p>KS1 Retrieval Classification of animals</p> <p>Classification GROUPING LIVING THINGS How can living things be grouped?</p> <p>Pupils will explore the similarities and differences between plants and animals. They will use diagrams to help separate them into groups.</p>	<p>Classification CLASSIFYING LIVING THINGS How can vertebrates be classified?</p> <p>Pupils will learn how vertebrates can be further split into five groups: amphibians, birds, fish, mammals and reptiles. They will group vertebrates according to the specific features of each group</p>	<p>Classification CLASSIFYING LIVING THINGS How can living things be classified?</p> <p>Pupils will use a classification key to identify which species an animal belongs to, by answering a set of questions based on their features.</p>	<p>KS1 Retrieval Pupils have looked at animals in local area and learnt about polar, desert, ocean and forest habitat.</p> <p>Research HABITATS How are habitats different? Pupils will investigate the features of different habitats and make suggestions as to which animals live in each and why.</p>	<p>HABITATS Which habitats suit which animals?</p> <p>Pupils will investigate the features of different animals and make connections between these and what type of habitat they live in.</p>	<p>Retrieval- BIG QUESTION HABITATS How can an organism be effected by a change of environment?</p> <p>Pupils will investigate and discuss what might happen to a specific animal if their habitat changes. They will consider environment and food chains etc.</p>
Working Scientifically	<p>Use simple keys.</p> <p>To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recording findings using simple scientific language, drawings, pictures, labelled diagrams (Venn or Carroll), keys, bar charts, and tables</p>	<p>To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>To be able to recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>To be able to recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Recording findings using simple scientific language, drawings, pictures, labelled diagrams (Venn or Carroll), keys, bar charts, and tables</p>	<p>To be able to recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>
Organisation & Communication	Use keys to group living things into the correct group.	Complete a table of features for each group of vertebrates	Classification keys	Research conditions of different habitats	Fact file of different habitats and how animals are suited to living in each	Group work presentation
Famous People						

Term 2 Science – Sound – How can we hear sounds?

National Curriculum Links	Key Vocabulary	Pupil Offer
SCIENCE- Sound <ul style="list-style-type: none"> - To be able to identify how sounds are made, associating some of them with something vibrating. - To be able to recognise that vibrations from a sound travel through a medium to the ear. - To be able to find patterns between the pitch of a sound and features of the object that produced it. - To be able to find patterns between the volume of a sound and the strength of the vibrations that produced it. - To be able to recognise that sounds get fainter as the distance from the sound source increases. 	Ways to create sound – bang, blow, shake, and pluck Loudness – quiet, quieter, quietest, loud, louder and loudest Pitch - low, lower, lowest, high, higher, and highest Vibrations, source, waves, tuning fork, eardrum	Creating vibrations in water

Term 6	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Lesson Overview including Substantive knowledge	VIBRATIONS What is a sound? Pupils will learn about how sound from a source travels in sound waves in the air through vibrations. They will observe how these vibrations can travel, using equipment such as rice on drums and a tuning fork in water.	Comparative/Fair Testing VOLUME OF SOUND How can the volume of a sound be altered? Pupils will set up their own investigation to find out how the height from which a tube is dropped affects the loudness of the sound produced. Pupils will make predictions, ensure the test is fair and evaluate their investigation once finished.	Comparative/Fair Testing VOLUME OF SOUND What happens to the sound of a drum the further away from it you get? Pupils will set up an investigation to find out what happens the further away you are from the source of the sound. They will make predictions and ensure it is a fair test.	Comparative/Fair Testing PITCH How are different pitches of sound created? Pupils will make predictions of what they think creates different pitches of sound for different objects/instruments.	VIBRATIONS How can we represent a soundwave? Pupils will consolidate their learning all about how soundwaves travel from the source of sound to a person's ear. They will see this demonstrated with an air cannon against a piece of paper and a slinky.	Retrieval- BIG QUESTION How can we hear sounds? Pupils will make predictions of what they think creates different pitches of sound for different objects/instruments.
Working Scientifically	Using straightforward scientific evidence to answer questions or to support their findings	To be able to set up simple fair tests. To be able to make systematic and careful measurements	Using results to draw simple conclusions, make predictions for new values, suggesting improvements and raise further questions	To be able to use a scientific enquiry to answer a question.	To be able to report on findings from an enquiry.	
Organisation & Communication	Investigation	Investigation	Investigation	Practical: children will create different pitches, using instruments, glass bottles and a straw.	Practical: creating soundwaves with a slinky and an air cannon.	Pupils will draw a picture and write an explanation of how sound reaches our ears and what can affect it.
Famous People						

Term 3 Science –How does a bulb light up?

National Curriculum Links	Key Vocabulary	Pupil Offer
SCIENCE- Electricity <ul style="list-style-type: none"> - To be able to identify common appliances that run on electricity. - To be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. - To be able to 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. - To be able to recognise some common conductors and insulators, and associate metals with being good conductors. - To be able to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. 	Series circuit, flow, electrons Components: battery, bulb (lamp) holder, buzzer, crocodile clip, leads, wires, switch, brighter, duller, slow, fast, quiet, loud, conductor, insulator, light, sound, movement, heat Switches – open, close	Complete a circuit to power a vehicle

Term 6	Session 1	Session 2	Session 3	Session 4	Session 5
Lesson Overview including Substantive knowledge	Classification Appliances What appliances run on electricity? Pupils will identify which appliances are powered by electricity and which are battery-powered. They will also identify what affect electricity has on them (e.g. change in heat, movement, light etc.)	Components What is needed to complete a series circuit? Pupils will learn about the components needed to make a series circuit, and therefore make a bulb light up. They will investigate what happens when one part is missing and which components are essential.	Comparative/Fair Testing Components How can a broken circuit be fixed? Pupils will investigate a range of scenarios in which circuits are incomplete or components are broken. They will create an investigation to solve what is wrong with each circuit.	Classification Fair Testing Conductors and insulators What materials conduct electricity? Pupils will investigate which materials can be added to a circuit and still light up a bulb. They will set up an investigation in groups, ensuring they make predictions for each material and discuss how it will be a fair test.	Switches How does a switch effect a circuit? Pupils will investigate the effect of an open or closed switch. They will use scientific vocabulary to explain what happens within the circuit to so cause the bulb to turn on and off. Retrieval- BIG QUESTION Pupils will draw on their knowledge to answer the big question.
Disciplinary Knowledge	Asking relevant questions and using different types of scientific enquiry to answer them	Setting up simple practical enquiries, comparative and fair tests		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Using results to draw simple conclusions, make predictions for new values, suggesting improvements and raise further questions
Organisation and Communication	Table of appliances and sorting how they are effected by electricity.	Practical: setting up a series circuit.	Investigation	Investigation	Investigation
Famous People	Benjamin Franklin				

Term 5 Geography- Where does water end up?

National Curriculum Links	Key Vocabulary	Pupil Offer
SCIENCE- States of Matter <ul style="list-style-type: none"> 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) 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 	Heating, Cooling Evaporation, Condensation Solid, Liquid, Gas Precipitation Water vapour	Water cycle in a bag

Term 5	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Lesson Overview including Substantive knowledge	<p>KS1 Retrieval</p> <p>Pupils have previously looked at different methods for classifying materials</p> <p>Classification Materials</p> <p>How can we group materials according to their characteristics?</p> <p>Pupils will investigate the properties of different materials and use these to identify whether they are solids, liquids or gases.</p>	<p>Materials</p> <p>How can materials change state?</p> <p>Pupils will investigate what happens when solids are heated and whether or not they remain in this state. They will also investigate the rate at which this happens depending on the temperature.</p>	<p>Observing Over Time Materials</p> <p>What happens when a gas is heated?</p> <p>Pupils will investigate what happens to a deflated balloon when it is positioned over an empty bottle and held in a bowl of warm water.</p>	<p>Research Water Cycle</p> <p>What role does evaporation and condensation play in the water cycle?</p> <p>Pupils investigate the water cycle and explain the process in different stages. They will then create a group presentation to share with the class.</p>	<p>Comparative/Fair Testing Water Cycle</p> <p>Will the location of a puddle affect how quickly it evaporates?</p> <p>Pupils will investigate what happens to the size of a puddle and explain why this happens.</p>	<p>Retrieval- BIG QUESTION Water Cycle</p> <p>Can I recreate the water cycle and explain each process?</p> <p>Pupils will create a water cycle in a bag and see the process of evaporation and condensation.</p>
Disciplinary Knowledge	<p>Make systematic and careful observations</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using results to draw simple conclusions, make predictions for new values, suggesting improvements and raise further questions</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings</p>
Organisation and Communication	Sorting different materials based on properties	Investigate how materials change when heated or cooled	Investigate what happens to a balloon	Draw/label water cycle	Investigation	Water cycle in a bag
Famous People						

Term 6 Science –What happens to the food we eat?

National Curriculum Links	Key Vocabulary	Pupil Offer
<p>SCIENCE- Animals including Humans</p> <ul style="list-style-type: none"> - To be able to describe the simple functions of the basic parts of the digestive system in humans. - To be able to identify the different types of teeth in humans and their simple functions. 	<p>Digestive system, oesophagus, stomach, acid, small intestine, protein, vitamin, mineral, carbohydrate, fats, energy, growth, repair, saliva Teeth – Incisors, canines, premolars, molars function, Foodchain – producer, consumer, predator, prey</p>	<p>Use model of digestive system to explain</p>

Term 6	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
<p>Lesson Overview including Substantive knowledge</p>	<p>KS1 and Year 3 Retrieval Pupils have named parts of the body and learnt about the function of bones and muscles.</p> <p>Human body What are the different types of teeth in humans and what are their functions?</p> <p>Pupils will use mirrors to investigate the teeth they have in their own mouths and try to work out the function when eating different foods.</p>	<p>Researching Classifying Human body What are the different types of teeth in humans and what are their functions?</p> <p>Pupils will find out about the functions of each different type of tooth and label these correctly on a drawing of the mouth.</p>	<p>Human body What happens when we chew food?</p> <p>Pupils will investigate and explain what happens in their mouth when they chew food.</p>	<p>Researching Human body What are the simple functions of the complete digestive system in humans?</p> <p>Pupils will recreate the digestive system in a bag and learn about the different functions that help food to be digested.</p>	<p>Year 2 and Year 3 Retrieval Pupils have previously created food chains.</p> <p>Food Chains I can interpret a variety of food chains.</p> <p>Pupils will read a range of food chains and answer questions to work out predators and prey.</p>	<p>Food Chains I can construct a variety of food chains.</p> <p>Pupils will have a go at drawing out their own food chains based on predators and prey they are learning about.</p> <p>Retrieval- BIG QUESTION Pupils will draw on their knowledge to answer the big question.</p>
<p>Disciplinary Knowledge</p>	<p>Make systematic and careful observations</p>	<p>Using results to draw simple conclusions, make predictions for new values, suggesting improvements and raise further questions</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings</p>
<p>Organisation and Communication</p>	<p>Investigate functions of teeth in their own mouths</p>	<p>Label diagram of a mouth</p>	<p>Investigation</p>	<p>Simulate the digestive system in a bag</p>	<p>Read and interpret food chains</p>	<p>Draw food chains</p>
<p>Famous People</p>						