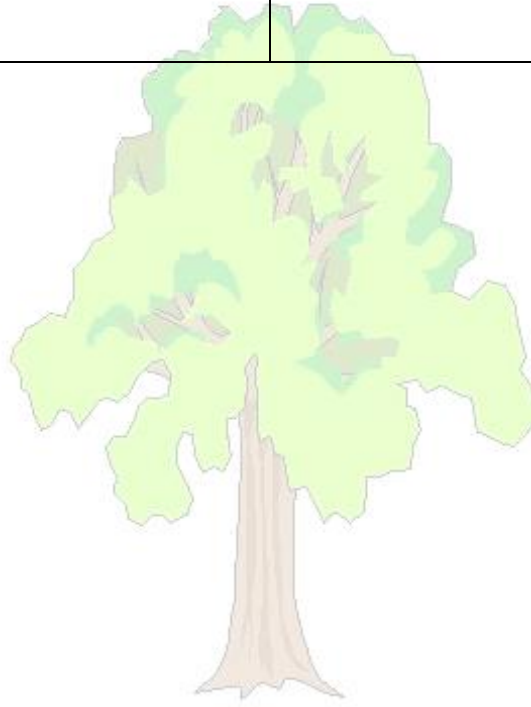


Year 6 Science Long Term Plan

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<p>What is classification? What do different types of microorganism do? Living things and their habitats</p>	<p>What happened when Charles Darwin visited the Galapagos islands? Evolution and inheritance</p>	<p>How do I see? Light</p>	<p>How can we vary the effects of electricity? Electricity</p>	<p>Deforestation: environmental nightmare or necessary evil Living things and their habitats (Revisit and link to rainforests)</p>	<p>How do an animal's living systems work together to maintain a healthy body? Animals including humans</p>



Year 6 Science Medium Term Plan

Term 1 Science- What is classification? What do different types of microorganism do?		
National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics. 	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering	Micro-organism investigation

	Week 1	Week 2	Week 3	Week 4	Week 5
Lesson Overview including Substantive knowledge	<p style="color: #008000; text-align: center;">Researching/Secondary Sources</p> Use secondary sources to learn about the formal classification system devised by Carl Linnaeus and why it is important.	<p style="color: #008000; text-align: center;">Classifying</p> Use first-hand observation to identify characteristics shared by the plants in a group. <p style="text-align: center;">Y4 and Y5 Retrieval Task</p> Recap classification of different animal groups <p style="color: #008000; text-align: center;">Researching/Secondary Sources</p> Use secondary sources to research the characteristics of animals that belong to a group.	<p style="color: #008000; text-align: center;">Classifying</p> Use information about the characteristics of an unknown animal or plant to assign it to a group.	<p style="color: #008000; text-align: center;">Retrieval- BIG QUESTION</p> <p style="color: #008000; text-align: center;">Classifying</p> Classify plants and animals, presenting this in a range of ways e.g. Venn diagrams, Carroll diagrams and keys.	<p style="color: #008000; text-align: center;">Comparative/Fair Testing</p> <p style="color: #008000; text-align: center;">Micro organisms</p> Children to carry out an investigation to find out how to make yeast grow <p style="text-align: center;">Retrieval- BIG QUESTION</p> Conclusion to investigation
Working Scientifically	Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships.		Recording data and results of increasing complexity using classification keys.	Recording data and results of increasing complexity using classification keys.	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Organisation and Communication	Present information about Carl Linnaeus's findings	Drawing plants and animals and labelling characteristics.	Create classification key	Venn diagrams to classify animals	Plan and carry out the investigation. Draw conclusions based on findings.
Famous People	Carl Linnaeus				

Term 2 Science- What happened when Charles Darwin visited the Galapagos islands?

National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	Charles Darwin's Finches experiment

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Lesson Overview including Substantive knowledge	<p>How and why have species evolved over time? Use models to demonstrate evolution - 'Darwin's finches' bird beak activity.</p>	<p>Y2 and Y4 Retrieval Task Revisit knowledge about animal habitats and the impact on animals.</p> <p>Researching/Secondary Sources How can species adapt to their environment? Use secondary sources to find out about how the population of peppered moths changed during the industrial revolution.</p>	<p>Y3 Retrieval Task Pupils have previously learnt about how fossils are formed</p> <p>What do fossils show us? Make observations of fossils to identify living things that lived on Earth millions of years ago.</p> <p>Researching/Secondary Sources Research the work of Mary Anning and how this provided evidence of evolution.</p>	<p>Comparing inherited features Compare photo of you and a family member- can you see any inherited features? What about personality traits? Identify features in animals and plants that are passed on to offspring and explore this process by considering the artificial breeding of animals or plants.</p>	<p>Researching/Secondary Sources Compare the ideas of Charles Darwin and Alfred Wallace on evolution. Research the theories of Alfred Wallace Create a comparison list</p>	<p>Retrieval- BIG QUESTION Explain the different theories about evolution and inheritance Use all of the information gained throughout the unit to share learning</p>
Working Scientifically	Using test results to make predictions to set up further comparative and fair tests	Reporting and presenting findings from enquiries, including causal relationships.	Identifying scientific evidence that has been used to support or refute ideas or arguments.		Identifying scientific evidence that has been used to support or refute ideas or arguments.	Identifying scientific evidence that has been used to support or refute ideas or arguments.
Organisation and Communication	Recording and drawing conclusions of investigation	Write a detailed explanation of how peppered moths changed.	Research notes about Mary Anning.	Using family photographs, describe the inherited characteristics from parent to child.	Compare the differences and similarities between the two theories.	Double-page-spread presentation to share research and answer the big question
Famous People	Charles Darwin		Mary Anning		Alfred Wallace	

Term 3 Science- How do I see?

National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	straight lines, light rays	Investigate how light moves

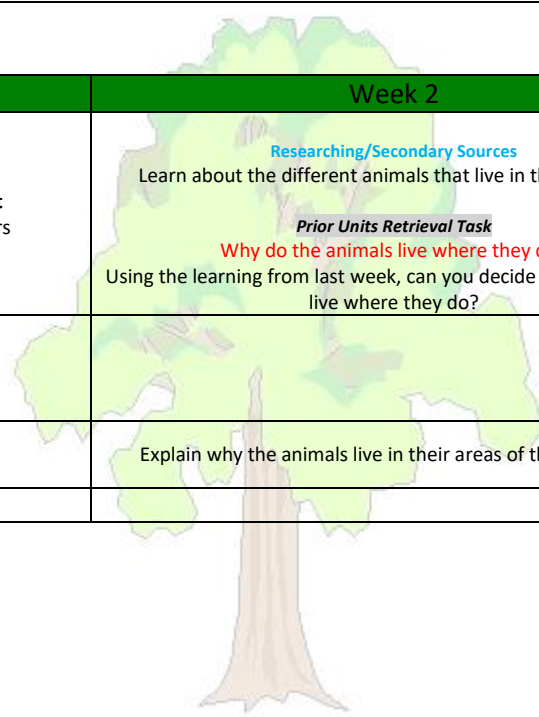
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Lesson Overview including Substantive knowledge	Y3 Retrieval What do you know how light? Light and dark Shadows Reflection Protecting eyes from the sun	Pattern Seeking Light travels in straight lines- prove it! Explore different ways to demonstrate that light travels in straight lines. Children to find ways to prove the statement. Are there any exceptions to the rule?	How do my eyes work? Use BBC Bitesize video to show how light reflects of an object into our eyes and this is how we see them. Show how the pupils react to light (NB, never shine a light into your eyes)	Researching When doesn't light behave in the way you would expect Explore the uses of the behaviour of light, reflection and shadows, such as in periscope design, rear view mirrors and shadow puppets.	Retrieval- BIG QUESTION What do you now know about light? Using all of the learning and exploration, create a presentation to show what you have found out. Working in small groups, choose a way to present it.	
Working Scientifically		Using test results to make predictions to set up further comparative and fair tests		Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate		
Organisation and Communication	Quiz	Annotated photographs from exploration	Labelled diagram to explain how eyes see	Can describe how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape	Could be: a model with a detailed explanation a Powerpoint presentation with all the learning a verbal presentation with diagrams a booklet with all the learning	
Famous People						

Term 4 Science- How can we vary the effects of electricity?

National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram. 	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage	Creating moving vehicles

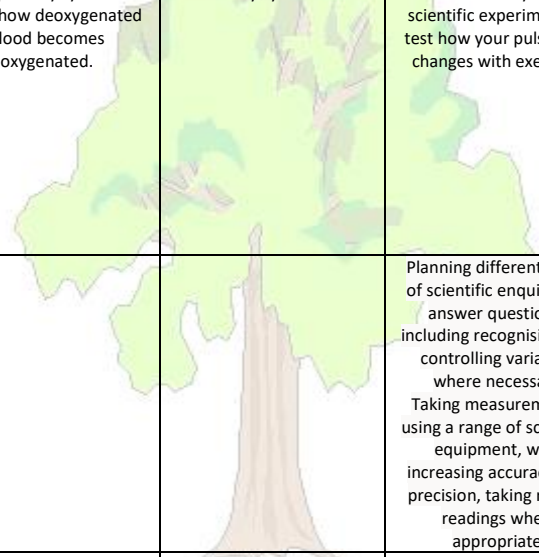
Term 3	Week 2	Week 3	Week 4	Week 5	Week 6
Lesson Overview including Substantive knowledge	<p>Y4 Retrieval</p> <p>Pupils to retrieve and apply their knowledge to form a circuit.</p> <p>How does a circuit operate?</p> <p>Explain how a circuit operates to achieve particular operations, such as to control the light from a torch with different brightness or make a motor go faster or slower</p>	<p>Comparative/Fair Testing</p> <p>Circuit problem solving</p> <p>Make circuits to solve particular problems, such as a quiet and a loud burglar alarm.</p> <p>Learn the symbols for a circuit diagram.</p>	<p>Comparative/Fair Testing</p> <p>Carry out fair tests exploring changes in circuits.</p>	<p>Retrieval- BIG QUESTION</p> <p>Moving Vehicles</p> <p>Make circuits that can be controlled as part of a DT project. Children to use their knowledge of circuits to make a WW2 vehicle that moves.</p>	
Working Scientifically	Using test results to make predictions to set up further comparative and fair test	Using test results to make predictions to set up further comparative and fair test	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
Organisation and Communication	Make predictions and share results	Drawing a circuit diagram.	Answer the question: what happens when we change components in a circuit?	Design and plan a motorised vehicle then evaluate the finished product.	
Famous People					

Term 5 Science- What is classification? What do different types of microorganism do? (Revisit and link to rainforests)		
National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics. 	Rainforest, habitat, biome, biodiversity	Creating an imaginary rainforest animal.

Term 5	Week 1	Week 2	Week 3
Lesson Overview including Substantive knowledge	Learn about the different layers of the rainforest Think about the characteristics of each of the layers	 <p style="text-align: center;">Researching/Secondary Sources</p> <p style="text-align: center;">Learn about the different animals that live in the rainforest</p> <p style="text-align: center;">Prior Units Retrieval Task</p> <p style="text-align: center;">Why do the animals live where they do?</p> <p style="text-align: center;">Using the learning from last week, can you decide why the animals live where they do?</p>	<p style="text-align: center;">Retrieval- BIG QUESTION</p> <p style="text-align: center;">Create an imaginary animal which has features from one or more groups.</p> <p style="text-align: center;">Think about where it would live in the rainforest, what characteristics it would need and why.</p>
Working Scientifically			Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Organisation and Communication	Draw and label the layers of the rainforest	Explain why the animals live in their areas of the rainforest	Draw your animal and write an explanation about its features.
Famous People			

Term 5/6 Science- How do an animal's living systems work together to maintain a healthy body? Animals including humans

National Curriculum Links	Key Vocabulary	Pupil Offer
Pupils should be taught to: <ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans. 	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle, internal organs, circulatory system, digestive, digestion, substances	Learn how to take a pulse

Term 5/6	Week 4	Week 5	Week 6	Week 1	Week 2	Week 3	Week 4	Week 6
Lesson Overview including Substantive knowledge	<p>Working scientifically Collect ideas about how we are going to answer the big question</p> <p>Year 3 and 4 Retrieval - Identify what animals including humans need - Describe basic parts of the digestive system - Identify the different types of teeth</p>	<p>Researching/Secondary Sources How does the heart pump blood around the body? Learn the names for the different parts of the heart Learn how blood is pumped around the body to the different organs.</p>	<p>Researching/Secondary Sources How do the lungs oxygenate the blood? Label parts of the respiratory system. Learn how deoxygenated blood becomes oxygenated.</p>	<p>Create a role play model for the circulatory system Children to use their knowledge of how the circulatory systems work</p> 	<p>Comparative/Fair Testing To recognise the impact of exercise on the way their bodies function Plan and carry out a scientific experiment to test how your pulse rate changes with exercise.</p>	<p>Year 4 Retrieval Retrieve information on the parts of the digestive system.</p> <p>Researching/Secondary Sources To know how water and nutrients are transported in animals including humans. Draw and label parts of the digestive system.</p>	<p>Year 3 Retrieval To recognise the impact of diet on the way their bodies function Research a balanced diet- discuss that there are no "good" and "bad" foods and that a healthy diet is one which has balance.</p> <p>Researching/Secondary Sources To recognise the impact of drugs on the way their bodies function. BBC Bitesize information about drugs and alcohol.</p>	<p>Retrieval- BIG QUESTION Explain how to live a healthy life Children to use all the information learned this term to</p>
Working Scientifically	Planning different types of scientific enquiries to answer questions.				Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate			
Organisation and Communication	Quiz	Label parts of the heart	Label parts of the respiratory system	Create a role play model which will be filmed. Annotate the recording to explain the process	Record the plan for the investigation then draw conclusions from the experiment.	Draw and label the digestive system.	Explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body	Create a leaflet to explain how to lead a healthy life that can be shared with younger students.
Famous People								