

Aims National Curriculum Aims for Key Stage 1 & 2

All Pupils should have opportunity to:

Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.

Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.

Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

**Science
Year 4**

Statutory Curriculum Objectives	Can I statements	Island Invasion	Who Cares	Endangered Environments
LIVING THINGS & THEIR HABITATS: <i>Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge</i>	<i>Can I read, spell and understand scientific vocabulary? vertebrate, fish, amphibians, reptiles, birds, mammals, invertebrates, habitats, herbivore, omnivore, carnivore</i>			
LIVING THINGS & THEIR HABITATS: <i>Recognise that living things can be grouped in a variety of ways</i>	<i>Can I group living things in a variety of ways?</i>			
LIVING THINGS & THEIR HABITATS W/S: <i>W/S: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</i>	<i>Can I record the animals and insects that live in our environmental area/the creek?</i>			
LIVING THINGS & THEIR HABITATS: <i>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</i> W/S: <i>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</i>	<i>Can I classify living things using a key?</i>			
LIVING THINGS & THEIR HABITATS: <i>Recognise that environments can change and that this can sometimes pose dangers to living things.</i>	<i>Can I recognise that environments can change and that this can sometimes pose dangers to living things?</i>			

<p>W/S: Asking relevant questions and using different types of scientific enquiries to answer them</p>	<p>Can I explore the positive and negative impact humans have on environments?</p>			
<p>LIVING THINGS & THEIR HABITATS: Uses and implications of science today and for the future</p>	<p>Can I learn about how scientists are working to protect living things from extinction? (gene banks, rearing and releasing animals back to the wild, protecting habitats)</p>			
<p>EXPERIENCES- LIVING THINGS AND THEIR HABITATS Children should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. Pupils should learn about flowering and non-flowering plants such as herbs and moss.</p>				
<p>ANIMALS INC. HUMANS: Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge</p>	<p>Can I read, spell and understand scientific vocabulary? Mouth, tongue, oesophagus, stomach, intestine, anus, canine, incisor, molar.</p>			
<p>ANIMALS INC. HUMANS: Describe the simple functions of the basic parts of the digestive system in humans W/S Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Can I draw, label and describe the functions of the human digestive system?</p>			
<p>ANIMALS INC. HUMANS: Identify the different types of teeth in humans and their simple functions W/S Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Can I identify the different types of teeth in humans and their simple functions? Can I draw diagrams and label them?</p>			
<p>ANIMALS INC. HUMANS W/S: Setting up simple practical enquiries, comparative and fair tests W/S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Can I investigate which liquid causes the most tooth decay?</p>			
<p>ANIMALS INC. HUMANS W/S: Using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Can I compare the teeth of herbivores and omnivores? Can I suggest reasons for their differences?</p>			

<p>ANIMALS INC. HUMANS: Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>This builds on content from Year 2 (basic sea and coastal food chains)</p>	<p>Can I construct and interpret a food chain? (identifying producers, predators and prey)</p>			
<p>ANIMALS INC. HUMANS: Uses and implications of science today and for the future</p>	<p>Can I learn about dental science and how it has changed and advanced over time? (Toothpaste, brush design, dentistry, x-ray, braces, cavities and fillings etc.)</p> <p>Can I say how to look after my teeth?</p>			
<p>EXPERIENCES- ANIMALS INC. HUMANS: Children should find out what damages teeth and how to look after them.</p>				
<p>STATES OF MATTER: Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge</p>	<p>Can I read, spell and understand scientific vocabulary? solid, liquid, gas, heating, cooling, evaporation, condensation, temperature, water cycle</p>			
<p>STATES OF MATTER W/S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Can I explore a variety of everyday materials? Can I develop simple descriptions of the states of matter?</p>			
<p>STATES OF MATTER: Compare and group materials together, according to whether they are solids, liquids or gases</p>	<p>Can I compare and group materials together, according to whether they are solids, liquids or gases?</p>			
<p>STATES OF MATTER: 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)</p> <p>W/S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Can I observe that some materials change state when they are heated or cooled?</p> <p>Can I measure or research the temperatures at which materials change state, in degrees Celsius?</p>			
<p>STATES OF MATTER: Identify the part played by evaporation and condensation in the water cycle and</p>	<p>Can I describe the water cycle? (using condensation and evaporation)</p>			

associate the rate of evaporation with temperature <i>W/S: Identifying differences, similarities or changes related to simple scientific ideas and processes</i>	Can I associate the rate of evaporation with temperature?			
STATES OF MATTER <i>W/S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</i>	Can I observe and record evaporation over a period of time? (Puddle on playground)			
STATES OF MATTER: <i>Uses and implications of science today and for the future</i>	Can I look at NASA and their role in measuring global water cycles?			
EXPERIENCES- STATES OF MATTER: <i>Children should explore the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). Children should observe evaporation happening slowly over time and begin to understand the water cycle.</i>				
ELECTRICITY: <i>Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge</i>	Can I read, spell and understand scientific vocabulary? circuit, bulb, cell, wire, conductor, insulator, switch, buzzer, lamp, battery,			
ELECTRICITY: <i>Identify common appliances that run on electricity</i>	Can I identify electrical appliances?			
ELECTRICITY: <i>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</i> <i>W/S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</i>	Can I construct a simple series electrical circuit? Can I identify and name the basic parts of a simple circuit? Can I draw and label an electrical circuit? Can I use a key?			
ELECTRICITY <i>W/S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i>	Can I explore what happens when I add more bulbs and cells to a circuit and make a simple conclusion?			
ELECTRICITY: <i>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</i> <i>W/S: Using results to draw simple conclusions, make predictions for new</i>	Can I identify whether or not a lamp will light in a simple series circuit? Can I suggest how to improve a circuit?			

values, suggest improvements and raise further questions				
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	Can I recognise that a switch opens and closes a circuit? Can I identify whether or not a lamp lights in a simple series circuit based on the switch?			
ELECTRICITY: Recognise some common conductors and insulators, and associate metals with being good conductors. ELECTRICITY W/S: Setting up simple practical enquiries, comparative and fair tests	Can I identify electrical conductors and insulators? Can I investigate if all metals are good conductors?			
ELECTRICITY: Uses and implications of science today and for the future	Can I learn about how renewable energy is generated? Can I say why this is important?			
EXPERIENCES- ELECTRICITY: Children should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should be taught about the dangers of electricity				
SOUND: Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading knowledge and spelling knowledge.	Can I use, spell and understand scientific vocabulary? Vibration, sound wave, pitch, volume, ear, ear drum, medium,			
SOUND: Identify how sounds are made, associating some of them with something vibrating W/S: Asking relevant questions and using different types of scientific enquiries to answer them W/S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of	Can I identify how sounds are made? (associating some of them with something vibrating) Can I carefully observe items that vibrate to create sound?			

equipment, including thermometers and data loggers				
SOUND: Recognise that vibrations from sounds travel through a medium to the ear	Can I explain how sound vibrations travel?			
SOUND: Find patterns between the pitch of a sound and features of the object that produced it	Can I investigate what causes a change in pitch?			
SOUND: Find patterns between the volume of a sound and the strength of the vibrations that produced it	Can I describe how vibrations effect volume?			
SOUND: Recognise that sounds get fainter as the distance from the sound source increases. W/S: Setting up simple practical enquiries, comparative and fair tests W/S: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions W/S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables W/S: Using straightforward scientific evidence to answer questions or to support their findings.	Can I investigate and recognise that sounds get fainter as the distance from the sound source increases? Can I gather data and present it to answer a question? Can I record my findings? Can I use evidence to support my findings?			
SOUND: Uses and implications of science today and for the future	Can I explore how our scientific knowledge of sound has grown over time and contributed to technological advancements? e.g. telephones, hearing aids, sonar			

EXPERIENCES-SOUND: Pupils should explore how sound is made through vibration in a range of different musical instruments from around the world. Pupils should investigate how pitch and volume can be changed. Pupils should work scientifically to experiment and learn about patterns in sounds e.g. different size saucepan lids, elastic bands of different thickness. Pupils should learn about insulating from sound. Pupils could make and enjoy their own instruments.

Working Scientifically- Planned Investigations	Island Invasion	Who Cares	Endangered Environments
<i>W/S: Asking relevant questions and using different types of scientific enquiries to answer them</i>		✓	
<i>W/S: Setting up simple practical enquiries, comparative and fair tests</i>	✓	✓	
<i>W/S: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</i>	✓	✓	✓
<i>W/S: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</i>		✓	✓
<i>W/S: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</i>		✓	
<i>W/S: Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</i>	✓	✓	✓
<i>W/S: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i>	✓		
<i>W/S: Identifying differences, similarities or changes related to simple scientific ideas and processes</i>			✓
<i>W/S: Using straightforward scientific evidence to answer questions or to support their findings.</i>		✓	