



Subject Area – Science Year Group – 6

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer1	Summer 2
Knowledge	Living things and their habitats	Electricity	Light	Evolution Inheritance	Animals including humans	
Scientific enquiry <i>observing over time</i> <i>pattern seeking</i> <i>identifying</i> <i>classifying and grouping</i> <i>comparative and fair testing</i> <i>researching</i> <i>draw conclusions</i> <i>use evidence to justify</i>	Classifying and grouping Researching Observing over time Fair testing Draw conclusions Use evidence to justify	Comparative and fair testing Pattern seeking and identifying Use evidence to justify Draw conclusions	Comparative and fair testing Draw conclusions	Researching Observing over time	Researching Observing over time Comparative and fair testing Pattern seeking	
Working scientifically skills Science Ninja skills included: Observation, Measurement, Recording Equipment	To present results Observation Ask scientific questions Prediction Use equipment Recording Measuring	To gather and record results To evaluate an investigation Models to explain scientific ideas Observation Prediction Use equipment Recording Ask scientific questions	Prediction To measure accurately Models to explain scientific idea Observation Use equipment Recording Evaluate an investigation ask scientific questions	Ask scientific questions Models to explain a scientific idea	Predict results Present results Interpreting results Draw conclusions Models to explain scientific idea Observation Recording Measuring Using equipment ask scientific questions	
Building science capital	Natural History Museum trip School cook talk about	Visitor: builder/electrician	Science museum Visitor: Builder / electrician	Natural History Museum	Visit from a Dr/Nurse	

	food hygiene, storing food safely (microbes)					
Composite knowledge (the engine)	<p>The classification of living things</p> <p>Significance of Carl Linneus as a pioneer of classification</p> <p>How living things are classified based on specific characteristics</p>	<p>The main components of a circuit</p> <p>The correct symbols which represent the components of a circuit</p> <p>Effect of changing components in an electrical circuit</p> <p>Function of the components</p> <p>Compare and give reasons for variations on how components function</p>	<p>How light travels</p> <p>How humans see things</p> <p>Formation of shadows</p>	<p>The process of evolution by natural selection</p> <p>The significance of Darwin's contribution to modern scientific thinking.</p> <p>The inheritance of features</p>	<p>The main parts of the human circulatory systems</p> <p>The functions of the heart, blood vessels and blood</p> <p>The function of the lungs</p> <p>The impact of diet, exercise and lifestyle on the way human bodies function</p>	
Component knowledge (the wheels and cogs)	<p>-describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>-give reasons for classifying plants and animals based on specific characteristics</p> <p>-plan and carry out an investigation into microbes over time</p>	<p>-associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>-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</p> <p>-use recognised symbols when representing a simple circuit in a diagram</p>	<p>-recognise that light appears to travel in straight lines</p> <p>-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</p> <p>-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</p>	<p>-recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>-recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>-identify how animals and plants are adapted to suit their environment in</p>	<p>-identify and name the main parts of the human circulatory system, describe the functions of the heart, blood vessels blood and lungs</p> <p>-investigate the impact of exercise and diet on the human body</p> <p>recognise the impact of alcohol/ drugs and lifestyle on the way their bodies function</p> <p>-describe the ways in which nutrients and water</p>	

			-use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	different ways and that adaptation may lead to evolution	are transported within animals, including humans	
Vocabulary	Linnaean Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects	Lamp, Voltage, Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Cell, Components	opaque, translucent, transparent, angle of incidence, periscope, light source Refraction, Reflection, Light, Spectrum, Colour,	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics	Circulatory, Heart, Blood Vessels, Veins, Arteries, Pulmonary arteries and veins, Aorta, Oxygenated, Respiratory, Diaphragm, Trachea, Bronchioles, Deoxygenated, Valve, Lungs Exercise, Respiration, Prescription, capillaries	
Explanation or Conclusion sentence starters, support sentences	<p>Carl Linnaeus created the...the purpose of which is....</p> <p>Animals can be sorted into groups by... This is because.... To make a classification key, first Microorganism can be.... an example of helpful..... and harmful types The fair test should have one variable because... A variable is... In conclusion ..</p>	<p>Symbols are used to..... to represent When a component in a circuit is changed..... This is because ...</p> <p>The way components function varies because firstly... The fair test should have one variable because... A variable is... In conclusion..</p>	<p>The eye sees an object by.... This because.. Draw a diagram to show Reflection is ...the reasons for this are A periscope works by.. A shadow is formed when.... The size of a shadow changes when...</p>	<p>Evolution is the process..</p> <p>In conclusion fossils can be used as evidence of evolution because....</p> <p>Inheritance is</p> <p>Offspring do not always look like their parents because</p> <p>An example of adaptation is... This is because...</p>	<p>The key features of the heart are...The is important because it...</p> <p>The functions of the lungs are...</p> <p>The ...is joined to the....If you do more regular exercise your vital capacity will.....</p> <p>An athlete's vital capacity is.... compared to a non-athlete. This is because...</p>	

<p>Links to prior knowledge TBC</p>	<p>Year 2 Year 4 Year 5</p>	<p>Year 4</p>	<p>Year 3</p>	<p>Year 3</p>	<p>Year 1 Year 2 Year 3 Year 4 Year 5</p>	
<p>Key knowledge for assessment</p>	<p>Classify living things into groups according to characteristics, differences, etc.</p> <p>Explain their reasoning for classifying different plants and animals based on specific characteristics</p> <p>Name the microorganisms and explain examples of helpful and harmful types</p> <p>Understand what a fair test and variable is</p>	<p>Name and use the correct symbols to represent the components of a circuit</p> <p>Understand the effect of changing components in an electrical circuit</p> <p>Compare and give reasons for variations on how components function</p>	<p>Meanings of the words opaque, translucent, transparent</p> <p>Understand that light travels from a source in straight lines</p> <p>Understand how humans see things</p> <p>What reflection is; working scientifically to make a periscope</p> <p>Describe why shadows are formed as the same shape as objects and why the size changes</p>	<p>Explanation of evolution, , fossilisation and what a fossil is</p> <p>Recognise the use of fossils as evidence of evolution</p> <p>Compare fossil evidence</p> <p>Explanation of inheritance (human) understand difference between inherited and acquired characteristic -recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>	<p>Identify and name the main parts of the human circulatory system</p> <p>Describe the functions of the heart, blood vessels, blood and lungs</p> <p>Understanding why a healthy diet and exercise important</p> <p>Understand the dangers to health of alcohol and non-prescription drugs</p> <p>Recognise reasons as to why is it important to have a healthy lifestyle</p>	
<p>Key knowledge assessment questions (Approx. 5)</p>	<p>What did Carl Linnaeus create and why? Give 2 different ways animals could be sorted into 2 groups What is the name of the original level of groupings that include 'animal' and</p>	<p>Label symbols Draw a circuit diagram What happens to the bulb in different circuits? How does the amount of voltage affect the brightness of a light bulb? Thinking about your</p>	<p>What do opaque, translucent, transparent mean? Draw a diagram to show how the eye sees an apple Draw and label an example of reflection</p>	<p>Explain what evolution means Explain what a fossil is How long does it take to make a fossil? How can we use fossils as evidence of evolution? Compare a fossil with a</p>	<p>What are the functions of the heart, blood and blood vessels? What are the main parts of the human circulatory system? What are the functions of the lungs?</p>	

	<p>'plant'?</p> <p>Use a key to sort a group of animals</p> <p>For the 3 types of microorganism an example of helpful and harmful types</p>	<p>investigation-what is a variable?</p>	<p>Label a diagram showing how a periscope works</p> <p>Describe how a shadow is formed when an opaque object is put in front of a light source</p> <p>How does the size of a shadow change as an opaque object is moved closer to a light source?</p>	<p>skeleton (1 x difference and similarity)</p> <p>Explain what inheritance means</p> <p>Show which are inherited and acquired features of a human</p> <p>Using an example explain what adaptation is</p>	<p>How are nutrients and water transported through the human body?</p> <p>What is a healthy lifestyle?</p> <p>What impact does alcohol and drugs have on the body?</p>	
<p>Cross-curricular links</p>	<p>Victorians- improving microscopes allowed for better study of microbes/ research into public health</p>	<p>Victorians - electricity introduced into domestic homes</p> <p>Literacy -TheBig Write</p> <p>Report writing- investing electricity</p>	<p>Literacy -The Big Write</p> <p>Instructions how to make a periscope</p> <p>DT - Making a periscope</p> <p><i>Refer to Victorian invention (USA) light bulb learning in Y3/4?</i></p>		<p>Maths –statistics</p> <p>Reading- comprehension texts the circulatory and respiratory system.</p> <p>DT -make a model of the heart / lungs</p> <p>RSHE</p>	