



Science MTP: Sequence of lessons		Animals including Humans (Circulatory System) (Autumn 1)		Year 6	Focus Scientist: <b>William Harvey</b>	
<p><u>Reference to the Programme of Study 2014</u></p> <p><b>NB – Parts of this unit will need to be taught in accordance with your school's drug education policy.</b></p> <p>Pupils should be taught to: Identify and name the main parts of the human circulatory system, and explain 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.</p>			<p><u>Key vocabulary</u></p> <p>Circulatory system – heart, blood, veins, arteries, pulse, clotting Diet – balanced, vitamins, minerals, proteins, carbohydrates, sugars, fats Drugs – caffeine, nicotine, alcohol, cannabis, cocaine, heroine Lifestyle – healthy</p>			
<b>Lesson 1</b>	<b>Lesson 2</b>	<b>Lesson 3</b>	<b>Lesson 4</b>	<b>Lesson 5</b>	<b>Lesson 6</b>	<b>Lesson 7</b>
To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood.	To learn about a significant scientist ( <b>William Harvey</b> ).	To be able to identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood.  To be able to plan pattern-seeking enquiry.	To be able to explain the functions of blood.	To be able to describe the ways in which nutrients and water are transported within animals, including humans.	To be able to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	To be able to recognise the impact of drugs and alcohol on the way bodies function.
<b>Heart</b>	<b>William Harvey</b>	<b>Exercise Investigation</b>	<b>Blood</b>	<b>Water</b>	<b>Diet and Exercise</b>	<b>Drugs and Alcohol</b>
What is the function of the heart?	Why is William Harvey a significant scientist?	Is there a relationship between the type of exercise that you do and the number of heart beats per minute?	What are the functions of blood?	Why do we need to drink water?	Do all people need the same amount of calories?	How do drugs and alcohol affect us?



Science MTP: Sequence of lessons			Evolution and Inheritance (Autumn 2)	Year 6	Focus Scientist: <b>Charles Darwin</b>
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to:            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.</p>			<p><u>Key vocabulary</u></p> <p>Evolution, evolve Natural selection            Survival Reproduction            Offspring, parents, siblings Environment            Variation Fossils; ammonites, belemnites, micrasters, etc</p>		
<p><b>Lesson 1</b></p> <p>To be able to 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><b>Lesson 2</b></p> <p>To be able to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p>	<p><b>Lesson 3</b></p> <p>To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>To be able to plan an enquiry that will answer a question.</p>	<p><b>Lesson 4</b></p> <p>To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p><b>Lesson 5</b></p> <p>To be able to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p><b>Lesson 6</b></p> <p>To be able to identify how plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>To be able to recognise which secondary sources will be most useful to research ideas (non-statutory).</p>
<p><b>Fossils</b></p> <p>How do fossils show changes?</p>	<p><b>Inheritance</b></p> <p>Are all siblings of living things identical?</p>	<p><b>Animal Adaptations</b></p> <p>Which shape feet are best for swimming?</p>	<p><b>Camouflaging</b></p> <p>How do different animals use camouflage to survive?</p>	<p><b>Animal Survival</b></p> <p>How are animals suited to where they live?</p>	<p><b>Plant Survival</b></p> <p>How have different plants around the world evolved to survive?</p>



Science MTP: Sequence of lessons			Living Things and Habitats (Spring-Summer)		Year 6	Focus Scientist: <b>Beatrix Potter (Mycologist, study of fungi)</b>
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: 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.</p>			<p><u>Key vocabulary</u></p> <p>Classification      Vertebrate, invertebrate Kingdoms: animal, plant, 'micro-organism' Classes: amphibian, reptile, bird, mammal,      Scales, feathers      Flowering plant, non-flowering plant</p>			
<p><b>Lesson 1</b></p> <p>To give reasons for classifying plants and animals based on specific characteristics</p>	<p><b>Lesson 2</b></p> <p>To classify plants based on specific characteristics.</p> <p>WS: To classify plants using diagrams and labels.</p>	<p><b>Lesson 3</b></p> <p>To classify plants based on specific characteristics.</p> <p>WS: To be able to make a key to classify plants.</p>	<p><b>Lesson 4</b></p> <p>To be able to give reasons for classifying plants and animals based on specific characteristics.</p> <p>WS: To be able to identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p><b>Lesson 5</b></p> <p>To investigate whether yeast is a living organism.</p> <p>WS: To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>WS: To report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree.</p>	<p><b>Lesson 6</b></p> <p>To explain how microorganisms are grouped and classified.</p> <p>WS: To sort and classify.</p>	
<p><b>Classifying Organisms</b></p> <p>How can we classify living things?</p>	<p><b>Classifying Trees</b></p> <p>How can we classify trees?</p>	<p><b>Classifying Plants</b></p> <p>How can we classify different flowering plants?</p>	<p><b>Bees and Butterflies</b></p> <p>How can attract more bees and butterflies into the school grounds?</p>	<p><b>Living Organisms</b></p> <p>Is yeast a living organism?</p>	<p><b>Grouping Microorganisms</b></p> <p>How can microorganisms be classified?</p>	



Science MTP: Sequence of lessons		Electricity (Spring)		Year 6	Focus Scientist: <b>Nikola Tesla</b>
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to:            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.</p>			<p><u>Key vocabulary</u></p> <p>Electricity, Volts            Series circuit            Components: battery, bulb (lamp), bulb (lamp) holder, buzzer, crocodile clip, leads, wires, switch            Describing words: brighter, duller, slow, fast, quiet, loud            Conductor, insulator            Resistance            Effects of electricity: Light, sound, movement, heat</p>		
<p><b>Lesson 1</b></p> <p>To understand the importance of the major discoveries in electricity.</p> <p>WS: To identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p><b>Lesson 2</b></p> <p>To recognise and draw scientific circuit symbols.</p> <p>WS: To record using scientific diagrams.</p>	<p><b>Lesson 3</b></p> <p>To observe and explain the effects of differing voltages in a circuit.</p> <p>WS: To be able to plan a fair test by recognising the control variables.</p> <p>To recording data and results using tables.</p>	<p><b>Lesson 4 &amp; Lesson 5</b></p> <p><b>*This lesson will take a full 2 hours*</b></p> <p>To compare and give reasons for variations in how components function.</p> <p>WS: To plan an investigation.</p>	<p><b>Lesson 6</b></p> <p>To compare and give reasons for variations in how components function.</p> <p>WS: To make systematic observations.</p>	
<p><b>Major Discoveries</b></p> <p>How Has Electricity affected our lives?</p>	<p><b>Circuits and Symbols</b></p> <p>What do each of the circuit symbols look like?</p>	<p><b>Volts</b></p> <p>How will the number of batteries (amounts of Volts) affect the brightness of the bulb?</p>	<p><b>Bulbs Buzzers Switches</b></p> <p>Does wire length affect how components in a circuit work?</p>	<p><b>Conductive Dough</b></p> <p>Can we use something other than a metal to be a conductor in a circuit?</p>	



Science MTP: Sequence of lessons		Light		Year 6	Focus Scientist: <b>Thomas Young Isaac Newton</b>
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to:</p> <p>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.</p>			<p><u>Key vocabulary</u></p> <p>Simple comparisons: dark, dull, bright, very bright Comparative vocabulary: brighter, duller, and darker Superlative vocabulary: brightest, dullest, and darkest Opaque, translucent, transparent Shadow – block, absence of light Reflect – bounce, mirror, reflection See – light source Sun – sunset, sunrise, position</p>		
<p><b>Lesson 1</b></p> <p>To understand that light appears to travel in straight lines.</p> <p>To understand how mirrors reflect light, and how they can help us see objects.</p> <p>WS: To be able to use scientific diagrams to support or refute an idea.</p>	<p><b>Lesson 2</b></p> <p>To be able to 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><b>Lesson 3</b></p> <p>To explain why shadows have the same shape as the object that casts them.</p>	<p><b>Lesson 4</b></p> <p>To 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>WS: To be able to plan a fair test; recognising and controlling variables.</p>	<p><b>Lesson 5</b></p> <p>To be able to 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>WS: To be able to report as to the degrees of trust in results.</p>	<p><b>Lesson 6</b></p> <p>To investigate how a prism changes a ray of light to show the spectrum. To learn about a significant scientist.</p>
<p><b>How we See</b></p> <p>How does light travel?</p>	<p><b>Reflecting Light</b></p> <p>How is light reflected?</p>	<p><b>Shadows</b></p> <p>How can we show shadows have the same shape as the object that casts them?</p>	<p><b>Materials – Reflecting Light</b></p> <p>Which materials is best at reflecting light?</p>	<p><b>Windows - Light</b></p> <p>Which window lets through the most amount of light?</p>	<p><b>Isaac Newton – Light</b></p> <p>What colour is light?</p>