



Year 6: Science Overview 2023 - 2024

Topic	<u>Autumn</u>		<u>Spring</u>		<u>Summer</u> I	
Main focus	World War 2	Kingdom of Benin	River Thames	Crime and Punishment	Fieldwork	Galapagos Islands
Knowledge Electricity Light Evolution Diet and nutrition Circulatory System Microorganisms	Electricity 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	Circulatory System Identify and name the main parts of the human circulatory system Describe the functions of the heart, blood vessels and blood	Digestion and the impact of diet, exercise and drugs Describe the ways in which nutrients and water are transported within animals, including humans Recognise the impact of diet, exercise, drugs, and lifestyle on the way their bodies function	Light 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 eye Use the idea that light travels in straight lines to explain why shadow have the same shape as the objects that cast them	Living Things and Their Habitats Give reasons for classifying plants and animals based on specific characteristics Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 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 and give reasons for those classifications	Evolution and Inheritance 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 parent Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.



Enquiries	<p>How would you group electrical components and appliances based on your own criteria?</p> <p>Can you incorporate a switch into a circuit to turn it on and off?</p> <p>Comparative/Fair testing Does the number/voltage of cells in a circuit affect the brightness of a bulb or the loudness of a buzzer?</p> <p>Which type of fruit makes the best battery?</p>	<p>Researching - Children present what they've learned in different ways</p> <p>How does the circulation system work?</p> <p>How does our circulatory system keep us alive?</p> <p>How does our heart work?</p> <p>Observing Over Time Observe pulse rates before, during and after exercise.</p> <p>Pattern Seeking Children generate questions for investigation such as:</p> <ul style="list-style-type: none"> ▪ Do older people have lower pulse rates? ▪ Do boys have higher pulse rates? 		<p>What is light and how do we see it?</p> <p>Which material is most reflective?</p> <p>How can we see different colours?</p> <p>How does my shadow change over the course of a day?</p> <p>Why do some people need to wear glasses?</p> <p>Comparative/Fair testing Investigate the shape of shadows and link this to light travelling in straight lines.</p>	<p>Classifying Classify plants into flowering, mosses, ferns and conifers, based on specific characteristics.</p> <p>Classifying Create a branching database/ dichotomous key to classify a set of living things.</p> <p>Researching Research the characteristics of a vertebrate/ invertebrate group and present what they've learned in different ways</p> <p>Researching Research how microorganisms can be helpful/harmful</p>	<p>What is adaptation? Workshop at London Zoo</p> <p>Researching Research different types of a species and their characteristics making them suitable for different habitats e.g. penguins.</p> <p>Pattern seeking Bird beak investigation - Compare the effectiveness of different beaks in collecting food.</p> <p>What have you inherited from your parents? Bring in baby pictures?</p> <p>Sorting activity - Inherited characteristics or environmental characteristics</p>
Knowledge Matrix	Knowledge Matrix - Pre-Knowledge and Future Learning					
Working Scientifically	Working Scientifically Skills Year 5 and Year 6					



Experiences		Heart dissection	Trip to the River Thames Trip to the Globe		What is adaptation? Workshop at London Zoo	
Key Vocabulary	Electricity- Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage	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	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	Light: Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, straight lines, light ray	Living things and their habitats - Classification, microorganism, invertebrates, vertebrates, offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	Evolution and Inheritance - Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils
Assessment Tasks	TAPS Assessment - Changing Circuits Working Scientifically Link Do: recording data and results of increasing complexity using scientific diagrams and labels		TAPS Assessment - Jump Patterns Enquiry Focus: I can evaluate methods to suggest improvements		TAPS Assessment - Outdoor Keys Create a branching database/ dichotomous key to classify a set of living things.	
Cross-curricular tasks				Macbeth - Shadow Puppets	RSE - Sexual Reproduction 21st Century learning Environmentalism - we can make a difference. A study of ecological movements, for example, the Chipko movement	

EXPERIENTIAL

COMMUNITY

CREATIVITY

RESPONSIVE



Events	Black History Month Anti- Bullying Week	Big Garden Birdwatch Book Week Crick Workshops Science Week - Theme “Connections” Great Big School Clean	Crick Workshops Science Week STEAM Exhibition Healthy Schools Week Sports day
Science is:	RESPONSIVE Responds to what is happening right now CREATIVE Linked to science and the arts COMMUNITY Has a purpose EXPERIENTIAL Is enhanced by experiences		