



Ready,  
Respectful,  
Safe

## Science Overview

### Cathcart Street Primary School 2023-2024

Science – Year 6	Autumn	Spring	Summer
	Year 6 NC Objectives	Year 6 NC Objectives	Year 6 NC Objectives
	<p><b>Animals including Humans</b></p> <ul style="list-style-type: none"> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p><b>Light</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines</li> <li>• 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</li> <li>• 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</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>	<p><b>Electricity</b></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• 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</li> <li>• use recognised symbols when representing a simple circuit in a diagram</li> </ul> <p><b>Evolution and Inheritance</b></p> <ul style="list-style-type: none"> <li>• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> <li>• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• <b>Scientist Charles Darwin</b></li> </ul>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p>Working Scientifically (transition unit) TBC</p>
	Year 6 Key Learning	Year 6 Key Learning	Year 6 Key Learning
	<p><b>Animals including Humans - Biology</b></p> <ul style="list-style-type: none"> <li>• To be able to name, label and explain the functions of the main parts of the human circulatory system.</li> <li>• To know that nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed.</li> <li>• To know that diet, exercise, drugs and lifestyle have an impact on the way our bodies</li> </ul>	<p><b>Electricity - Physics</b></p> <ul style="list-style-type: none"> <li>• To be able to explain how adding more cells to a complete circuit will affect other components in a circuit.</li> <li>• To 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</li> </ul> <p>To know and use the recognised symbols to draw a circuit diagram.</p>	<p><b>Living things and their habitats - Biology</b></p> <ul style="list-style-type: none"> <li>• To know that plants and animals are two main groups but there are other living things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms.</li> <li>• To be able to divide animals into two main groups – those that have backbones (vertebrates) and those that do not (invertebrates).</li> </ul>

	<p>function e.g. heart and lungs, health (diabetes, vitamin deficiency) and fitness.</p> <p><b>Light – Physics</b></p> <ul style="list-style-type: none"> <li>To be able to explain how we can see light sources shining directly into our eyes but to see other objects, light from a source must first shine on the object and then be reflected into our eyes.</li> <li>To know that light appears to travel in straight lines.</li> <li>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. e.g. heart and lungs, health (diabetes, vitamin deficiency) and fitness.</li> </ul> <p>To be able to explain that objects that block light (are not fully transparent) will cause shadows and because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object.</p>	<p><b>Evolution and Inheritance - Biology</b></p> <ul style="list-style-type: none"> <li>To know that all living things have offspring of the same kind and features in the offspring are inherited from the parents but the offspring are not identical to their parents and vary from each other.</li> <li>To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> <li>To be able to give examples of how plants and animals are suited to an environment.</li> <li>To be able to give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth.</li> <li>To be able to use fossils as evidence of what lived on the Earth millions of year ago.</li> </ul>	<ul style="list-style-type: none"> <li>To be able to give examples of animals in the five vertebrate groups and some of the invertebrate groups.</li> <li>To know the key characteristics of the five vertebrate groups and some invertebrate groups.</li> <li>To be able to give examples of flowering and non-flowering plants.</li> <li></li> </ul>
Working Scientifically	<p><b>Animals inc Humans</b></p> <ul style="list-style-type: none"> <li>To decide how to record and present evidence.</li> <li>To select from a range of practical resources to gather evidence to answer their questions</li> <li>To carry out fair tests, recognising and controlling variables.</li> <li>To present the same data in different ways in order to help with answering the question.</li> </ul> <p><b>Light</b></p> <ul style="list-style-type: none"> <li>To select from a range of practical resources to gather evidence to answer their questions e.g What happens to a shadow when the object changes?</li> <li>To look for patterns and relationships using a suitable sample.</li> <li>To record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams.</li> </ul>	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>To use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.</li> <li>During an enquiry, to make decisions e.g. whether they need to: take repeat readings (fair testing) in order to get accurate data (closer to the true value).</li> <li>To talk about how their scientific ideas change due to new evidence.</li> </ul> <p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>To recognise how secondary sources can be used to answer questions that cannot be answered through practical work.</li> <li>During an enquiry, to make decisions e.g. whether they need to check further secondary sources (researching)</li> <li>To answer their own and others' questions based on information they have gained from secondary sources.</li> </ul>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>To record measurements using scatter graphs.</li> <li>To record classifications e.g. using tables and classification keys.</li> <li>To identify any limitations that reduce the trust they have in their data.</li> <li>To decide what observations or measurements to make over time and for how long.</li> <li>(In conclusions) to identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern e.g. mould investigation.</li> </ul>
Vocabulary	<p><b>Key Vocabulary (Animals inc Humans)</b></p> <p>Lungs, respiration, circulatory system, transport aorta chambers ventricle atrium trachea blood vessels</p>	<p><b>Key Vocabulary (Electricity)</b> Amps, Volts, voltage, Cell, circuit symbol, resistance, electrons, series circuit, batteries. The words cells and batteries are now used interchangeably</p>	<p><b>Key Vocabulary (Living things and their habitat)</b></p> <p>Classification, Vertebrates, invertebrates, Micro-organisms, bacteria, yeast</p>

	<b>Key Vocabulary (Light)</b> Spectrum, incident ray, reflected ray, prism, pupil, iris, retina, lens, optic nerves.	NB Children do not need to understand what voltage is but will use volts and voltage to describe different  <b>Key Vocabulary (Evolution and Inheritance)</b> inheritance, classification. variation, adaptation, environment, genetics, evolution, DNA, traits.	
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