



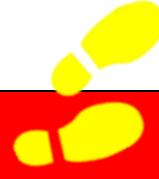
## Our Science Learning Journey Year 6



**Year 6: Living Things and Their Habitats, Animals Including Humans, Evolution and Inheritance, Light, Electricity; Working Scientifically;** (Exploring/observing, grouping & classifying, questioning, research, modelling, collaborating, planning & testing, using equipment & measures, communicating, describing results/looking at patterns, explaining results, trusting results)

Autumn Term 1	Autumn Term 1	Spring Term	Summer Term
<p><b>Vicious Vikings</b></p> <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>Working Scientifically Skills</b></p> <ul style="list-style-type: none"> <li>Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS).</li> <li>Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world.</li> <li>Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary changes; how light travels).</li> <li>Use research* to identify and classify things.</li> <li>Research how scientific ideas have developed over time and had an impact on our lives</li> <li>Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit).</li> <li>Articulate understanding of the concept using scientific language and terminology when describing abstract ideas, observations and findings (linked to the Y6 PoS).</li> <li>Make decisions about how to present and explain their findings through talk, in written forms or in other ways (e.g. using technology).</li> </ul>	<p><b>Treasure Island</b></p> <p><b>Evolution and Inheritance</b></p> <ul style="list-style-type: none"> <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>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> </ul> <p><b>Working Scientifically Skills</b></p> <ul style="list-style-type: none"> <li>Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS).</li> <li>Recognise the importance of classification to the scientific world and form a conclusion from their sorting and classifying.</li> <li>Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction).</li> <li>Recognise scientific questions that do not yet have definitive answers (linked to Y6 PoS).</li> <li>Use observations to suggest a further (testable or research) question.</li> <li>Support, listen to and acknowledge others in the group.</li> <li>Interview people to find out information</li> <li>Check the clarity of each other's suggestions.</li> <li>Build on / add to someone else's idea to improve a plan or suggestion.</li> <li>Understand that it is okay to disagree with their peers and offer reasons for their opinion</li> <li>Predict what a graph might look like before collecting results.</li> <li>Record data and results of increasing complexity using scientific diagrams and labels, recognised symbols, classification keys, tables, bar and line graphs, and models.</li> </ul>	<p><b>Blitz Britz</b></p> <p><b>Light</b></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> <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>Working Scientifically Skills</b></p> <ul style="list-style-type: none"> <li>Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS).</li> <li>Use classification systems, keys and other information records [databases] to help classify or identify things.</li> <li>Refine a scientific question to make it testable i.e. ask a testable question which includes the change and measure variables, e.g. what would happen to...if we changed...?</li> <li>e.g. What effect would we have on ... if we...? e.g. How would exercise affect the pulse rate?</li> <li>Independently ask a variety of scientific questions and decide the type of enquiry needed to answer them.</li> <li>Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit).</li> <li>Propose their own ideas and make decisions with agreement in a group.</li> <li>Make a hypothesis where they say how one thing will affect another and give a reason for their suggestion with a developing understanding of the scientific concept.</li> <li>Identify variables to change, measure and keep the same in order for a test to be fair.</li> <li>Independently plan investigations and explain planning decisions.</li> <li>Decide when it is appropriate to carry out a fair test investigation, comparative test or alternative.</li> <li>Decide whether to repeat any readings and justify the reason for doing so.</li> <li>Make their own decisions about what measurements to take (and begin to identify the ranges used).</li> <li>Make, and act on, suggestions to control / reduce risks to themselves and others.</li> <li>Use equipment fit for purpose to take measurements which are increasingly accurate and precise.</li> <li>Decide the most appropriate equipment to use to collect data.</li> <li>Spot unexpected results that do not fit the pattern (anomalies).</li> <li>Identify patterns in results collected and describe them using the change and measure variables (causal relationships) (e.g. as we increased the number of batteries the brightness the bulb increased).</li> <li>Be able to suggest reasons for unexpected results (anomalies).</li> <li>Describe how to improve planning to produce more reliable results.</li> <li>Say how confident they are that their results are reliable and give a reason.</li> </ul>	<p><b>Iceberg Ahead</b></p> <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><b>Working Scientifically Skills</b></p> <ul style="list-style-type: none"> <li>Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS).</li> <li>Construct a classification key / branching database using more than two items.</li> <li>Compare and contrast things beyond their locality and discuss advantages / disadvantages, pros / cons of the similarities and differences.</li> <li>Use research* to identify and classify things.</li> <li>Use evidence from a variety of sources to justify their ideas</li> <li>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</li> <li>Identify evidence that refutes or supports their ideas.</li> <li>Independently form a conclusion which draws on the evidence from the test (linked to Y6 PoS).</li> <li>Use scientific language and terminology (linked to Y6 PoS) to explain why something happened.</li> </ul>

### Key Vocabulary

Living Things and Their Habitats	Animals Inc Humans	Evolution and Inheritance	Light	Electricity
<ul style="list-style-type: none"> <li>Micro-organisms, plants, animals, subdivisions, invertebrates, vertebrates, mammals, reptiles, birds, classification, Animals, characteristics, classification, classify, deciduous, differences, evergreen, groups, insects, invertebrates, keys, molluscs, plants, similarities, systems, vertebrates</li> </ul> 	<ul style="list-style-type: none"> <li>Humans, circulation, circulatory system, heart, blood vessels, blood, veins, arteries, lungs, oxygen, capillaries, pump, pulse, exercise, oxygenate, deoxygenate, function, health, diet, balance, protein, carbohydrate, calcium, dairy, vitamins, minerals, fruit, vegetables, medicines, drugs, effects, smoking, tobacco, tar, carbon-monoxide, stimulant, depressant, alcohol, intoxication, substances, harmful, effects, lifestyle, addiction, illegal, abuse, health, medical, research, studies,</li> </ul> 	<ul style="list-style-type: none"> <li>Adaptation, changes, characteristics, Darwin, differences, environment, evolution, generations, genes, inherit, inheritance, parents, similarities, survival of the fittest, variation, interdependence, adaptation, habitat, environment, advantages/disadvantages.</li> </ul> 	<ul style="list-style-type: none"> <li>Light, straight lines, reflection, eye, see/sight, light sources, objects, shadows, barrier, shape, mirror, dull, matt, light beam, block, opaque, travel, darkness, bounce, shiny,</li> </ul>	<ul style="list-style-type: none"> <li>Battery, circuit, component, bulb, electricity, device, buzzer, volume, current, matched, motor, wires, break, switch, complete, brightness, electrical conductor, electrical insulator, metal, non-metal, plastic, voltage, plug, volts, symbols, series circuit, safety, components, uses, control, irreversible, burning, acid, rusting, chemical reactions, polymers.</li> </ul> <ul style="list-style-type: none"> <li>NB: Recap and revisit vocabulary from classification in year 4.</li> </ul> 