Year 6 Curriculum Map

Year 6 – Electricity				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry**	**Rocket Words**	**Resources**
Describe the parts of an electric circuit	Use recognised symbols when representing a simple circuit in a diagram	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	symbol circuit circuit diagram battery wires	*Series circuit equipment including bulbs, wires, switches, buzzers, cells etc, pen, pencil, ruler*
Explore voltage and its effect on an electrical circuit	Associate the brightness of a bulb or the volume of a buzzer with the number and voltage of cells used in the circuit	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	electricity current voltage voltmeter brightness	*Series circuit equipment - including cells and voltmeters, high voltage bulbs, batteries and wires, pen, pencil, ruler*
Apply knowledge to identify and correct problems in a circuit	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	blown resistor variable resistor LED dimmer switch	*Laptops/iPads with circuit builder, (alternatively electrical components - wires, batteries, bulbs, resistors, voltage meter etc), pens, pencil, ruler*
Investigate what affects the output of a 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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using test results to make predictions to set up further comparative and fair tests	output variable fair test control test systematically	*Series circuit equipment including bulbs, wires, switches, buzzers, cells etc, pen, pencil, ruler*
Build a set of traffic lights	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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	synchronised traffic light signal sensor timer-based	*For **each** set of traffic lights: stiff card, wires and crocodile clips, 1.5V LEDS (green, red and yellow) - caution as higher voltages may break the LEDs, 2x 1.5V batteries, paperclips, tin foil, drawing pins, split pins, pen, pencil, ruler*
Apply knowledge of conductors and insulators	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	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	closed electric circuit indicating conductor insulator resistor	*Example electric circuit games, 1 thick corrugated cardboard base approximately 25 cm x 25 cm (to be prepared in advance), pencil, battery holder and cells (ideally zinc chloride), switch, bulb holder & bulb rated for the same voltage as the battery, 2x resistor, buzzer rated for the same voltage as the battery, 6 crocodile leads, wire for the loop, conductive metal for the loop, insulating material for handle, timer/stopwatch*

Year 6 – Light				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry**	**Rocket Words**	**Resources**
Explore how light travels	Recognise that light appears to travel in straight lines	Record data and results of increasing complexity using scientific diagrams and labels Identifying scientific evidence that has been used to support or refute ideas or arguments	light eye light source symbol scientific diagram	*Torch, cardboard tube/a section of hosepipe/paper, card, hole punch, pen, pencil*
Explore reflection	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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	reflected prediction fair test variable table	*Torch, white card, mirror, tin foil, jumper/cardigan, carrier bag (try to choose materials which are similar in colour), pen, pencil*
Explore reflection and explain how it can be used to help us see	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	Identifying scientific evidence that has been used to support or refute ideas or arguments	periscope angle mirror line of sight utilise	*Torch, cereal box, mirrors, scissors, sticky tape, ruler, pencil*
Investigate how shadows can change	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	shadow block opaque transparent translucent	*Multilink, board marker, whiteboard, torch, ruler , pen, pencil*
Investigate how we can show why shadows have the same shape as the object that casts them	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	plan sun shade real life problem rotate direction	*Modelling clay, torch, cocktail sticks, materials for making a screen, pen, pencil, ruler*
Investigate how we see objects	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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	optical phenomena disperse spectrum refraction	*Water, washing up liquid, straw, glass container, salt, bowl, paper, red, green and blue pens, coloured filters, pencil*

Year 6 – Animals including humans				
Lesson Intention	National Curriculum Reference	Scientific Enquiry	Rocket Words	Resources
Understand the function of the heart and its role in the circulatory system	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	circulatory system atrium ventricle vessel valves	*Pipe cleaners, plasticine, craft materials, colouring pencils, mini whiteboards, pen, pencil*
Identify and compare blood vessels	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	vessel artery vein capillary microscope	*Water (with dye), disposable paper cups, modelling clay, nail/cocktail stick, pen, pencil, stopwatch*
Explore blood	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	blood plasma platelet white blood cell red blood cell	*Protractor, ruler, pen, pencil, compass, computers, mini whiteboards*
Learn how the body transports water and nutrients	Describe the ways in which nutrients and water are transported within animals, including humans	Identifying scientific evidence that has been used to support or refute ideas or arguments	absorb diffusion osmosis concentration nutrients	*Demonstration: 2 eggs, water, sugar, 2 glasses,* *gummy bears, different liquids (milk, cola/soda, distilled water, sugar, salt), beakers/cups/test tubes, pen, pencil, ruler*
Investigate what affects your heart rate	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	diet exercise heart rate BPM pulse	*Timers/stopwatches, heart rate monitors (if possible), PE equipment and attire, foods chosen by children*
Learn about the impact of drugs and alcohol on the body	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	drug painkiller stimulant depressant hallucinogens	*Pen, pencil, colouring pencils, coloured paper, computers*

Year 6 – Living things and their habitats				
Lesson Intention	National Curriculum Reference	Scientific Enquiry	Rocket Words	Resources
Classify living organisms	Give reasons for classifying plants and animals based on specific characteristics	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs	classify microorganism fern living organism conifer	*Class presentation, liquorice allsorts, A3 paper and pens*
Understand the kingdoms of life	Give reasons for classifying plants and animals based on specific characteristics	Identifying scientific evidence that has been used to support or refute ideas or arguments	kingdom mrs gren cell multicellular unicellular	*Class presentation, a plant and research materials*
Classify living things using the Linnaean system	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	Identifying scientific evidence that has been used to support or refute ideas or arguments	Carl Linnaeus classification Latin species domain	*Class presentation and research devices*
Identify the characteristics of different types of microorganisms	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	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	microorganism bacteria fungi virus protozoa	*Class presentation, mould growing investigation,* *slices of bread, sealable sandwich bags, water, sticky labels and marker pens*
Investigate asexual reproduction through spore dispersal	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	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	plant microscopic fungi mycelium ecosystem	*Class presentation, large mushrooms, clamp stands, clamps, string, cocktail stick to make a hole, plain paper, hairspray and a ruler*
Classify and describe a living organism	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	Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations	classify microorganism living organism habitat reproduction	*Class presentation, A3 paper, felt tips/colouring pencils and research materials*

Year 6 – Evolution and inheritance				
Lesson Intention	National Curriculum Reference	Scientific Enquiry	Rocket Words	Resources
Understand how offspring vary and are not identical to their parents	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents	Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations	offspring characteristic inherit variation environmental	*Class presentation, handout, pen*
Learn about animal adaptations	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations	adaptation habitat climate nutrition feature	*Class presentation, handout and research tools such as books or the internet*
Learn about plant adaptations	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations	nutrients epiphytes toxic predators pollinate	*Class presentation, handout and research tools such as books and the internet*
Explore what we can learn from fossils	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	Identifying scientific evidence that has been used to support or refute ideas or arguments	fossil Mary Anning Palaeontologist ichthyosaurus Jurassic coast	*Class presentation, handout and research tools such as books or the internet (optional)*
Explore the theory of evolution	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	Identifying scientific evidence that has been used to support or refute ideas or arguments	Charles Darwin evolved extinct natural selection theory	*Class presentation, coloured pencils, handout and research tools such as books or the internet (optional)*
Explore human evolution	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	Identifying scientific evidence that has been used to support or refute ideas or arguments	ancestor tools primate Homo sapien Neanderthal	*Class presentation, handout and research tools such as books or the internet (optional)*

Year 6 – Looking after the environment			
Lesson Intention	National Curriculum Reference - Scientific Enquiry	Rocket Words	Resources
Learn about climate change	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	weather climate prevent global warming climate change	*2L plastic bottle, permanent marker, sticky tape, skewers/plastic straws, rulers, scissors, thermometer, coloured paper, colouring pens/pencils*
Explore ways to reduce how much rubbish is sent to landfill	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	recycle landfill rubbish biodegrade council	*Classroom bin (full!), rubber gloves, computer/tablets for research, pen, pencil*
Explore ways to reduce energy consumption	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	net zero renewable non-renewable greenhouse gases emissions	*Clipboards, pencils, calculators, computers/tablets for research*
Explore what happens when fuels are burnt	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	industrial revolution fossil fuel coal combustion fuel	*Candle, matches, metal spoon, computers/tablets for research, pen, pencil*
Explore the outcomes of COP26	Identifying scientific evidence that has been used to support or refute ideas or arguments	COP sustainability conference pledge subsidy	*Computers/tablets, pen, pencil*
Compare data associated with the weather	Using test results to make predictions to set up further comparative and fair tests	species sensitive natural disaster habitat vulnerable	*Computers/tablets, temperature and rainfall data collected + comparison data, graph paper, pen, pencil*