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 Curriculum Map

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 Curriculum Map

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 Curriculum Map

Year 6 – Living things and their habitats				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry**	**Rocket Words**	**Resources**
Classify living things	Describe how living things are classified into board groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys , tables, scatter graphs, and bar and line graphs.	classify spore micro-organism seed similarities	*Create a Classification Key* *paper, pens, pencils, books/Internet for research*
Explore the kingdoms of life	Give reasons for classifying plants and animals based on specific characteristics	Planning different types of enquiries to answer questions including recognising and controlling variables where necessary	multicellular unicellular kingdom cell MRS GREN	*Mould Growing Investigation* *slices of bread, sealable sandwich bags, water, sticky labels, marker pens*
Describe the work of Carl Linnaeus	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	Identifying scientific evidence that has been used to support or refute ideas or arguments	Latin genus Carl Linnaeus class species	*Classification Challenge* *paper, pens, pencils, books/Internet for research, scissors, glue*
Identify different classes of vertebrates	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	Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays or other presentations, identifying scientific evidence that has been used to support or refute ideas	vertebrate cold-blooded amphibian reptile mammal	*Classifying Animals* *paper, pens, pencils, books/Internet for research, scissors, glue*
Explore soil habitats	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	Grouping and classifying.	carbon dioxide microorganism plant oxygen microscopic	*paper, pens, pencils, coloured pencils books/Internet for research, scissors, glue*
Describe different types of fungi	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	Record scientific data using diagrams	mycelium fungi mushrooms yeasts hyphae	*Large mushrooms, clamp stands, clamps, string, skewer to make hole, plain paper, hairspray, ruler*

Year 6 Curriculum Map

Year 6 – Evolution and inheritance				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry**	**Rocket Words**	**Resources**
Explain how adaptations help animals and plants survive	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Identify scientific evidence that has been used to support or refute ideas or arguments	adaptation desert cactus insulating environment	*Pen, pencil*
Describe the process of natural selection	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	Identify scientific evidence that has been used to support or refute ideas or arguments	fossil fossilisation evidence dinosaur petrified	*Pen, pencil*
Explain why animals can look different to their parents	Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents.	Identifying scientific evidence that has been used to support or refute ideas and arguments	genetically modified crop toxin resilience breeding yield	*Pen, pencil*
Describe the process of genetic modification	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	generation species evolution offspring DNA	*Extracting DNA from a Banana!, goggles, apron / lab Coat, banana, sealable sandwich bag, warm water, salt, washing up liquid, filter paper, funnel, rubbing alcohol, plastic containers*
Explain what fossils can tell us	Identify how animals and plants are adapted to suit their environment in different ways, and that adaptation may lead to evolution	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Charles Darwin habitat ancestor Natural Selection extinct	*Camouflaged worms - Individual model 20 plain toothpicks, 20 toothpicks painted to match the floor/carpet, stopwatch, cups, tweezers*
Explore the work of palaeontologist Mary Anning	Find out about the work of palaeontologists such as Mary Anning; recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	Identify scientific evidence that has been used to support or refute ideas or arguments	Mary Anning specimen prehistoric Jurassic Coast palaeontologist	*Make Your Own Fossil Plasticine, plaster of Paris, water, mixing dish/bowl, cocktail sticks*

Year 6 Curriculum Map

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*