



St Laurence's CE Primary School
 Science Long Term Plan
 Year: 6
 Academic Year: 2021-2022



Autumn 1 Living Things and Their Habitats	Autumn 2 Reversible and Irreversible Changes	Spring 1 Light	Spring 2 Electricity	Summer 1 Evolution and Inheritance	Summer 2
<p>Key Content & Skills National Curriculum Learning Targets: Support</p> <ul style="list-style-type: none"> I know that animals can be grouped into mammals, reptiles, birds, fish and amphibians. I can describe the habitats in which different animals and plants are found. <p>Expectations</p> <ul style="list-style-type: none"> I can 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 I can give reasons for classifying plants and animals based on specific characteristics. <p>Challenge</p> <ul style="list-style-type: none"> I can explain how living things are adapted to different habitats. <p>Expectations</p> <ul style="list-style-type: none"> I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models I can report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. I can present findings in written form, displays and other presentations. 	<p>Key Content & Skills</p> <ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C). I can demonstrate that dissolving, mixing and changes of state are reversible changes. I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models I can report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. I can present findings in written form, displays and other presentations. I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute, ideas or arguments. 	<p>Key Content & Skills National Curriculum Learning Targets: Support</p> <ul style="list-style-type: none"> Identify sources of light, materials that transmit light and materials that reflect light. Explain the importance of light in the world around me. <p>Expectations</p> <ul style="list-style-type: none"> I can recognise that light appears to travel in straight lines I can 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 I can 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 I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>Challenge</p> <ul style="list-style-type: none"> I can explain how the human eye works. I can explain the dispersion of light. I can describe how some transparent materials bend light rays. I am beginning to talk about light as a wave – moving energy from one place to another. <p>Working Scientifically National Curriculum Skills Targets:</p> <p>Expectations</p> <ul style="list-style-type: none"> I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models I can report findings from enquiries, including oral and written 	<p>Key Content & Skills Support</p> <ul style="list-style-type: none"> I can identify common appliances that run on electricity I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit I can recognise some common conductors and insulators, and associate metals with being good conductors. <p>Expectations</p> <ul style="list-style-type: none"> I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. I can 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. I can use recognised symbols when representing a simple circuit in a diagram. <p>Challenge</p> <ul style="list-style-type: none"> I can describe how voltage changes in a series and parallel circuit. <p>Expectations</p> <ul style="list-style-type: none"> I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, 	<p>Key Content & Skills Support</p> <ul style="list-style-type: none"> I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p>Challenge</p> <ul style="list-style-type: none"> I can describe variation between individuals of different species I can describe variation between individuals within a species I can explain how variation leads to competition which can drive adaptation I understand that changes in the environment that leave some species less well adapted to compete successfully and reproduce. <p>Working Scientifically Expectations</p> <ul style="list-style-type: none"> I can plan enquiries, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models 	<p>Key Content & Skills</p>



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<ul style="list-style-type: none"> I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute, ideas or arguments. <p>Challenge</p> <ul style="list-style-type: none"> I can ask questions and develop lines of enquiry based on observations. I can make predictions using scientific knowledge and understanding. I can plan and design investigations and experiments to make observations and test predictions. I can identify independent, dependent and control variables and other factors to be taken into account when collecting <ul style="list-style-type: none"> evidence and data I can select appropriate techniques, apparatus, and materials during fieldwork and laboratory work, working safely. I can evaluate the reliability of methods and suggest possible improvements. I can interpret observations and data. I can present reasoned explanations. 		<p>explanations of results, explanations involving causal relationships, and conclusions.</p> <ul style="list-style-type: none"> I can present findings in written form, displays and other presentations. I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute, ideas or arguments. <p>Challenge</p> <ul style="list-style-type: none"> I can ask questions and develop lines of enquiry based on observations. I can make predictions using scientific knowledge and understanding. I can plan and design investigations and experiments to make observations and test predictions. I can identify independent, dependent and control variables and other factors to be taken into account when collecting evidence and data I can select appropriate techniques, apparatus, and materials during fieldwork and laboratory work, working safely. I can evaluate the reliability of methods and suggest possible improvements. I can interpret observations and data. I can present reasoned explanations. 	<p>using a range of scientific equipment, with increasing accuracy and precision</p> <ul style="list-style-type: none"> I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models I can report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. I can present findings in written form, displays and other presentations. I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute, ideas or arguments. <p>Challenge</p> <ul style="list-style-type: none"> I can ask questions and develop lines of enquiry based on observations. I can make predictions using scientific knowledge and understanding. I can plan and design investigations and experiments to make observations and test predictions. I can identify independent, dependent and control variables and other factors to be taken into account when collecting <ul style="list-style-type: none"> evidence and data I can select appropriate techniques, apparatus, and materials during fieldwork and laboratory work, working safely. I can evaluate the reliability of methods and suggest possible improvements. I can interpret observations and data. I can present reasoned 	<ul style="list-style-type: none"> I can report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. I can present findings in written form, displays and other presentations. I can use test results to make predictions to set up further comparative and fair tests. I can use simple models to describe scientific ideas I can identify scientific evidence that has been used to support or refute, ideas or arguments. <p>Challenge</p> <ul style="list-style-type: none"> I can ask questions and develop lines of enquiry based on observations. I can make predictions using scientific knowledge and understanding. I can plan and design investigations and experiments to make observations and test predictions. I can identify independent, dependent and control variables and other factors to be taken into account when collecting <ul style="list-style-type: none"> evidence and data I can select appropriate techniques, apparatus, and materials during fieldwork and laboratory work, working safely. I can evaluate the reliability of methods and suggest possible improvements. I can interpret observations and data. I can present reasoned explanations. 	
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<u>Vocabulary:</u> microorganisms plants animal classification invertebrates insects spiders snails worms vertebrates fish amphibians reptiles birds mammals	<u>Vocabulary:</u> solid, liquid, gas, change of state, reversible change, irreversible change, particle, freezing, melting, condensation,	<u>Vocabulary:</u> Reflect reflection shadow light ray transmit opaque transparent translucent emit absorb dispersion prism pupil retina iris optic nerve lens image cornea refraction mirror convex concave	<u>Vocabulary:</u> electric current electric circuit electricity thermal energy electrons circuit charged particles insulators conductors natural gas joule watt greenhouse gases transformers voltage ions solar cell solar energy static electricity short circuit vibration parallel circuit electrolyte electrodes alternating current current charged Non-renewable resources coal alternators geothermal energy negative charges positive charges electric energy semiconductors power wind power cells battery fossil fuel magnetism circuit breakers wattage sustainable energy nuclear energy steam engine thermal energy magnetic energy power station nuclear power climate change clean energy chemical energy	<u>Vocabulary:</u> Natural selection characteristics evidence fossils parent offspring inherit inherited characteristic environmental characteristic adapt adaptation evolve environment species breed	<u>Vocabulary:</u>