



Key stage 2 Science planning 2022-2023

Working Scientifically

National curriculum objectives:

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- ♣ 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
- ♣ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- ♣ using test results to make predictions to set up further comparative and fair tests
- ♣ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- ♣ identifying scientific evidence that has been used to support or refute ideas or arguments.

These are the scientific enquiry skills which run throughout the year 6 units of work.

Year 6 (Lockdown Years 3 and 4)

Living things and their habitats	Animals including humans	Light
<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> ♣ 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 ♣ give reasons for classifying plants and animals based on specific characteristics. 	<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> ♣ identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood ♣ recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function ♣ describe the ways in which nutrients and water are transported within animals, including humans. 	<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> ♣ recognise that light appears to travel in straight lines ♣ 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 ♣ 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 ♣ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
<p><u>Key questions:</u></p> <p>Who was Carl Linnaeus and why is the Linnaean system of classification important?</p> <p>How can we use classification keys to identify the names of plants?</p> <p>How are plants classified?</p> <p>How are vertebrates classified?</p> <p>How are invertebrates classified?</p> <p>What is the most popular species of earthworm in our forest school area?</p> <p>What are the characteristics of different microorganisms?</p> <p>What conditions are best for the growth of mould?</p>	<p><u>Key questions:</u></p> <p>How do we know what our bodies need to be healthy?</p> <p>Why is it important to eat a balanced and varied diet?</p> <p>What is the role of blood in the human transport system?</p> <p>How does the heart pump blood around the body?</p> <p>What is the effect of exercise on the heart?</p> <p>What is the effect of drugs and medicines on the body?</p>	<p><u>Key questions:</u></p> <p>How do we see objects?</p> <p>Why is a shadow the same shape as the object that casts it?</p> <p>How can shadows be changed?</p> <p>How is light reflected by mirrors and other surfaces?</p> <p><u>Enhancement</u></p> <p>How does refraction change the direction of light?</p> <p>How do we see colour?</p>

Electricity	Evolution and Inheritance
<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> ♣ associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the 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 ♣ use recognised symbols when representing a simple circuit in a diagram. 	<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> ♣ recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago ♣ recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents ♣ identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
<p><u>Key questions:</u></p> <p>How are simple circuits represented?</p> <p>How does changing the number of bulbs in a circuit affect their brightness?</p> <p>How does changing the voltage affect the brightness of a bulb(s) in a series circuit?</p> <p>Personal investigation into variations in how components function.</p> <p>What are the electrical circuits needed for different everyday devices?</p> <p>Who was Thomas Edison and why is his work important for us today?</p>	<p><u>Key questions:</u></p> <p>How old is the Earth?</p> <p>What can we learn from fossils?</p> <p>Do offspring vary or are they identical to their parents?</p> <p>How have plants and animals adapted to live in their environment?</p>