

# Science Long Term Plan

# Pencoyls

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y1	<b>What is a plant and what are their features?</b>	<b>What is an animal and how can we group them?</b>	<b>What are the different materials and what are their properties?</b>	<b>What are our senses and how do they help us?</b>	<b>What is weather and how does our weather change with the seasons?</b>	<b>What would we like to investigate about our learning this year?</b>
	<p><b>Plants</b> Identify and name a variety of common plants and trees.</p> <p>Identify and describe the basic structure of a flowering plant and tree.</p>	<p><b>Animals including humans (animal focus)</b> Identify and name a variety of common animals.</p> <p>Describe and compare the structure of a variety of common animals.</p> <p>Identify and name a variety of carnivores, herbivores and omnivores.</p>	<p><b>Materials</b> Know the difference between an object and its material and name a variety of materials.</p> <p>Describe simple physical properties of a variety of everyday materials.</p> <p>Compare and group everyday materials based on simple physical properties.</p>	<p><b>Animals including humans (human focus)</b> Identify, name, draw and label the basic parts of the human body and associate body parts with each sense.</p>	<p><b>Seasonal changes</b> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><b>Scientific enquiry</b> A range of investigations linked to the previous 5 science units to consolidate knowledge and develop enquiry skills.</p>
	<b>Cross curricular links:</b>	<b>Cross curricular links:</b> History - dinosaurs	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>
Y2	<b>How do animals change as they grow?</b>	<b>How do animals survive and stay healthy?</b>	<b>How do we know if something is alive?</b>	<b>Why do we use so much plastic?</b>	<b>Can a polar bear live in a forest?</b>	<b>What do plants need to grow?</b>
	<p><b>Animals including humans</b> Understand animals have offspring which grow into adults.</p>	<p><b>Animals including humans</b> Basic needs of animals for survival (water, food and air).</p> <p>Importance of exercise, types of food and hygiene for humans.</p>	<p><b>Living things and their habitats</b> Living, dead and things that have never been alive.</p> <p>Habitats, including micro habitats</p>	<p><b>Materials</b> Suitability of everyday materials for particular uses.</p> <p>Find out how the shapes of solid objects can be changed.</p>	<p><b>Living things and their habitats</b> Identify that most living things live in habitats</p> <p>Food chains and interdependence within habitats.</p>	<p><b>Plants</b> Observe and describe how seeds and bulbs grow into mature plants.</p> <p>- Importance of water, light and temperature for plants to grow and stay healthy.</p>
	<b>Cross curricular links:</b> Geography – Ocean animals	<b>Cross curricular links:</b> History – How explorers in the past tried to stay healthy.	<b>Cross curricular links:</b>	<b>Cross curricular links:</b> History – Titanic artefacts	<b>Cross curricular links:</b> Geography – African habitats	<b>Cross curricular links:</b> History – gardens

Y3	<b>What's under your feet?</b>	<b>Why can't I just eat chocolate?</b>	<b>How do we move?</b>	<b>How does a magnet work?</b>	<b>How do plants grow?</b>	<b>Why do I have a shadow?</b>
	<p><b>Rocks and soils</b></p> <p>Compare and group different kinds of rocks.</p> <p>Describe how fossils are formed.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p><b>Animals including humans</b></p> <p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p>	<p><b>Animals including humans</b></p> <p>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</p>	<p><b>Forces and magnets</b></p> <p>Compare how things move on different surfaces.</p> <p>Observe how magnets attract and repel each other and materials. Describe poles in terms of magnets. Make predictions.</p>	<p><b>Plants</b></p> <p>Explore the requirements for life and growth in plants and investigate how water is transported.</p> <p>Identify and describe the functions of different parts of a flowering plant.</p> <p>Explore the part that flowers play in the life cycle of flowering plants.</p>	<p><b>Light</b></p> <p>Recognise that light is needed to see things. Understand that light is reflected from surfaces.</p> <p>Know that shadows form when a light source is blocked and find patterns in how shadows can change.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p>
	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>
Y4	<b>How can I identify you?</b>	<b>Producers, predators and prey: who eats you?</b>	<b>What happens to the food we eat?</b>	<b>Can electricity jump?</b>	<b>Where did the water go?</b>	<b>Can sound be changed?</b>
	<p><b>Living things and their habitats</b></p> <p>Understand how to group living things and identify them using classification keys.</p> <p>Recognise how changes in the environment affect living things.</p>	<p><b>Animals including humans</b></p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><b>Animals including humans</b></p> <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p>	<p><b>Electricity</b></p> <p>Identify appliances that run on electricity.</p> <p>Construct simple series electrical circuits, identifying and naming parts.</p> <p>Identify if the circuit would allow electricity to flow. Understand and recognise common conductors and insulators.</p>	<p><b>States of matter</b></p> <p>Compare and group materials together, according to their state.</p> <p>Observe changes of state due to heating and cooling.</p> <p>Understand the impact of temperature in the water cycle.</p>	<p><b>Sound</b></p> <p>Identify how sounds are made and how they can be changed (pitch and volume).</p> <p>Understand how sound travels.</p> <p>Find patterns in changes in sounds.</p>

	<b>Cross curricular links:</b> Geography: deforestation	<b>Cross curricular links:</b>	<b>Cross curricular links:</b>	<b>Cross curricular links:</b> DT: circuits.	<b>Cross curricular links:</b> Science: water cycle Geography: rivers	<b>Cross curricular links:</b>
Y5	<b>Do all animals and plants grow in the same way?</b>	<b>What happens as we grow older?</b>	<b>Why do I only see stars at night?</b>	<b>Why do we not fall off the Earth?</b>	<b>What is the use of a chocolate teapot?</b>	<b>Do materials disappear?</b>
	<b>Living things and their habitats</b> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.  Describe the life process of reproduction in some plants and animals.	<b>Animals including humans</b> Describe the changes as humans develop to old age.	<b>Earth and Space</b> Describe the Sun, Earth and Moon as approximately spherical bodies.  Describe the movement of the Moon relative to the Earth. Describe the movement of Earth and other planets relative to the Sun. Explain day and night.	<b>Forces</b> Explain the force of gravity and impact on a falling object. Identify effects of air resistance, water resistance and friction.  Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	<b>Properties and changes in materials</b> Compare and group everyday materials on the basis of their properties, ( hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets  Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	<b>Properties and changes in materials</b> Understand that some materials are soluble and recover a substance from a solution.  Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate reversible changes and explain that some changes are irreversible.
	<b>Cross curricular links:</b> Geography – animals in polar climates Art – observational drawings of plants	<b>Cross curricular links:</b>	<b>Cross curricular links:</b> History (general) – heliocentric vs geocentric	<b>Cross curricular links:</b> DT – strength of frame structures	<b>Cross curricular links:</b> Geography – use of materials to withstand extreme weather	<b>Cross curricular links:</b> DT – baking bread
Y6	<b>How can I classify you?</b>	<b>How can we change circuits?</b>	<b>What is light?</b>	<b>Where did we come from?</b>	<b>What is blood?</b>	<b>What do we need to stay alive?</b>
	<b>Living things and their habitats</b>  Describe how living things are classified into groups according to common	<b>Electricity</b>  Compare and give reasons for variations in how components function, including the	<b>Light</b>  Recognise that light appears to travel in straight lines use this idea to explain that objects	<b>Evolution and inheritance</b>  Recognise that living things have changed over time and fossils provide	<b>Animals including humans</b>  Identify and name the main parts of the human circulatory system, and	<b>Animals including humans</b>  Describe the ways in which nutrients and water are transported within

	<p>observable characteristics and based on similarities and differences, including micro-organisms and plants</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>brightness of bulbs, the loudness of buzzers and the on/off position of switches. Discuss this in terms of voltage and cells.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>are seen because they give out or reflect light into the eye and that shadows have the same shapes as objects that cast them.</p> <p>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.</p>	<p>information about living things millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind.</p> <p>Identify how plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>	<p>animals, including humans.</p>
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