

Science Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	← Continuous objective – Weather (cross curricular link with Geography) and seasonal changes →					
EYFS (N for Nursery and R for Reception)	Exploring the season of Autumn (N and R) <u>Plants:</u> Observation of plants in the school garden (N) Preparing EYFS outdoor for growing (R) <u>Materials</u> Explore materials with different properties (N)	Exploring the season of Winter (N and R) <u>Winter:</u> Sensory exploration of ice/snow (N) Melting and Freezing (R) <u>Materials</u> Explore natural materials, indoors and outdoors (N)	<u>Passport to the World:</u> Transported to another country for the day (N and R) Ideas: Aeroplanes and flight – watch the planes take off and land at the airport	Exploring the season of Spring (N and R) <u>Changes:</u> Life cycles – live egg hatch and duckling growth (N and R) Explore and respond to different natural phenomena in their setting (N) <u>Plants</u> Observe seeds growing (N)	<u>Mini beasts:</u> Study of different habitats (R) Minibeast hunting (N) Visit from company (Zoo Lab) (N and R) Grapes garden visit – minibeast focus (N) Caterpillar > butterfly experience (R)	Exploring the season of Summer (N and R) <u>Under the Sea:</u> Beach and pond clean Beach visit (N and R)
	← Continuous objective – Weather (cross curricular link with Geography) and seasonal changes →					
Year 1	<u>Materials:</u> * Distinguish between an object and the material from which it is made * Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock * Describe the simple physical properties of a	<u>Plants:</u> * Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees * Identify and describe the basic structure of a variety of common flowering plants, including trees *David Bellamy		<u>Humans (taken from Animals Including Humans unit)</u> * Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense *Mary Jackson	<u>Animals (taken from Animals Including Humans unit)</u> * Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals * Identify and name a variety of common animals that are carnivores, herbivores and omnivores	<u>Plants continued:</u> * Ask questions and notice patterns about where plants grow

	variety of everyday materials *Compare and group together a variety of everyday materials on the basis of their simple physical properties *Sarah Boone				*Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	
	← Continuous objective – Weather (cross curricular link with Geography) and seasonal changes →					
Year 2	<u>Materials</u> *Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses *Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching *Robert Hooke	<u>Animals including humans:</u> *Notice that animals, including humans, have offspring which grow into adults *Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) *Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (cross curricular links with DT and PE) Plant bulbs here ahead of plants unit in Spring 2 *Luke Gamble		<u>Plants</u> *Observe and describe how seeds and bulbs grow into mature plants *Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Plant seeds here and observe over time	<u>Living things in their habitat</u> *Explore and compare the differences between things that are living, dead, and things that have never been alive *Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other *Identify and name a variety of plants and animals in their habitats, including micro-habitats *David Attenborough	<u>Living things in their habitat continued:</u> *Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
Year 3	<u>Light:</u>	<u>Animals including humans:</u>	<u>Forces and Magnets:</u>		<u>Rocks:</u>	<u>Plants:</u>

	<p>*Recognise that they need light in order to see things and that dark is the absence of light</p> <p>*Notice that light is reflected from surfaces</p> <p>*Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>*Recognise that shadows are formed when the light from a light source is blocked solid opaque object</p> <p>*Find patterns in the way that the size of shadows change</p> <p>*Patricia Bath</p>	<p>*Know about balanced diets <i>(cross curricular links with DT and PE)</i></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>*Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>*Jamie Oliver</p>	<p>*Compare how things move on different surfaces</p> <p>*Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>*Observe how magnets attract or repel each other and attract some materials and not others</p> <p>*Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</p> <p>*Describe magnets as having two poles</p> <p>*Predict whether two magnets will attract or repel each other, depending on which poles are facing</p> <p>*Leonardo da Vinci</p>		<p>*Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>*Describe in simple terms how fossils are formed - when things that have lived are trapped within rock</p> <p>*Recognise that soils are made from rocks and organic matter</p> <p>*Mary Anning</p>	<p>*Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>*Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</p> <p>*Investigate the way in which water is transported within plants</p> <p>*Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> <p>*George Washington Carver</p>
Year 4	<p><u>Animals including humans (part one):</u></p> <p>*Identify the different types of teeth in humans and their simple functions</p> <p>*Describe the simple functions of the basic parts of the digestive system in humans</p> <p>*Robert Tanner Freeman</p>	<p><u>Animals including humans continued:</u></p> <p>*Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p><u>Sound</u></p> <p>*Identify how sounds are made, associating some of them with something vibrating</p> <p>*Recognise that vibrations from sounds travel through a medium to the ear</p> <p>*Find patterns between the pitch of a sound and</p>	<p><u>Electricity</u></p> <p>*Identify common appliances that run on electricity</p> <p>*Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>*Identify whether or not a lamp will light in a simple</p>	<p><u>Living things in their habitat</u></p> <p>*Recognise that living things can be grouped in a variety of ways</p> <p>*Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p>	<p><u>States of Matter</u></p> <p>*Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>*Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p>

			<p>features of the object that produced it</p> <p>*Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>*Recognise that sounds get fainter as the distance from the sound source increases</p> <p>*James West</p>	<p>series circuit, based on whether or not the lamp is part of a complete loop with a battery</p> <p>*Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>*Recognise some common conductors and insulators, and associate metals with being good conductors</p> <p>*Benjamin Franklin</p>	<p>*Recognise that environments can change and that this can sometimes pose dangers to living things</p> <p>*Dian Fossey</p>	<p>*Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>
Year 5	<p><u>Materials</u></p> <p>*Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>*Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>*Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<p><u>Forces</u></p> <p>*Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>*Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>*Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p> <p>*Tahani Amer</p>	<p><u>Animals including humans:</u></p> <p>*Describe the changes as humans develop to old age (Study the human life cycle in detail including the different stages of puberty)</p> <p>*Know about different gestation periods for animals and compare and contrast these</p> <p>*Elizabeth Garrett Anderson</p>		<p><u>Living things in their habitat</u></p> <p>*Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>*Describe the life process of reproduction in some plants and animals</p> <p>(Know the different parts of a flowering plant and how these relate to how they reproduce)</p> <p>*Use forest school to observe this in the local environment</p> <p>*Jane Goodall</p>	<p><u>Earth and space</u></p> <p>*Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>*Describe the movement of the Moon relative to the Earth</p> <p>*Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>*Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>*Zhang Heng</p>

	<p>*Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>*Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>*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</p> <p>*Christopher Johnson</p>					
Year 6	<p><u>Evolution and Inheritance</u></p> <p>*Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>*Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p>	<p><u>Animals including humans</u></p> <p>*Identify and name the main parts of the human circulatory system, and 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>*Describe the ways in which nutrients and water are transported within animals, including humans</p>	<p><u>Electricity</u></p> <p>*Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>*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</p>	<p><u>Living things in their habitats</u></p> <p>*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</p> <p>*Give reasons for classifying plants and animals based on specific characteristics</p>		<p><u>Light</u></p> <p>*Recognise that light appears to travel in straight lines</p> <p>*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</p> <p>*Explain that we see things because light travels from light sources to our eyes or from light</p>

	<p>*Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>*Charles Darwin</p>	<p>*Percy Lavon Julian</p>	<p>*Use recognised symbols when representing a simple circuit in a diagram</p>	<p>*Carl Linnaeus</p>		<p>sources to objects and then to our eyes</p> <p>*Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> <p>*Ibn al-Haytham (Alhazen)</p>
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