

## Science Curriculum Plan

By the end of studying Science at Beechwood Primary School, children will be able to talk about the below themes which they cover through Biology, Chemistry and Physics:

**Biology:** the children will discover and learn about animals including humans, plants, living things and their habitats and evolution and inheritance.

**Chemistry:** the children will explore everyday materials, rocks, states of matter and properties and changes in materials.

**Physics:** the children will study forces, light, electricity, sound and Earth and space.

Practical investigations will be planned in each topic to provide children with the opportunity to apply their core knowledge, deepen their understanding and make links with prior learning. Through the investigations children will be required to apply scientific enquiry skills; questioning, predicting, concluding, testing, identifying and classifying, recording, observing and measuring.

### Units and End Points

	Autumn	Spring	Summer
EYFS	<u>Understanding the world</u>  Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.		
Year 1	<u>Animals inc. humans</u>  Classify animals/amphibians/reptiles. Mammals. Fish and birds Know and classify herbivore/carnivore/omnivore Know and sort living and non living	<u>Everyday materials</u>  Know and name materials an object is made from Know properties of everyday materials	<u>Plants</u>  Know and name wild and garden plants Know and name petals, stem. Leaves and roots Know and name roots, trunk, branches and leaves
		<u>Seasonal changes</u>	

	Know and name parts of body that can be seen	Name seasons and explain typical type of weather for each	
Year 2	<u>Animals inc. humans</u>  Know basic stages of life cycle in animals inc humans Know why exercise, a balanced diet and good hygiene is important	<u>Everyday materials</u>  Know how materials can be changed by squashing, bending, twisting and stretching.	<u>Plants</u>  Know and explain how seeds/bulbs grow into plants Know what plants need in order to grow and stay healthy
		<u>Living things and habitats</u>  Classify living/dead/never lived Habitats provide basic needs for plants and animals Match living things to habitats. Name different sources of food Know and explain simple food chains	
Year 3	<u>Animals inc. humans</u>  Importance of a nutrition balanced diet How nutrients, water and oxygen are transported in animals/humans Skeletal and muscular system in humans	<u>Rocks</u>  Compare/group rocks based on appearance/physical properties Know how soil is made/how fossils are formed Difference between sedimentary/metamorphic/igneous rock	<u>Forces and Magnets</u>  How objects move on different surfaces Simple pulley works Contact/non-contact force Magnets – attract/repel
		<u>Light</u>  Dark is absence of light Need light to see Reflected from a surface	<u>Plants</u>  Function of different parts of a flowing plant/tree Water is transported within plants

		Demonstrate/explain shadows Dangers of direct sunlight	Life cycle of plant – importance of flower
Year 4	<u>Animals inc. humans</u>  Identify and name parts of human digestive system. Know the functions of organs in human digestive system Identify and know different types /functions of human teeth. Use and construct food chains to identify producers, predators and prey	<u>States of matter</u>  Group materials based on their state of matter (solids, liquid, gas) Know the temperature materials change state Know and explore how materials can change state Know about evaporation/condensation in water cycle	<u>Sound</u>  Know how sound is made – vibrating Know sound travels from source to ears Correlation between pitch and object producing a sound Correlation between volume and strength of vibrations Know what happens to a sound as it travels away from its source.
		<u>Living things and habitats</u>  Use classification keys to group/identify/name living things Know how changes to an environment could endanger living things	<u>Electricity</u>  Identify and name appliances that require electricity to function Construct a series circuit Identify/name components in series circuit Predict/test whether lamp will light Know function of switch Differences between conductor/insulator with examples
Year 5	<u>Animals inc humans</u>  Timeline indicating stages of growth in humans	<u>Properties and changes in materials</u>  Compare and group materials based on properties – hard soluble, transparency, conductivity, electrical, thermal, magnetic Know and explain how materials dissolve to form a solution Know and show how to recover a substance from a liquid	<u>Forces</u>  Know what gravity is and its impact on our lives Identify and show effect of air and water resistance Identify and know effects of friction

		Know and demonstrate materials can be separated Reversible/irreversible changes Changes can result in formation of a new material which is usually irreversible	
	<u>Earth &amp; space</u>  Know about and explain movement of Earth and other planets relative to the sun Know about and explain movement of the moon relative to Earth Know and demonstrate how day and night are created Describe the sun, earth & moon using term spherical Explain levers, pulleys and gears work	<u>Living things and habitats</u>  Know the life cycle of different living things – mammal, amphibian, insect & bird. Know the differences between different life cycles Process of reproduction in plants Process of reproduction in animals.	
Year 6:	<u>Animals inc humans</u>  Identify and name main parts of circulatory system Know function of heart, blood vessels and blood Know impact of diet, exercise, drugs, lifestyle on health Know ways nutrients and water are transported in animals inc humans	<u>Evolution &amp; inheritance</u>  Know how Earth and living things have changed over time Know how fossils can be used to find out about the past Know about reproduction and offspring Know how plants and animals are adapted to suit their environment Link adaptation over time to evolution Know about evolution and can explain what it is	<u>Light</u>  Know how light travels Know and demonstrate how we see objects Know why shadows have the same shape as the objects that cast them Know how simple optical instruments work- periscope, telescope, binoculars etc
		<u>Living things and habitats</u>	<u>Electricity</u>

		<p>Classify living things into broad groups according to observable characteristics based on similarities and differences</p> <p>Know how living things have been classified</p> <p>Give reasons for classifying plants and animals in specific ways</p>	<p>Compare and give reasons why components work /don't work in circuits</p> <p>Draw circuit diagrams using correct symbols</p> <p>Know how number and voltage of cells in a circuit links to brightness of bulb or volume of buzzer</p>
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