

St Andrew's Church of England Primary School

Science Overview

<p>Year 1 (Cycle A)</p>	<p>Materials <i>Identify, name and describe simple physical properties of everyday materials (incl. wood, plastic, glass, metal, rock, water) Distinguish between an object and the material from which it is made Compare and group together a variety of materials on the basis of their simple physical properties</i></p> <p>Seasons <i>Observe seasonal changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies (Working scientifically: make tables and charts about the weather / Keep records of how plants have changed over time, e.g. leaves falling off trees and buds opening' / make displays of what happens around them including day length)</i></p>	<p>Animals including humans (animal adaptations, habitats, life cycles) <i>Identify and name a variety of common animals (incl fish, amphibians, reptiles, birds, mammals) (including minibeast hunt and taking care of animals found). Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify and name a variety of common animals that are carnivores, herbivores and omnivores (Mini-beast hunt in Spring 2 – focus on taking care of creatures found).</i></p>	<p>Animals including humans <i>Identify, name, draw and label basic parts of the human body and say which part of the body is associated with each sense.</i></p> <p>Plants (and trees) <i>Identify and name a variety of common wild and garden plants, incl. deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants including trees. Observe growth of flowers and vegetables pupils have planted. Identify that most plants are suited to their habitat and describe how habitats provide their basic needs and how they depend on each other.</i></p>
<p>Working scientifically:</p> <ul style="list-style-type: none"> • Ask simple questions. • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. • Use observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions. 			

<p>Year 2 (Cycle A)</p>	<p>Focus: Working Scientifically (investigate materials) <i>Identify and compare the suitability of everyday materials for particular uses (link to GFOL). Find out how the shapes of solid objects made from some materials can be changed (squashing, bending, twisting, stretching). Include: find out about people who have developed useful new materials: John Dunlop, Charles Macintosh, John McAdam / classifying and recording observations.</i></p> <p><i>Vocab: use, material, squash, bend, twist, stretch, properties</i></p>	<p>Living things and their habitats: <i>Identify and name a variety of animals in their habitats, including micro-habitats. Identify that most animals are suited to their habitat and describe how habitats provide their basic needs for different kinds of animals and how they depend on each other. Explore and compare things that are living, dead and have never been alive. Describe how animals obtain food from plants and other animals, using the idea of a simple food chain, and identify and name different food sources. (Mini-beast hunt in Spring 2 – focus on taking care of creatures found).</i></p>	<p>Animals including humans <i>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, air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</i></p> <p>Plants <i>Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable.</i></p>
<p>Year 3</p>	<p>Animals, Including Humans <i>In this unit, children will learn about the importance of the right type and amount of nutrition. They will also learn about the functions of skeletons and muscles.</i></p> <p>Light <i>In this unit, children will learn about light, reflections and shadows. They will learn about different sources of light, and that we need light to see. Children will learn about reflective materials, reflective surfaces and that the sun’s light can be dangerous.</i></p>	<p>Rocks <i>In this unit, children will find out about the different types of rocks and how they are formed. They will compare and group rocks based on their appearance and simple properties. Children will learn how fossils are formed and the contributions of Mary Anning to the field of palaeontology.</i></p> <p>Plants <i>In this unit, children will learn the names of different parts of plants and the jobs they do. They will investigate what plants need to grow well and learn about the transportation of water within plants.</i></p>	<p>Forces and Magnets <i>In this unit, children will learn about forces, friction and magnetic attraction. They will learn about forces in the context of pushing and pulling, and will identify different actions as pushes or pulls. They will investigate friction, by exploring the movement of a toy car over different surfaces. Children will identify magnetic materials, investigate the strength of different types of magnet and explore the way magnetic poles can attract and repel.</i></p> <p>Additional time <i>*If all units completed, study significant scientists/inventors in line with school diversity driver</i></p>

	<p>Working scientifically:</p> <ul style="list-style-type: none"> • Ask relevant questions. • Set up simple, practical enquiries and comparative and fair tests. • Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests. • Identify differences, similarities or changes related to simple, scientific ideas and processes. • Use straightforward, scientific evidence to answer questions or to support their findings. 		
<p>Year 4</p>	<p>Animals, Including Humans</p> <p><i>In this unit children will learn about the digestive system in humans and other animals. They will identify the different types of teeth and their functions. Children will learn about herbivores, carnivores and omnivores in the context of teeth, digestion and the food chain. They will then extend their understanding of food chains to create more complex chains and food webs.</i></p> <p>Living Things and Their Habitats</p> <p><i>In this unit children explore a variety of ways to identify, sort, group and classify living things. They learn how animals are split into ‘vertebrates’ and ‘invertebrates’ and begin to consider the differences between living things within these classifications. They use and make classification keys to identify and name living things in the local habitat and beyond. Children will also learn that environments can change and that these changes can be natural or man-made. They will discover changing environments can have a significant impact on living things.</i></p>	<p>Sound</p> <p><i>In this unit children will work in a hands-on way to discover how sounds are made and associate them with something vibrating. They will learn how particles pass sound vibrations on and explore how the loudness and pitch of sounds can be changed. They will investigate how sounds change over distance and through different materials.</i></p> <p>Electricity</p> <p><i>This is the first unit of electricity studied in KS2. Children will learn what electricity is and how it was discovered. They will identify appliances that use electricity in their homes and how to keep themselves safe around it. Children will construct circuits and start to create pictorial representations of them.</i></p>	<p>States of Matter</p> <p><i>This unit teaches children about the differences between solids, liquids and gases. They will classify objects and identify their properties. Children will discover how some materials change state; exploring melting, freezing, condensing and evaporating. They will then learn about the different stages of the water cycle.</i></p> <p>Additional time</p> <p><i>*If all units completed, study significant scientists/inventors in line with school diversity driver</i></p>

<p>Year 5</p>	<p>Forces</p> <p><i>In this unit, children will learn about forces such as gravity, friction, water resistance and air resistance. They will also learn about mechanisms such as levers, gears and pulleys. Children will identify forces and find out about Isaac Newton and his discoveries about gravity, and look for patterns and links between the mass and weight of objects. They will investigate air and water resistance, and explore friction.</i></p> <p>Properties and Changes of Materials</p> <p><i>In this unit, children will learn about different materials, their uses and their properties, as well as dissolving, separating mixtures and irreversible changes. They will sort and classify objects according to their properties and explore the properties to find the most suitable material for different purposes.</i></p>	<p>Earth and Space</p> <p><i>Children will be introduced to the basics of astronomy; an overview of Earth and its place in our solar system.</i></p> <p>Living Things and Their Habitats</p> <p><i>In this unit, children will learn about the process of reproduction and the life cycles of plants, insects, amphibians, birds and mammals. They will recap their learning from Year 3 and label the parts of a plant before exploring reproduction in different plants, including different methods of pollination and asexual reproduction. Children will learn about the different life cycles of mammals and birds, and metamorphosis in insects and amphibians.</i></p>	<p>Animals, Including Humans</p> <p><i>In this unit, children will learn about the different stages of the human lifecycle.</i></p> <p>Additional time</p> <p><i>*If all units completed, study significant scientists/inventors in line with school diversity driver</i></p>
<p>Year 6</p>	<p>Animals, including humans</p> <p><i>In this unit, children will build on their knowledge and understanding of different systems within the body. They will research the parts and functions of the circulatory system, and focus on how nutrients are transported around the human body. Children will explore how a healthy life cycle supports the body to function and how different types of drugs affect the body.</i></p> <p>Electricity</p> <p><i>In this unit, children will build on their knowledge of electricity from Year 4, and find out about two important scientific inventors – Thomas Edison and Nikola Tesla.</i></p>	<p>Living Things and Their Habitats</p> <p><i>In this unit, children will learn about the classification of living things, including micro-organisms. They will build on their knowledge from Year 4 by sorting animals into groups based on their similarities and differences, and will extend their learning to find out about the standard system of classification first developed by Carl Linnaeus.</i></p> <p>Evolution and Inheritance</p> <p><i>In this unit, children will learn about the classification of living things, including micro-organisms. They will build on their knowledge from Year 4 by sorting animals into groups based on their similarities and differences, and will extend their learning to find out about the</i></p>	<p>Light</p> <p><i>In this unit, children will build further on their knowledge of light, shadows, reflection and refraction from Year 3. They will learn how light travels and how this enables us to see objects. Children will find out how light creates the colours we see, and about Isaac Newton and his theory of light and colour.</i></p> <p>Additional time</p> <p><i>*If all units completed, study significant scientists/inventors in line with school diversity driver</i></p>

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Following God's Path to Flourish in Life