

***"Giving children the keys to unlock their future"***



### **St Peter's C of E Academy – Science**

At St Peter's we recognise the importance of Science as an aspect of everyday life. As one of the core subjects taught, we give the teaching and learning of Science the prominence it requires. The Scientific area of learning is concerned with increasing the skills associated with Science as a process of enquiry and will develop natural curiosity in the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence. We will deliver a Science curriculum which develops learning and results in the acquisition of knowledge which enables children to become enquiry based learners.

A clear and comprehensive scheme of work, in line with the National Curriculum, is supported by a knowledge and skills progression that makes connections between new learning and prior knowledge. This allows teaching and learning to show progression across the school within the strands of Science, enabling children to ask questions and become enquiry based learners. Opportunities are also found to develop children's understanding of their surroundings by accessing outdoor learning area and workshops with experts. Working scientifically, skills are embedded into lessons to ensure these skills are being developed throughout the children's school career; new vocabulary and challenging concepts are introduced through direct teaching.

Our curriculum and skills progression is shown below:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Reception</b>	<b>All About Me</b> CL Learn new vocabulary. PSED Know and talk about the different factors that support their overall health and wellbeing. PD Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - having a good sleep routine Further develop the skills they need to manage the school day successfully: • mealtimes • personal hygiene	<b>Let's Celebrate</b> UW Explore the natural world around them. Describe what they see, hear and feel whilst outside.	<b>Nursery Rhymes</b> UW ELG Understand changes in the natural world around them, including the changing states of matter.	<b>Seasons inc Plants</b> CL Ask questions to find out more and to check what has been said to them. UW Explore the natural world around them. UW Describe what they see, hear and feel while they are outside. UW Recognise some environments that are different to the one in which they live. UW ELG Understand changes in the natural world around them, including the seasons.	<b>Transport</b> UW Recognise some environments that are different to the one in which they live. PD Know and talk about the different factors that support their overall health and wellbeing: - being a safe pedestrian	<b>Around the World</b> CL ELG Make comments about what they have heard and ask questions to clarify their understanding. UW ELG Explore the natural world around them, making observations and drawing animals/ plants. UW ELG Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class
<b>Year 1</b>	<b>My Body</b> To be able to identify, name and label body parts. To explore what parts of our bodies we use for different activities. To find out about the five senses, in particular the sense of sight. To explore the sense of touch. To explore the sense of smell. To explore the sense of taste. To explore the sense of sound.	<b>Everyday Materials</b> To be able to identify a variety of common materials. To be able to distinguish between the object and material in which its made. To be able to describe materials according to their properties. To be able to describe why some materials suit certain objects better than others. To carry out an experiment to find out which materials are waterproof.	<b>Identifying Animals</b> To be able to identify and name a variety of common animals. To be able to identify and name a variety of common UK mammals. To be able to identify and compare a variety of common UK birds and reptiles. To be able to identify and compare a variety of common UK fish and amphibians. To be able to identify and sort carnivores, herbivores and omnivores. To be able to take care of animals. To collect data about animals and answer questions.	<b>Identifying Plants</b> To find out what a plant is. To identify and describe garden plants. To identify and describe wild plants. To identify and describe a range of trees. To identify the different parts of a plant. To make observations of growing plants.	<b>Seasonal Changes</b> Find out about different seasons and how to describe them. Find out about the seasons and how they are different. Find out about how animals are affected by the seasons. Find out about how humans are affected by the seasons. Find out about how amount of daylight is affected by the season. Investigate the weather during the seasons.	
<b>Year 2</b>	<b>Living in Habitats</b> To be able to identify things that are living,	<b>Growth and Survival</b>	<b>Everyday Materials</b> To be able to identify a variety of materials and sort	<b>Growing Plants</b> To understand that different seeds grow into different plants and to describe them.		<b>Super Scientists</b>

	<p>things that are dead and things that have never been life.</p> <p>To understand that living things need to live in suitable habitats.</p> <p>To explore the plants and animals that live in seaside habitats.</p> <p>To be able to explore the plants and animals in an unfamiliar habitat.</p> <p>To be able to explore and describe a mico-habitat.</p> <p>To explore food chains in a habitat.</p>	<p>To find out about the offspring of a variety of different animals.</p> <p>To find out about the different ways in which animals reproduce.</p> <p>To explore how humans grow as they get older.</p> <p>To find out what animals including humans need to survive.</p> <p>To explore the environment as a factor of survival for animals including humans.</p> <p>To find out how to eat a healthy balanced diet.</p> <p>To find out why exercise is important to keep our bodies healthy.</p>	<p>them according to a variety of criteria.</p> <p>To identify that some materials can change shape by squashing, bending, stretching and twisting and others can't.</p> <p>To identify the suitability of metal and plastic for a variety of purposes.</p> <p>To identify different products that can be made from wood and their features and purposes.</p> <p>To identify different materials that are used for the same product.</p> <p>To identify material inventions and discoveries.</p>	<p>To understand that plants can be grown from bulbs.</p> <p>To be able to explain why and how seeds are dispersed.</p> <p>To plan, carry out and evaluate an investigation into the conditions that affect germination.</p> <p>To observe and describe how a plant changes as it matures.</p>	<p>To investigate the affect gravity has on everyday objects.</p> <p>To investigate what happens to light when it passes through different transparent objects.</p> <p>To investigate whether sound can pass through materials.</p> <p>To investigate our senses and reflexes.</p> <p>To investigate how germs are transferred by touching things.</p> <p>To investigate electrical circuits to make a light bulb light up.</p>	
<b>Year 3</b>	<b>Forces &amp; Magnets</b> <p>To explore what forces are and notice that some forces need contact between two objects.</p> <p>To compare how things move on different surfaces.</p> <p>To explore how magnetic forces work.</p> <p>To be able to identify magnetic materials.</p> <p>To investigate uses for magnets.</p>	<b>Rocks, Fossils &amp; Soils</b> <p>To be able to identify naturally occurring rocks and explore their uses.</p> <p>To be able to group rocks according to their characteristics.</p> <p>To be able to plan and carry out and evaulate experiments to compare rocks.</p> <p>To identify rocks that are used for particular purposes.</p> <p>To explore soil and how it is formed.</p> <p>To explore what fossils are and how they are formed.</p> <p>To be able to identify fossilised remains.</p>	<b>Light and Shadow</b> <p>To recognise that we need light in order to see.</p> <p>To explore the sun as a light source and identify the different between night and day.</p> <p>To investigate what shadows are and why they are formed.</p> <p>To investigate how shadows behave.</p> <p>To investigate how shadows change over course of the day.</p> <p>To explore how lights are reflected off surfaces</p>	<b>Health &amp; movement</b> <p>To identify that humans get the nutrition they need from what they eat.</p> <p>To identify that a balanced diet is needed in order to stay healthy.</p> <p>To investigate which foods different animals eat.</p> <p>To carry out an investigation to find out what pets eat.</p> <p>To explore human and animal skeletons.</p> <p>To find out about how the skeleton supports and protects the body.</p> <p>To investigate how invertebrates are supported.</p> <p>To find out what muscles are and how skeletal muscles help us to move.</p>	<b>Eating and digestion</b> <p>To be able to identify and classify carnivores, herbivores and omnivores.</p> <p>To be able to construct and interpret a variety of food chains.</p> <p>To identify the different types of teeth in humans and identify their functions.</p> <p>To explore different ways of keeping teeth healthy.</p> <p>To investigate how the digestive system works.</p> <p>To be able to describe the functions of the basic parts of the digestive system.</p>	
<b>Year 4</b>	<b>States of matter</b>	<b>Sound</b>	<b>Circuits and conductors</b>		<b>How plants grow</b>	<b>Living in environments</b>

	<p>To compare and group materials together according to whether they are solids or liquids.</p> <p>To identify and explore the properties of gases.</p> <p>To observe that materials change state when they are heated or cooled.</p> <p>To research the temperature in degrees Celsius (*C) at which materials change state.</p> <p>To understand the process of evaporation.</p> <p>To understand the process of condensation.</p> <p>To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>To find out that sounds are made when objects and materials vibrate.</p> <p>To investigate whether sounds can travel through different materials.</p> <p>To explore the relationship between distance and volume.</p> <p>To find out that some materials are effective in preventing vibrations from sound sources reaching the ear.</p> <p>To investigate how sounds can be different pitches and volumes.</p> <p>To find out how the length, thickness and tightness of a string affects its pitch.</p> <p>To find out how sounds can be made by air vibrating and how to change the pitch of notes created by vibrating air.</p>	<p>To investigate circuits and their different components.</p> <p>To investigate the differences between mains and battery powered circuits.</p> <p>To recognise some common conductors and insulators and associate metals with being good conductors.</p> <p>To investigate the purposes of conducting and insulating materials.</p> <p>To be able to use knowledge of conductors and insulators in order to create switches to complete a circuit.</p> <p>To be able to plan and carry out an experiment to see how to change the brightness of a bulb.</p>		<p>To identify and describe the functions of the roots of flowering plants.</p> <p>To investigate the way in which water is transported in plants.</p> <p>To identify and describe the functions of leaves in flowering plants.</p> <p>To explore the part that flowers play in the life cycle of flowering plants including pollination, seed formation and see dispersal.</p> <p>To explore some the ways in which flowering plants disperse their seeds.</p> <p>To understand the structure of seeds and their importance as a food source.</p>	<p>To be able to identify a variety of habitats and explore why organisms live in different habitats.</p> <p>To be able to group organisms according to their characteristics.</p> <p>To be able to classify animals into specific groups according to their characteristics.</p> <p>To be able to use a classification key to classify animals.</p> <p>To be able to identify and classify a variety of different British plants.</p> <p>Explore the human impact on habitats and environments.</p>
<b>Year 5</b>	<p><b>Properties and changes of Materials</b></p> <p>To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>That some changes of state and dissolving and mixing processes can be reversed through filtering, sieving and evaporating.</p> <p>Explain that some changes form new materials, and that these changes are not usually reversible.</p>	<p><b>Living things and habitats (Life cycles of animals and plants)</b></p> <p>To describe the process of sexual reproduction in flowering plants.</p> <p>To describe the process of asexual reproduction in plants.</p> <p>To describe the process of sexual reproduction in animals.</p> <p>To observe and compare the life cycles of animals in our local environment with other animals.</p>	<b>Earth and space</b>	<b>Forces</b>	<p><b>Changes and reproduction</b></p> <p>To recognise the stages of growth and development in humans.</p> <p>To know the stages in the gestation period of humans and compare them to other animals.</p> <p>To recognise the stages of development during childhood and understand the needs of children at those stages.</p> <p>To understand the initial changes inside and</p>	

	<p>Explain the some changes caused by heating or cooling form new materials, and that these changes are often not reversible.</p> <p>Explain that changes caused by burning form new materials, and that these materials are not reversible.</p> <p>To compare and group together everyday materials on the basis of their properties.</p> <p>To give reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials.</p>	<p>To compare how different animals reproduce and grow.</p> <p>To find out about the work of naturalists.</p>			<p>outside of the body during puberty.</p> <p>To know the changes that occur during puberty and how they differ for boys and girls.</p> <p>Understand how the body changes during adulthood and old age.</p>	
<b>Year 6</b>	<p><b>Light</b></p> <p>Recognise that light appears to travel in straight lines</p> <p>Use this idea 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 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><b>Animals inc Humans Healthy Bodies</b></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 human</p>	<p><b>All Living Things &amp; Their Habitats – Classification</b></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><b>Electricity – Changing Circuits</b></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>Use recognised symbols when representing a simple circuit in a diagram</p>	<p><b>Evolution and Inheritance</b></p> <p>Recognise how 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>Identify how animals &amp; plants adapt to their environment in different ways and that adaptation may lead to evolution</p>

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