



Pocklington CE Infant School

Progression in Science Knowledge & Skills

What is Science?	
Our Aims (Intent)	We will do this through (Implementation)
<p>Our Science curriculum provides all children with a broad, balanced, engaging and practical Science programme of study, which prepares them for life beyond primary education. Science, in our school, is about developing children's ideas and ways of working that enable them to make sense of the world in which they live. We teach children the knowledge and skills they need to be successful learners and in wider life. Staff ensure that all children are exposed to high quality teaching of biology, chemistry and physics and practical, hands-on learning experiences, allowing children, where possible, to explore their outdoor environment, community and locality, therefore developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. Our teaching sequence allows children to cumulatively build knowledge and skills, as seen on the Science Long Term Plan and White Rose Science Overviews.</p>	<p>Our science teaching is underpinned by our vision for happy children loving learning. Lessons are structured around reflective learning and questioning opportunities for all pupils building on their prior knowledge and providing cross-curricular links, in an environment that encourages pupils to pose their own questions to develop their ideas and independence. Through shared experiences we nurture and apply pupils' science learning to real-life experiences, making science meaningful. Hands-on, practical experiences of working with a range of scientific methods to explore, inspire and foster pupils' natural curiosity, and most importantly make learning fun. We deliver a creative, inclusive and stimulating science curriculum, enabling pupils to secure and extend their scientific knowledge and vocabulary.</p> <p>The medium-term planning and progression mapping of science lessons will reflect exactly what content, knowledge and skills are critical for pupils to progress through the curriculum in each year. There is a clearly mapped progression document that shows how these topics progress across the years including EYFS. KS1 teachers plan using White Rose Science scheme for each science topic. Working scientifically processes and methods are embedded in lessons so that children learn to use a variety of skills to answer scientific questions / investigations. These are: asking questions, planning, making observations, taking measurements, gathering, recording and classifying data, presenting findings and making conclusions. Children learn in a variety of ways, and so where appropriate, children will learn science outside the classroom. We make use of our outdoor areas as well as classroom spaces, so that children can clearly see things in context which promotes and fosters an emotional connection between children and the natural environment. The outdoors also facilitates creative activities such as drawing and sketching, basic skills in science that we should encourage. We mark special days such as World Science Week.</p> <p>Teacher expectations challenge pupils and ensure progression throughout the school, whilst being underpinned by CPD contained in White Rose Science scheme and collaborative training in school.</p>



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EYFS - Nursery & Reception							
The Natural World- Science							
Birth-Three . Repeat actions that have an effect. . Explore materials with different properties. . Explore natural materials, indoors and outside.		Three- Four Years Use all their senses in hands-on exploration of natural materials. . Explore collections of materials with similar and/or different properties.		Reception . Explore the natural world around them. . Describe what they see, hear and feel whilst outside.		Writing- ELG . Explore the natural world around them, making observations and drawing pictures of animals and plants. UTW. TNW.ELG	
	Nursery Baseline	Nursery End of Autumn 2	Nursery End of Spring 2	Nursery End of Summer 2 Reception Baseline	Reception End of Autumn 2	Reception End of Spring 2	Reception EY Profile Year One Baseline

	I can talk about materials. (Collections of the same materials, e.g., shells, leaves) I can talk about what I can see.	I can explore collections of different materials with similar and different properties. I can name some common materials, e.g. sand, wood, glass, brick, clay, fabric etc with adult support.		I can name some common materials, e.g. sand, wood, glass I can use language to describe common features of materials, e.g. colour, texture, size. I choose how I can classify objects according to their properties.	I can describe and make comparisons between materials. I can talk about the changes to materials that I notice.	I can experiment with making changes to materials. I can ask and answer 'how' and 'why' questions, such as how things happened and how things work.	I understand some important processes and changes in the natural world around them. UTW.TNW.ELG. I can explore the natural world around them, making observations and drawing pictures of animals and plants. UTW. TNW.ELG
Seasonal Change	I can name some types of weather, e.g. rainy, sunny, windy, snowy, cloudy and stormy.	I can talk about some natural features that I see and feel during different seasons, including different weather.	I can talk about the clothes that I need for different seasons/ weather and why.	I can describe what I see, hear and feel whilst outside.	I can describe how the seasons can affect the natural world and how things grow. e.g. acorns and conkers are found in autumn and some trees have no leaves in winter.	I notice and describe seasonal weather patterns. I can ask and answer 'how' and 'why' questions. I can name and order the four seasons.	I understand some important processes and changes in the natural world around them, including the seasons. UTW.TNW.ELG.
Living things – Animals including humans	I can name some animals correctly.	I can use simple language to describe animals.		I am beginning to understand the need to care and respect and care for the natural environment and living things.	I make close observations of animals in the natural world. I make comparisons and identify similarities and differences.	I can explain where a range of animals live. (woodland, sea)	I understand through books and observations that animals change, and I explain a range of lifecycles. I can explore animals in the natural world, making observations

						and drawings of plants. UTW.TNW.ELG.
Living things - Plants	I can talk about the plants and trees I can see in my environment.	I can use my senses in hands on exploration of natural materials.	<p>I am beginning to understand the need to care and respect and care for the natural environment and living things.</p> <p>I can describe what I can hear, see and feel whilst outside.</p>	I make close observations of plants in the natural world. I make comparisons and identify similarities and differences.	<p>I can talk about what plants need to survive and grow healthily.</p> <p>I can use the correct basic scientific vocabulary to describe parts of plants.</p>	<p>I understand through books and observations that plants change, and I explain a range of lifecycles.</p> <p>I understand how plants grow and change. UTW.TNW.E L GOAL. I can explore plants in the natural world, making observations and drawings of plants. UTW.TNW.ELG.</p>



Working scientifically	<p>Planning, making decisions about how to approach a task, solve a problem and reach a goal (Thinking Critically)</p> <p>Showing curiosity about objects, events and people (Playing and Exploring)</p> <p>Thinking of ideas about the world around them (Thinking Critically)</p> <p>Pay attention to details when observing the world around them (Active Learning)</p> <p>Using senses to explore the world around them (Playing and exploring)</p> <p>Checking how well their activities are going (Thinking Critically)</p> <p>Develop ideas of grouping, sequences (Thinking Critically)</p> <p>Review how well an approach worked (Thinking Critically)</p> <p>Develop ideas of cause and effect (Thinking Critically)</p> <p>Find new ways to solve problems and new ways to do things (Thinking Critically)</p> <p>Make links and notice patterns in their experiences (Thinking Critically)</p>
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Year 1								
	Seasonal Changes		Animals Including Humans		Plants		Materials	
Skills & Knowledge	<ul style="list-style-type: none"> Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies 		<ul style="list-style-type: none"> 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 Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 		<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties 	
Working Scientifically	Ask Questions	Plan	Make Observations	Take Measurements	Gather, Record & Classify Data	Present Findings	Answer Questions & Make Conclusions	Evaluate
	<ul style="list-style-type: none"> Ask simple questions. 	<ul style="list-style-type: none"> Verbally state what they are going to investigate. 	<ul style="list-style-type: none"> Observe closely. 	<ul style="list-style-type: none"> Carry out simple tests using nonstandard measurements when appropriate. 	<ul style="list-style-type: none"> Gather and record simple data. Sort objects and living things into groups based on simple properties. 	<ul style="list-style-type: none"> Explain what they found out to an adult or a partner. 	<ul style="list-style-type: none"> Answer simple questions. 	
Website	White Rose Science - https://whiteroseeducation.com/resources/science/primary Explorify - https://explorify.uk/en/activities							
Assessment	Teacher Assessment of learning during lessons followed by a White Rose end of block assessment.							

Year 2								
	Living Things & Their		Animals Including Humans		Plants		Materials	
Skills & Knowledge	<ul style="list-style-type: none"> 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 microhabitats 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 		<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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 	
Working Scientifically	Ask Questions	Plan	Make Observations	Take Measurements	Gather, Record & Classify Data	Present Findings	Answer Questions & Make Conclusions	Evaluate
	<ul style="list-style-type: none"> Ask simple questions and recognise that they can be answered in different ways. 	<ul style="list-style-type: none"> Make simple predictions based on a question. Identify what they will change and keep the same. 	<ul style="list-style-type: none"> Observe closely, using simple equipment. 	<ul style="list-style-type: none"> Perform simple tests using standard units when appropriate. 	<ul style="list-style-type: none"> Gather and record data to help in answering questions. Identifying and classifying. 	<ul style="list-style-type: none"> Talk about what they have found out and how they found it out. (non-statutory) 	<ul style="list-style-type: none"> Use their observations and ideas to suggest answers to questions. 	
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