



Our aim is to provide all our children with an engaging, exciting and empowering curriculum that equips them with the skills for success both now and in the future.

The development of our curriculum is based on the following key principles to meet the needs of the children in our community:

- To provide opportunities for all pupils to progress in their learning
- To promote spiritual, moral, social and cultural development
- To develop positive characteristics in our pupils with an emphasis on resilience for learning
- To provide pupils with a sense of place but to also widen their outlook to the world beyond.
- To give all pupils, especially disadvantaged pupils, experiences and essential knowledge that broaden their opportunities in life.

We believe the best schools reflect their local communities; we bring the community into our school and we take our pupils out into the community. The best schools also look beyond their local community and we ensure our pupils are part of the national and international conversation. We teach pupils how to be active members of the community and how to be good citizens of the world.

Curriculum statement for the teaching and learning of Science 2022/23

I N T E N T

At Porthleven Primary School, we recognise the importance of Science in every aspect of daily life. The focus in our science curriculum is for our pupils to gain knowledge through practical skills and meaningful experiences linked to real life and the natural world.

Following the National Curriculum our Science teaching offers opportunities for children to:

- Develop scientific knowledge and conceptual understanding across Biology, Physics and Chemistry topics.
- Develop understanding of the processes and methods of Science through different types of science enquiries that help them to ask and answer scientific questions about the world around them;
- Develop the essential practical scientific enquiry skills to deepen their scientific knowledge such as planning enquiries and carrying them out.

- Use a range of methods to communicate their scientific information and present it in different ways.
- Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.
- Above all, develop a passion, enthusiasm and enjoyment of scientific learning and discovery and to be curious learners

Children have weekly lessons in Science throughout Key Stage 1 and 2, using various programmes of study and resources. In Early Years, science is taught through the children learning about the world around them in their learning through play.

U n d e r p i n n e d B y	The teaching of skills	The application of skills	Vocabulary
	<p>Porthleven Primary pupils will learn the key disciplinary skills needed to work scientifically:</p> <ul style="list-style-type: none"> • Asking questions • Making predictions • Planning and setting up enquiries • Observation and measuring • Recording results • Interpreting and evaluating results. <p>We follow the Plymouth Science scheme with explicitly focuses on a working scientifically skill each lesson. These skills will be modelled through lessons and scaffolded to enable children to learn and practise them as they go through the school. We will ensure to focus on only one or two skills during an enquiry to enable us to have the time to model it clearly and children given opportunities to practise. These skills are revisited constantly throughout teaching units and across the year.</p>	<p>Pupils cover a variety of Biology, Physics and Chemistry through their time in Porthleven. Each lesson will have a focused enquiry type to ensure they are practising the disciplinary working scientifically skills and also learning the substantive knowledge they will need as scientists.</p> <p>Our children need varied opportunities to practise their skills and learn through different enquiry types:</p> <ul style="list-style-type: none"> • pattern spotting • classifying and identifying • observations over time • fair testing • research • problem solving. 	<p>Science vocabulary is built upon in each year group and there is a progression of key vocabulary that runs through each unit of work such as Plants, Animals incl. Humans, Habitats, Materials from Year 1 to Year 6. The key subject and skill vocabulary can be seen on our Science progression documents for each unit.</p>

I m pl	Curriculum Approach	Retrieval Starters and Discussion	Resources & Science Capital
	Teachers create a positive attitude to science learning within their classrooms		<p>Children have access to a wide variety of science resources to help them with their practical enquiries.</p> <p>We have a variety of practical equipment on hand for</p>

<p>e m e n t a ti o n</p>	<p>and nurture an environment where children can ask questions and be curious about the world. We use the Plymouth Science scheme in science.</p> <p>Our whole school approach to the teaching and learning of science involves the following;</p> <ul style="list-style-type: none"> • Science is taught in classes once a week. Although teachers may endeavour to make purposeful links with termly topics and make connections at other times, it will be discrete from topic work to ensure coverage of the yearly units and is sequenced in a set pattern through the year.. Science work is recorded in its own science book in Year 2-6 and in Reception/ the first [part of Y1 in a class floor book. • We begin with retrieval and reactivating tasks each lesson using a range of different resources such as explorify/concept cartoons and focus education retrieval activities. • We discuss key vocabulary, real life contexts of our learning and address possible misconceptions in children's learning. 	<p>Lessons will begin with ensuring children have a chance to reactivate prior 'sticky knowledge' they will need for that lesson. We use different retrieval tasks to help with this as well as low stake quizzing.</p> <p>Through our planning, we also endeavour to get children asking their own questions and using scientific vocabulary. Lessons may also include activities to start discussion using resources such as Explorify and Concept Cartoons</p> <p>These discussion activities starters are also a great way of recapping previous learning from different year groups and vocabulary as well as pre-assessment for future learning concepts.</p>	<p>enquiries as well other resources such as books, images, models and hands on materials. We have also used Developing experts to show our children expert videos where they can see a range of different videos from scientists or other professions that use the application of science to solve problems to explain key information.</p> <p>For the summer term, we are currently expanding our range of books to enhance children's science capital and have carefully mapped out books that link with every science unit through the school. We are also currently working on bringing a bigger focus on scientists linked to our topic areas and ensuring children making meaningful links to what they learn in their lessons, to the wider world and possible future careers in STEM they may envision.</p> <p>We use the outdoor environment for learning on our school grounds throughout the year for fieldwork and practical enquiry and research. We have a sensory garden in the school and large grassy areas for biology links such as minibeast hunts, plant studies and tracking shadows etc.</p> <p>As a school we engage with forest schools having forest school clubs at school and visiting local national trust properties such as Penrose which includes activities linked to our science curriculum as well as other cross circular links. We also use field trips to enrich our learning such as the KS1 children visiting local farms through their life cycle unit to see when calves and lambs are born or to the local village beach and seaside to look at local habitats.</p>
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<ul style="list-style-type: none"> • Our tasks have an enquiry and discipline focus for every lesson which is used alongside the substantive information being taught. • We reflect and address misconceptions from our learning at the close of lessons if needed. 		<p>We participate in Science week each year and try and take on a theme throughout the school; for example previous years we have had a 'Sweet science' theme where we focused on different enquiries around sweets and biscuits and another year we had a 'Crime scene' focus where classes staged crime scenes and solved them by conducting different enquiries related to science techniques.</p>
<p>Learning Journeys</p> <p>Each new science topic will be introduced with a Learning Journey which will offer a summary of the whole topic, small step learning and vocabulary to aid their learning as well review of any prior learning. These will include the objectives they are achieving each lesson and the related sticky knowledge we want them to learn.</p> <p>These will be used throughout the science topic for reference to ensure key spellings of vocabulary and for any misconceptions.</p> <p>They will also show opportunities to reactivate previous learning from lessons.</p>	<p>Concepts</p> <p>The science curriculum is divided into a sequenced order of Biology, Chemistry and Physics units throughout the entire school relating to the NC objectives.</p> <p>Our key concepts focus on two parts</p> <ol style="list-style-type: none"> 1. The disciplinary skills our children will need to know to work scientifically such as asking questions, making predictions, planning and setting up enquiries, observation and measuring, recording, interpreting and evaluating results. 2. The different enquiry types they will use to help practise these disciplinary skills and to learn the substantive knowledge they will need as scientists. Our children need varied opportunities to 	<p>Books and assessment</p> <p>Children complete learning activities, working individually, in pairs or small groups. Children's learning is recorded in their books or in KS2 they may also work on their Google Classroom platform. It may be through written or practical activities such as experiments, classifying through tables or diagrams, short writing, drawing diagrams, explanations. Activities that help them to practise and learn the skills and knowledge they need and make meaningful links.</p> <p>Assessment takes place through</p> <ul style="list-style-type: none"> ✓ informal judgements by staff during lesson in relation to the success criteria ✓ prior knowledge questions at the beginning of the unit and in lessons. ✓ pupil and peer assessments <p>At the end of a lesson or unit, teachers make a summary judgement about the learning of each pupil in relation to</p>

		practise their skills and learn through pattern spotting, classifying and identifying, observations over time, fair testing, research and problem solving.	the success criteria outlined at the beginning of the unit, and record these judgements termly using a short assessment at the end to help inform these.
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I m p a c t	At the end of each year, pupils have developed their questioning and enquiry skills, and have gained a range of disciplinary skills to carry out scientific enquiries and the substantive knowledge to explain what is happening.			
	<p>PUPIL VOICE</p> <p>Children are able to talk enthusiastically about their knowledge of science and discuss their own learning. They enjoy being curious and the 'investigative' nature of science and discovering new things.</p> <p>They have opportunities to share their opinions through pupil voice surveys and feedback to teachers on science lessons.</p>	<p>EVIDENCE IN KNOWLEDGE</p> <p>Pupils can call on their prior learning to propel their understanding of Science. They can verbally explain their learning clearly using key vocabulary.</p>	<p>EVIDENCE IN SKILLS</p> <p>Pupils use acquired vocabulary to interpret and convey their understanding of the subject. They are able to record data in a variety of ways and can prove or disprove a hypothesis in a fair and safe manner.</p>	<p>BREADTH AND DEPTH</p> <p>Teachers plan opportunities for pupils to study across concepts and deepen their conceptual understanding in aspects of particular scientific value. Pupils have the confidence and are inspired to further their knowledge.</p>