



# Science Action Plan

Autumn 2022 – Autumn 2023

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## Our Aims At Whitchurch we aim to...



## Our Values



## Section One: Statement of Intent for Science at Whitchurch

At Whitchurch Primary and Nursery School, we recognise the importance of science in every aspect of daily life and understand that it is vital for children to embrace the topic to enable them to become active and responsible global citizens. As one of the core subjects taught in our school, we give the teaching and learning of science the prominence it deserves.

The scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world and with developing skills associated with science as a process of enquiry. Our approach to investigative learning will develop the natural curiosity and aspirations of the child, a sense of excitement about the universe and encourage respect for living organisms and the physical environment. As the children develop their understanding of mental and physical wellbeing, they will become lifelong learners.

We nurture the children through the National Curriculum providing ample opportunities for the children to explore, develop and achieve. We actively engage in a spiral curriculum where topics are linked to the class themes to provide a creative scheme of work. This is reflected in a balanced programme of study. The national requirements are mapped out on a long term plan. (Ensuring that prior knowledge is secure for each area of science and there is a clear progression which builds on prior experiences).

Primary School, in conjunction with the aims of the National Curriculum, our Science teaching offers opportunities for children:

- to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- to develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- to be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future;
- to develop the essential scientific enquiry skills to deepen their scientific knowledge;
- to use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts;
- to develop a respect for the materials and equipment they handle with regard to their own, and other children's safety;
- to develop an enthusiasm and enjoyment of scientific learning and discovery;
- to encompass outdoor learning to create meaningful experiences within their natural environment;
- to a wider curriculum would provide many opportunities to apply and deepen children's understanding of science;
- to develop confidence and motivation to continue to further cultivate their skills into the next stage of their education and life experiences.

## Section Two: Science Key Priorities

Key Priorities	
<b>To improve the quality of education in science for all groups of children.</b>	To review and evaluate the effectiveness of the SCIENCE curriculum to ensure it is in-line with National Curriculum statutory requirements, as well as aligned with the school's curriculum key drivers
	To audit resources linked to science across the school and ensure that teaching comprises of more investigative work to develop pupils' enthusiasm and excitement linked to SCIENCE
	To embed a teacher assessment framework for SCIENCE to track and monitor pupils' progress and attainment
<b>To develop the leadership of science to ensure all groups of pupils receive a good quality of education.</b>	To review and promote an 'intent statement' that relates to the vision and QoE in science and raise the profile of the subject across the school
	To deliver CPD training to class teachers to develop their subject knowledge and pedagogy within science.
	To use data analysis of teacher assessment framework to inform future planning opportunities, address misconceptions in pupils' learning and accelerate progress
<b>To develop links within the wider curriculum to provide enrichment opportunities for pupils linked to science.</b>	Work collaboratively with curriculum leaders by using curriculum documentation and planning feedback grids to make cross curricular links that enable pupils to make deeper connections within their learning
	Host science-related (STEM) clubs, theme days and events to promote an enthusiasm and passion for science.

## Section Three: Development Planning

<b>Key Priority 1: To improve the quality of education in science for all groups of children.</b>		<b>Lead:</b> Mr L Jeans and Mrs A Shah		<b>RAG</b>
<b>Key Priority: Personal Development, Behaviour &amp; Attitudes</b> <ol style="list-style-type: none"> <li>To review and evaluate the effectiveness of the SCIENCE curriculum to ensure it is in-line with National Curriculum statutory requirements, as well as aligned with the school's curriculum key drivers.</li> <li>To audit resources linked to science across the school and ensure that teaching comprises of more investigative work to develop pupils' enthusiasm and excitement linked to SCIENCE.</li> <li>To embed a teacher assessment framework for SCIENCE to track and monitor pupils' progress and attainment.</li> </ol>				<b>Behind</b> <b>Not achieved</b> <b>Underway</b> <b>Completed</b>
<b>Outcome – What?</b> <i>What are we aiming to achieve?</i>	<b>Actions – How?</b> <i>What will happen to achieve the outcome?</i>	<b>Who/when?</b>	<b>Resources Costs</b> <b>Budget Code</b> <b>CFR</b>	<b>Success Criteria and Evaluation</b> <i>What will we see when we have achieved the outcome?</i>
1. Science SL, SLT, YTLs and CTs have a sound understanding of what is being taught, how it is being taught across the half-term/topic leading to at least GOOD QOE in subject areas for all pupils.  Ensure that children are receiving opportunities for real world experiences through a variety of rich and engaging topics.	Review LTPs/MTPs for all year groups across the school when reviewing planning.  Subject leader (SL) to monitor- <ul style="list-style-type: none"> <li>- Is there coverage from the POS/NC?</li> <li>- Are a range of experiences planned for including LOTC?</li> <li>- Are the skills progressive from previous years?</li> <li>- Is planning differentiated for all groups of children to learn and make good progress?</li> <li>- Are there opportunities for children to receive real life experiences?</li> <li>- To keep updated promote the use of a whole school curriculum map.</li> </ul> Once planning is rigorously checked, feedback is given to YTLs to support with the QoE in science across the whole school.	Ongoing throughout the year – half termly  DHT/SL	Leadership time	All groups of children will make good progress from their start points due to well-planned lessons that provide a range of opportunities and engaging activities that supports all groups of children across the school.  Teachers will know how and who to approach to receive support (where needed) to enhance their skills of planning for the children at Whitchurch and ensure they have clarity around the topics they are teaching.
2. Science to be well resourced in the school. All teachers to have the	Carryout a resources audit for science. All physical resources to be accounted for and listed. All staff to be made aware of what resources the school has available and where they can be located. Any online resources in current use shared.	SL  DHT	Leadership Time	CTs to have the resources they require to create and teach an exciting, dynamic and effective curriculum.

<p>resources they require to deliver the curriculum to a high standard.</p> <p>All staff to be aware of the science resources the school has access to. Lessons are more exciting and memorable.</p>	<p>Staff questionnaire carried out to determine what other resources staff would like to have and require. To also discover what staff use to support them with their planning.</p> <p>Purchase any new physical or online resources that would be deemed useful for the school if they are likely to impact the children's outcomes.</p>	<p>CT</p>	<p>Cost dependent on identified requirements.</p>	<p>All staff to be aware of what resources the school have and where it is located.</p>
<p>3</p> <p>Science SL, SLT, YTLs and CTs will have an assessment framework that can track and monitor pupils' progress and attainment in science and identify areas of strength and areas of development that can be used to refine the education offer at Whitchurch linked to science.</p>	<p>CPD training for class teachers to share a collective understanding of a whole school assessment system for science.</p> <p>Populate planning and feedback form for year groups.</p> <p>Subject leaders to be available to provide 1:1 support for each year group, where required, to ensure all are secure with how to assess and record the data accurately.</p> <p>Analysis of data identifies pupils who are not attaining national expectations in science. Subject Leaders to work across the whole school in sharing good practice on ideas around planning, teaching, assessment and questioning linked to the new curriculum to raise pupil outcomes.</p> <p>Analysis of data identifies pupils who are exceeding in science and can be challenged through school-based projects.</p>	<p>Spring term – DHT</p> <p>On going throughout the school year.</p>	<p>Leadership Time</p> <p>CPD Budget</p>	<p>Teachers will be succinct in using a whole school assessment tool for science relating to the NC objectives that will lead to accurate formative and summative assessments of children's progress and attainment across the whole school.</p>

<b>Key Priority 2: To develop the leadership of science to ensure all groups of pupils receive a good quality of education.</b>				<b>Lead:</b> Mr L Jeans and Mrs A Shah	<b>RAG</b>
<b>Key Priority: Leadership &amp; Management</b>					<b>Behind</b> <b>Not achieved</b> <b>Underway</b> <b>Completed</b>
<ol style="list-style-type: none"> <li>To review and promote an 'intent statement' that relates to the vision and QoE in science and raise the profile of the subject across the school.</li> <li>To deliver CPD training to class teachers to develop their subject knowledge and pedagogy within science.</li> <li>To use data analysis of teacher assessment framework to inform future planning opportunities, address misconceptions in pupils' learning and accelerate progress</li> </ol>					
<b>Outcome – What?</b> <i>What are we aiming to achieve?</i>	<b>Actions – How?</b> <i>What will happen to achieve the outcome?</i>	<b>Who/when?</b>	<b>Resources</b> <b>Costs</b> <b>Budget</b> <b>Code CFR</b>	<b>Success Criteria and Evaluation</b> <i>What will we see when we have achieved the outcome?</i>	
1. Science subject leader, all teachers, SLT and link governor all understand what is being taught, when it is being taught and how it is being taught.	Promote and share the intent statement which needs to be a clear outline of the vision and aspirations of the science subject leader in moving science forward.	Spring 1  DHT SL	Leadership time	<p>School stakeholders understand how the curriculum is designed to build upon skills and knowledge and how, links are made in pupils learning. These links also extend to safeguarding, key drivers and school ethos and vision.</p> <p>Science 'intent statement' is shared across the school/website with all stakeholders.</p> <p>QoE in subjects adheres to these intent statements. This is triangulated across all sources of evidence.</p>	

<p>2. Class teachers have secure subject knowledge of what they are teaching and how they teach science to support pupils' outcomes and ensure at least a good quality of education in the subject.</p>	<p>Science subject leader to deliver inset training to all staff-covering the following:</p> <ul style="list-style-type: none"> <li>- Do teachers understand why we teach science and the importance of it?</li> <li>- Are there opportunities for children to receive real life experiences in science?</li> <li>- Do teachers know what topics they should be covering through the year and do they have adequate knowledge to deliver them?</li> <li>- Are there opportunities for cross curricular links to be made with other subjects?</li> <li>- How science can be taught in an investigative way?</li> </ul>	<p>Spring/summer  DHT  SL</p>	<p>Leadership Time  CPD</p>	<p>This will provide staff with real world experience, as well as develop them as global citizens which they can then in turn cascade down to pupils as part of the science curriculum due to subject specific training that shares good practice, as well as effective strategies for the QoE related to science.</p> <p>Teachers will know how and where to receive support (where needed) to enhance their skills of planning for the children at Whitchurch and ensure they have clarity around the topics they are teaching.</p> <p>QoE for science will improve across the school as we see the implementation of actions from the CPD sessions attended and the impact upon pupil outcomes.</p>
<p>3. Teachers will differentiate lessons with an appropriate and aspirational level of challenge. Science leads will be aware of gaps in children's teaching and understanding.</p>	<p>Science leads to check that science assessment sheets are being completed.</p> <p>Assessment sheets to be analysed to identify the percentage of working towards, working at and greater depth.</p> <p>Data to inform next steps for science leads, year leaders, class teachers and individual children and used to spot trends across the school, inform future curriculum design/planning opportunities, as well as identify gaps/focuses for future CPD training</p>	<p>Spring 1 initially – all year.</p>	<p>Leadership time LJ AS</p>	<p>Teachers will know what the expected outcome for each unit is.</p> <p>Teachers and science leads will be able to identify areas of strength and weakness within the student body within science.</p> <p>Teachers' planning will be informed by data results.</p>



<b>Key Priority 3: To develop links within the wider curriculum to provide enrichment opportunities for pupils linked to Science</b>				<b>Lead:</b> Mr L Jeans and Mrs A Shah	<b>RAG</b>
<b>Key Priority: Personal Development, Behaviour &amp; Attitudes</b>					<b>Behind</b>
1. Work collaboratively with curriculum leaders by using curriculum documentation and planning feedback grids to make cross curricular links that enable pupils to make deeper connections within their learning					<b>Not achieved</b>
2. Host Science (STEM)-related clubs, theme days and events to promote an enthusiasm and passion for Science					<b>Underway</b>
					<b>Completed</b>
<b>Outcome – What?</b> <i>What are we aiming to achieve?</i>	<b>Actions – How?</b> <i>What will happen to achieve the outcome?</i>	<b>Who/when?</b>	<b>Resources</b> <b>Costs</b> <b>Budget</b> <b>Code CFR</b>	<b>Success Criteria and Evaluation</b> <i>What will we see when we have achieved the outcome?</i>	
<p>1. Science subject leader, all teachers, SLT and link governor all understand what is being taught, when it is being taught and how it is being taught.</p> <p>They understand how the curriculum is designed to build upon skills and knowledge and how links are made in pupils learning. These links also extend to safeguarding, key drivers and school ethos and vision.</p>	<p>Look through year group LTPs/MTPs and liaise with year team leaders for more information on how cross-curricular links can be made and complete planning feedback sheets for year groups.</p> <p>Link elements of Science with wider curriculum across the year.</p>	Ongoing – science team.	<p>Leadership time</p> <p>Leadership time</p>	<p>Science is a way of finding out about the real world through methodical investigation, systematic observation, questioning and experimentation.</p> <p>Pupils are able to make connections within their learning through a thematic approach to curriculum design.</p> <p>Pupils can apply knowledge and skills to real-life scenarios and are able to commit learning to their long-term memory</p> <p>Staff are able to design and teach a dynamic curriculum that sets high expectations and provides real life experience</p>	

<p>2. SL and all stakeholders are invested in giving pupils opportunities to develop their talents and interests</p>	<p>Launch Science ‘scrapbook’ to show prior learning, including examples of great work, enabling children to revisit topics and to aid in teacher’s planning.</p> <p><u>Run a science (STEM) club:</u> to provide pupils with fun, informal and hands-on science activities outside of their normal science provision. This could be run after school or during lunch time and it is a good opportunity to allow children to have an input in their science learning by making suggestions for activities and investigations they would like to try. Other related alternatives are eco club, gardening club, innovators club</p> <p><u>SCIENCE AMBASSADORS.</u></p> <ul style="list-style-type: none"> <li>• Mini science clubs</li> <li>• Recording science around the school</li> <li>• Science in school through blogs</li> <li>• Science show/assemblies</li> <li>• Support science lessons</li> <li>• Science achievements throughout the school.</li> </ul> <p><u>Hold parent workshops:</u></p> <ul style="list-style-type: none"> <li>• Inviting parents to take part in a short science workshops</li> <li>• providing a brief overview of the curriculum; demonstrating some simple experiments with everyday items; and introducing them to resources they can access (such as <a href="#">BBC Terrific Scientific</a>)</li> </ul> <p><u>Organise educational visits:</u> science-related visits Support teachers by sharing suggestions of places they can visit in your area or organisations that can deliver workshops at your school</p> <p><u>Invite science visitors into school:</u> invite in a range of people from STEM-related backgrounds to introduce the children to what they do.</p> <p>Schedule when the event will take place. - Provide staff with ideas and resources that can be used for each year group. - Share information about the event with parents and pupils. - Collate photographs of the event to share with parents and governors.</p>	<p>Scrap book – Aut 2</p> <p>Ongoing</p>	<p>Leadership Time</p>	<p>Pupils are exposed to real world experiences that develop them as global citizens</p> <p>Pupils become aware of potential career paths they can undertake linked to Science</p> <p>Engaged, enthused children with a buzz about science, children see science in the wider world and experience learning links to improve their learning making it real. Via: Pupil voice, parent voice, photos, school blog/newsletter</p> <p>Parents will understand what their child is learning</p> <p>Parents and children will be interested in doing science at home with their child</p>
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## Section Four: Monitoring

### Leaders' Monitoring Schedule School Development Plan Monitoring 2022/2023

Priority	Responsible Staff	Monitoring Leader	Monitoring Date
<b>To improve the quality of education in science for all groups of children.</b>	Asmita Shah (SL) Leon Jeans (SL) Sophie Miraftab	Caroline Rowley (HT) Martin TL (DHT)	Termly (Autumn 2, Spring 2 and Summer 2)
<b>To develop the leadership of science To ensure all groups of pupils receive a good quality of education.</b>	Asmita Shah (SL) Leon Jeans (SL) Sophie Miraftab	Caroline Rowley (HT) Martin TL (DHT)	Termly (Autumn 2, Spring 2 and Summer 2)
<b>To develop links within the wider curriculum to provide enrichment opportunities for pupils linked to science.</b>	Asmita Shah (SL) Leon Jeans (SL) Sophie Miraftab	Caroline Rowley (HT) Martin TL (DHT)	Termly (Autumn 2 and Summer 2)