



# Science Curriculum

## Curriculum Intent

At Farnsfield St Michael's, it is our intention to develop in young people a lifelong curiosity and interest in the sciences. When planning for the science curriculum, we intend for all learners to have the opportunity, wherever possible, to learn through varied systematic investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them. As children progress through St Michael's, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Teachers use the National Curriculum to plan engaging and well thought out science units of work that link to our Discover, Create and Explore themes. This way of planning enables the children to link their science learning to the rest of the curriculum. Children steadily build on their scientific knowledge as they move through school starting in the EYFS.

We enhance our classroom-based learning through visits, whole school theme days and resources from outside of school such as the ELS.

## Curriculum Implementation

	EYFS	Year 1 - 6
<p><b>Pedagogical Approach and Strategies</b></p>	<p>Teaching and learning should reflect whole school pedagogy, as well as effective EYFS practice (including continuous and enhanced provision). Most scientific skills in EYFS will fall under the strand of Understanding the World in Development Matters.</p> <p>Children should be aware of and be engaged in learning 'Science' as an important specific subject and area of learning. Key links to Development Matters are recorded via written observations.</p> <p>Each class to use 'Floor Book' format where any photographs with dates and any relevant annotations can be added. This will facilitate monitoring of science activities and should be available for the children to reflect on their learning too.</p> <p>Classes should follow parallel activities to ensure equal</p>	<p>Teaching and learning in Science should follow the whole school model of best practice and include:</p> <p>New learning broken down into small steps, using effective explanation, modelling and guided practice; Models, including worked examples and 'thinking aloud'; Scaffolds for difficult tasks; Effective questioning that allows time for thinking and improving upon given responses – use 'hands down' approach to ensure participation all; Informal and formal assessment opportunities, regularly check for understanding – 'What have you understood?'; Guided practice before independent practice. Allow children to obtain a high success rate (appropriate level of challenge); Regular review of previous learning. Regular use of challenge cards to enhance and stretch children's scientific learning and understanding.</p> <p>Y1 to Y6 to follow established Long-Term Planning and Progression documents with Science/Topic related lessons providing coverage of the key areas of Science Knowledge and Working Scientifically Skills (as outlined in the National Curriculum for Science). Science is a <b>core subject</b>, and as such warrants being taught as a discrete subject. Sometimes, it can be embedded within cross-curricular activities, but should still be identified as its own specific subject. This may be taught in any of the 'Discover', 'Create' and 'Explore' terms.</p> <p>Classes within phases should follow parallel activities and study to ensure equal opportunity and consistency across the Year Group/s. Although, where specific gaps or needs have been identified which diverge, then some allowances should be made – with a view to converging as soon as is possible.</p> <p>Within science lessons, there should be opportunities for children to recap/recall learning and prior knowledge. Any misconceptions identified previously can be addressed.</p> <p>Knowledge organisers should be included in children's science books prior to a new topic. This is to be used throughout the unit of learning to enhance children's understanding and can then be referred back to</p>

	<p>opportunity and consistency across the Year Group.</p>	<p>L.O('s) (WALT) should be included for knowledge <b>and</b> skills, then explained and understanding ensured. The long date and WALT should be underlined and head the page. WALTs should be written in <b>individual Science Books</b>. For KS1 and EYFS, the WALT and date may be printed and stuck into books.</p> <p>Children should be actively encouraged to participate through questions and answers, partner talk and actively engage in <b>Working Scientifically skills</b>. These Working Scientific skills need to be taught explicitly.</p> <p>Learning activities should related directly to the WALT and be learning focused. These may include Working Scientifically skills but should link directly to the progression document objectives. This will support with teacher assessment of topics.</p> <p>Assessment: generally, the teacher will mark, but on occasion an activity may be self-assessed by pupils, marked or peer reviewed, as appropriate. Teacher evaluation will ensure any common misconceptions are identified and addressed during the following lesson, or future planning adapted accordingly.</p> <p>It is good to bear in mind that children's scientific understanding is based on the connections <b>they</b> have made during their learning and <b>their own experiences</b> and may not match 'received' scientific fact. It is our job to create the connections and opportunities to lead them on the path to conventional scientific understanding and challenge or test it when needed.</p> <p>PurpleMash and outdoor learning should be key parts of teaching and learning in Science.</p>
<p><b>Timetabling</b></p>	<p>Well planned out continuous provision allow children to be emersed in scientific enquiry throughout the academic year.</p>	<p>Science should be planned and taught either discretely or in-line with topic work. This will depend on the topic in question.</p> <p>Where links can be made, science will be taught in blocks/individual lessons. Children should be aware that they are learning specific science skills.</p>

<p><b>Science across and outside of the curriculum</b></p>	<ul style="list-style-type: none"> <li>Teachers should make any natural links to other related areas of learning i.e. Topic/Maths/IT/English - Non-fiction</li> <li>Consider planning Science lessons/activities which offer opportunities for outdoor learning.</li> <li>Older year groups should consider including direct use of PurpleMash (Computing) to record or present results or data, design relevant presentations/tables etc.</li> <li>If opportunities arise, establish after school science extra-curricular activities to promote the subject and enthuse interested children.</li> </ul>	
<p><b>Vocabulary</b></p>	<ul style="list-style-type: none"> <li>Science topic-based key vocabulary lists for every year group will be provided. They will be progressive and detail new vocabulary that should be taught each year (words in bold) and the words that need to be pre-assessed and potentially taught/reminded about.</li> <li>Vocabulary should be displayed in the classroom and modelled by staff. Children should use the correct vocabulary in verbal and written responses.</li> <li>Relevant Working Scientifically skills should be identified and included as part of any science display.</li> </ul>	
<p><b>Expectations for recording children's work</b></p>	<p>Photographs in books/'Floor Books'</p>	<ul style="list-style-type: none"> <li>Year 1 – 6 Science Books</li> <li>Children record the long date and WALT (underline with a ruler).</li> <li>The L.O. ('s) WALT is written at the top of the page/ beginning of the day's lesson and underlined with a ruler, or, where printed to be stuck in at the beginning- straight</li> <li>Any relevant Working Scientifically Skills to be apparent <b>in planning</b> and explicitly taught.</li> <li>Any recording/activity sheets are either trimmed to fit, or stuck in - in a sensible, neat and aligned manner.</li> <li>Science diagrams and drawings should be completed in pencil – not pen. Any scientific labelling lines should be drawn straight with a pencil and ruler where possible, with arrows in the correct position.</li> <li>Annotated Photographs may be used for practical activity recording or any SEND adaptations. Preferably with some reflection from the children on their learning.</li> <li>Recording might be in class 'Floor Book' if appropriate.</li> </ul>
<p><b>Expectations for marking</b></p>	<p>Children get constant, immediate feedback verbally in line with marking and feedback policy.</p>	<p>Teachers to at least acknowledge work with tick.  Comments written when appropriate to develop understanding and knowledge i.e encouraging the correct scientific vocabulary. Comments should also promote depth and challenge.  Teachers to mark in green pen.  If written feedback given that requires response, then time must given in the next lesson for children to respond.</p>

		<p>Preferable, feedback to be immediate and acted upon with the lesson.</p> <p>Teachers should mark according to the Feedback and Marking Policy.</p>
<b>Expectations for absent children</b>	Where possible, teachers to ensure children given recap of lessons missed/previous learning.	Where possible, teachers to ensure children given recap of lessons missed/previous learning.
<b>Curriculum adaptations (including children with SEND)</b>	<p>All children, regardless of need, should have relevant adaptations made to ensure that they can access learning in Science. These adaptations may include:</p> <ul style="list-style-type: none"> <li>• the use of picture cues/symbols as necessary,</li> <li>• having targeted group/collaboration/paired work where appropriate,</li> <li>• additional levels of scaffolding/modelling,</li> <li>• different/adapted equipment where required,</li> <li>• level of challenge appropriate to child's age and developmental stage,</li> <li>• adult support if required.</li> </ul>	
<b>Environment</b>	<p>Quality resources for independent access</p> <p>Interactive activities</p> <p>Outside environment with resources and equipment</p> <p>Topic display</p> <p>Key vocabulary on display and on learning intention cards in continuous provision.</p>	<p>Resources should be of good quality and there should be enough to support all pupils that may need to access them.</p> <p>Visible display in classroom with current Topics</p> <p>Vocabulary on display</p> <p>Examples of children's work</p> <p>Where possible, books in classrooms that are related to the topic.</p> <p>Science scrap book to be completed to show science across school to stakeholders.</p>

**EAL provision**

Visual support and/or bilingual dictionaries with images will help EAL children to show their understanding in this area of learning. (Many dictionaries have clearly presented sections/pages which can be easily referred to by both children and teachers).  
This could also be shared with parents to encourage continued learning at home in first language.  
Google Translate to be used via iPad if needed to translate specific scientific vocabulary and terminology.

**Homework**

Homework will not always be necessary.  
Homework/research task may be given in preparation for new topic.  
Homework may be sent out during topic if extra research is required