



## Subject: Science

### Intent

<p style="text-align: center;"><b>A love of learning and the success of every child at the heart of all we do</b></p>
<p style="text-align: center;"><b>The aim of our Curriculum is for all our pupils to leave The Topsham School as citizens of the future, with the skills needed to succeed in every part of their lives.</b></p>
<p>Our science curriculum encourages a culture of curiosity built on a firm foundation of knowledge. Children are encouraged to question, predict, challenge, interpret and explain the world around them.</p> <p>The early years forms the foundation blocks of scientific learning. Children are introduced to and explicitly taught the vocabulary to describe and talk about the natural world through multi-sensory, hands-on exploration of materials and other scientific concepts.</p> <p>Key stages 1 and 2 build upon this with specialist vocabulary which is sequenced and connected. At the Topsham school, children will watch things happen and use their growing knowledge base to make meaning from what they see. Children will learn to challenge or prove their ideas by working scientifically using equipment, using their noticing skills and recording and interpreting their results. The sequencing of the curriculum allows children to carry out practical work successfully and learn from it. They will explore science which is linked to their lives and locality and make links between these experiences and that of the wider world and beyond.</p> <p>At The Topsham School children see themselves as scientists and know how science equips and prepares them for life. They are motivated to know and understand their world and inspired to want to protect and respect it. Children know that science can help to keep them healthy and the role and impact of significant scientists.</p> <p>Children at the Topsham School will know that Science is all around them and will understand the opportunities and careers which are linked to the subject. They understand that science is always developing and changing – that it isn't 'complete' and that it could be them who discovers something new!</p>

### Implementation

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<p><b>High Quality Planning</b></p>
<p><b>Substantive Knowledge and Experiences in science</b></p> <p>A progression of Skills and Knowledge for science has been written for teachers to ensure there is National Curriculum coverage and a progression of these key elements from Foundation Stage, through Key Stage 1 and onto the end of Key Stage 2. We use the <b>PLAN progression documents</b> across the school. We aim to build a spiral curriculum where learning builds on the prior knowledge, skills and experiences of our children; leading to the practising and refining of key skills alongside the development and deepening to key knowledge</p>
<p><b>Disciplinary knowledge and Critical thinking skills in science</b></p> <p>In science we use Bloom's Taxonomy as a planning framework to support these two characteristics of learning. This approach supports consistency of practice, language across the school and high-level questioning that supports assessment for learning. Through the planning and teaching of science, the children will be provided with opportunities to reflect and critically analyse how they think, evaluate their work against agreed success criteria and use their knowledge and skills to</p>

create something unique to them that reflects their depth of understanding. Not only does this way of working inform assessment but enables children to work 'like a scientist'.

**Metacognition: Developing and supporting Positive Attitudes to Learning in science**  
 Our Learning Powers are explicitly planned for in every subject area. The overarching Learning Powers that are threaded through every science lesson and sequence are; Noticing, curiosity and questioning, making links and detecting. Time is planned for children to be able to reflect on how their Learning Powers are supporting them in the learning process and which ones they may need to develop or access to support them to succeed.

**Through this we provide a consistent approach to planning for our curriculum which builds on prior learning, supports children to see connections, challenges and facilitates higher level thinking skills and supports children to understand how they learn and what they need to do themselves to achieve and succeed.**

**High Quality Teaching and Learning in EVERY subject**

Assessment for Learning	Appropriate Pitch: age and stage appropriate for all children	Appropriate Match including high expectations and challenge for all	Subject Knowledge including modelling and teaching subject specific vocabulary and promoting READING	Promotes and develops Metacognition
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- A successful science lesson will:
- Have a clear learning intention which is known by the children
  - Evoke curiosity
  - Build on prior understanding
  - Make links to their experiences
  - Be engaging and interactive
  - Encourage children to see themselves as scientists
  - Use specialist vocabulary
  - Include opportunities to work scientifically

**Through this we enable all stakeholders to have a clear and consistent understanding of how we teach and support children achieve and succeed in our curriculum intent.**

**Shared values focused on high quality outcomes for all of our children.**

<b>T</b>	<b>O</b>	<b>P</b>	<b>S</b>	<b>H</b>	<b>A</b>	<b>M</b>
Trust and Respect	Opportunities for all	Partnerships	Success	Health and Happiness	Aspiration and Attitudes to learning	Motivated

SMSC underpins our school values. These values have been devised and defined by the whole school community and underpin the behaviour choices we make and how we choose to work together in EVERY area of learning in our school.

**Through this, we create a safe, secure learning environment where all stake holders have shared and consistent understanding of our Values and positive behaviours expected within our school.**

**High Quality, Enabling Environment**

Working wall showing progression of sequence or alternative provision that supports children see the learning journey; where they have come from and where they are going	Tiered Vocabulary used as part of display	Learning Powers clearly linked to learning sequence	Children independently access high quality resources that engage and allow interaction
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**Through this we provide an exciting, inclusive learning environment that promotes and makes learning visible to both teachers and children, enables independence and celebrates the learning process**

**Impact:**

Subjects will be monitored in line with the School Improvement Plan. Subject Leaders are responsible for this process supported by the SLT.

<p><b>Monitoring and Supporting High Quality Planning and Timetabling</b></p> <ul style="list-style-type: none"> <li>• Science will be taught every week as either a discrete session or as an integrated part of the overarching topic. Where it is more fitting to the content, science will be taught as part of a 'science day'</li> <li>• Monitoring of termly planning and pupil voice- including scrutinising evidence</li> <li>• Support for development of assessment through staff CPD</li> <li>• End of year teacher conferencing and feedback to edit and improve topic and science planning</li> </ul>
<p><b>Through this we aim for planning to be consistent across the school, at the appropriate pitch for each stage and phase and offer equal opportunities for ALL children to make progress through the year.</b></p>
<p><b>Monitoring and supporting High Quality Teaching and Learning</b></p> <ul style="list-style-type: none"> <li>• Termly book looks/evidence looks alongside pupil voice at the end of a teaching sequence.</li> <li>• Termly drop-ins to observe teaching across a phases</li> <li>• Gathering of wider evidence, including working walls, feedback from trips and written or photographic evidence</li> <li>• Development of an agreed policy for vocabulary, so that it is introduced and displayed in a consistent way throughout the school</li> <li>• Opportunities to develop peer support with other schools</li> <li>• Opportunities for staff to observe good practise, or be supported with team teaching</li> </ul>
<p><b>Through this we aim to ensure teachers have the skills, subject knowledge and confidence to teach all areas of the curriculum and so ensure the progress and success of ALL children in every area of their learning</b></p>
<p><b>Monitoring and Measuring Progress through assessment and published data</b></p> <p>In science we track the coverage, progress and achievement of each class, and plan each sequence of learning to ensure that knowledge and skills in science is built on consistently throughout the year and then year on year. Tracking is informed by formative assessment in each sequence of learning and gaps are identified and acted upon. Assessment is measured using the PLAN assessment statements and further supported by TAPS assessment tasks where needed. Post teach sessions are used to ensure that any identified gaps are acted upon. Children with particular gaps will also receive targeted questioning and support to move them forwards with future learning and to ensure that misconceptions are addressed.</p>
<p><b>Through this, we understand the needs of ALL of our children and use this information to identify next steps and match learning need to ensure children make progress</b></p>
<p><b>School Improvement Priorities</b></p>
<p>All subject leaders create an action plan at the start of the year that is linked to the School Improvement plan and is reviewed and updated throughout the year.</p>
<p><b>Through this we aim to ensure we are working on the right aspects of development to promote and secure the best progress and attainment outcomes for ALL our children.</b></p>