
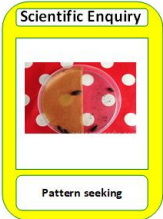
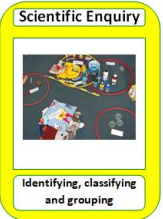
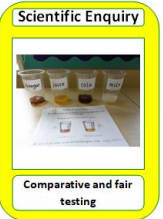



Science

Subject Information

December 2022

<p>Our Vision (Intent)</p>	<p>We believe that our children should have the <b>aspiration</b> and <b>opportunity</b> to 'Live life in all its fullness' John 10:10 and 'Shine like stars in the sky' Philippians 2:15.</p> <p>Our curriculum is based on a consideration of the contextual needs of our cohorts and families, our local context and government requirements, in addition to curriculum research; this has helped shape our vision and intent.</p> <p>Our curriculum is a journey and never a finished article. It is reviewed at least annually to ensure it is still meeting the needs of our children in an ever changing world.</p> <p>Our <b>aspiration</b> for our children has been framed into our 6 golden threads which we feel our children need to be able to do to 'shine like stars' and 'live life in all its fullness'. This ensures the <b>opportunities</b> for these are always a focus within school, and throughout a child's journey in school. We want our children to:</p> <ul style="list-style-type: none"><li>• Become life-long readers</li><li>• Be confident communicators</li><li>• Be spiritually, mentally and physically healthy</li><li>• Be creative</li><li>• Be curious</li><li>• Understand and embrace the wider world</li></ul>
<p><b>Curriculum Design (Intent)</b></p>	<ol style="list-style-type: none"><li>1. We always start with the child and their experiences: what they know and is familiar to them. We then move outwards until we reach the wider world and wider world views.</li><li>2. We always work from knowledge acquisition to application, in carefully sequenced learning journeys which build systematically on previous learning. This ensures both an inclusive and ambitious approach for all our learners.</li><li>3. We work to a four-year plan in KS2 for Science, Geography, History, Art and DT with concepts in these running over a year, rather than a terms over a series of years: This ensures that our curriculum is systematically, cohesively and robustly planned and delivered to our children in a manner in which helps them to immerse themselves in a subject for deeper learning. (This also negates the effect of the impact of changing class structures). It also allows us to make pertinent links between interdisciplinary knowledge across</li></ol>

	<p>our long term plan to allow the children to frame their learning within a larger concept in order to help them to retain this.</p> <p>4. We work to a two-year plan for PSHE, RE, Computing, French and Music as these disciplines contain more age specific knowledge and skills. Computing, French and PSHE are all delivered across the federation in two-year group structures</p> <p><b>So that our children know more, remember more and therefore can do more.</b></p>
<p>Subject specific design</p>	<p>Key principles for our science curriculum:</p> <ul style="list-style-type: none"> <li>• Science is divided into 3 key elements – Biology, Chemistry and Physics.</li> <li>• Each unit of work will teach the essential aspects of knowledge, methods, processes and uses of science.</li> <li>• We aim to develop a sense of excitement, awe and wonder as well as curiosity about the subject.</li> <li>• As the children <b>work scientifically</b>, we will encourage the children to: <ul style="list-style-type: none"> <li>- Ask questions and recognise that they can be answered in different ways</li> <li>- Make observations and take measurements</li> <li>- Engage in practical enquiry to answer questions</li> <li>- Record and present evidence</li> <li>- Answer questions and make conclusions</li> <li>- Evaluate and raise further questions and predictions</li> <li>- Communicate their findings.</li> </ul> </li> </ul> <p>We will be focusing during each unit on different <b>scientific enquiries</b> to help the children work scientifically.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Scientific Enquiry</p>  <p>Observing over time</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Scientific Enquiry</p>  <p>Pattern seeking</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Scientific Enquiry</p>  <p>Identifying, classifying and grouping</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Scientific Enquiry</p>  <p>Comparative and fair testing</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Scientific Enquiry</p>  <p>Research using secondary sources</p> </div> </div>
<p><b>Implementation Key Principles</b></p>	<p>Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;</p> <ul style="list-style-type: none"> <li>• Science will be taught in planned and arranged year-long sequences, to enable the achievement of a greater depth of knowledge. The curriculum has been planned to complement cross-curricular links but is not led by them so that the progression of science knowledge accumulates as per the needs of the discipline.</li> <li>• Teachers plan carefully to involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.</li> </ul>

	<p>Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up.</p> <ul style="list-style-type: none"> <li>● We build upon the knowledge and skill development of the previous years. As the children’s knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.</li> <li>● Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children’s school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.</li> <li>● Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children’s understanding of their surroundings by accessing outdoor learning and workshops with experts.</li> <li>● Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.</li> <li>● Regular events, (Science Week, The Great Science Share, The Great British Bird Watch etc) allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events often involve families and the wider community.</li> </ul> <p><b>For the detailed breakdown of the above please see <a href="#">CIP.pdf</a></b> The nine principles of cognitive science – Daniel Willingham</p>
<p>How/When do we assess our children and their progress and attainment?</p>	<p><b>Unit assessment</b> Pre essential learning assessment. Ongoing AFL Post essential learning assessment at the end of unit (Recorded and reported to SL)</p> <p><b>Annual assessment</b> End of year assessment of the post essential learning assessment (Recorded and reported to SL)</p>
<p>How do we ensure our children have retained this knowledge? When/how do we revisit?</p>	<p><b>Sheep tracking</b> x 1 formal revisit at the start of the next term (no recording needed) Informal/incidental sheep tracking/link making at the start of lessons, lining up, etc. (no recording needed)</p>