| | Policy and Vision<br>Science |
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| **Intent** | At The Deans Primary School, we strive and are currently working to ensure that working scientifically is at the core of our science lessons. We believe that providing a high-quality science education allows for the greater understanding of the world through the specific disciplines of biology, chemistry and physics.<br><br>Science has changed our lives and is vital to our community, country and world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science.<br><br>By continually questioning the experimental design, children can leave The Deans Primary School with a high level of critical and evaluative thinking, which can be transferred to all areas of the curriculum.<br><br>Children are naturally curious and passionate about learning. At The Deans Primary School, we provide a stimulating science curriculum that nurtures this curiosity and allows pupils to ask questions and develop the skills they need to answer those questions.<br><br>From a young age, children are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.<br><br>Our curriculum progressively solidifies core knowledge and understanding. The curriculum focuses on children 'working scientifically in different roles'( to ensure children are aware of the different roles within investigating) and to ensure every Science lesson is as engaging and practical as possible.<br><br>**Our four main science aims:**<br><br>• **To develop scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics.<br>• **To develop understanding of nature,** and to ask and answer scientific questions about the world around them.<br>• **To understand the practical uses and implications of science in the real world**, today and for the future and open their eyes to scientific roles to aspire to.<br>• **To ensure that children have a wide range of scientific vocabulary** to enable them to articulate scientific concepts clearly and precisely.<br><br>We live in a city rich with science facilities and world class establishments that people travel far and wide to visit or work in. At The Deans Primary School our curriculum makes links to key scientists and scientific processes that originated from our city and links them where appropriate to our lessons. |
| **Implementation and Curriculum Themes** | At The Deans Primary School, Science is taught as a core subject through the **White Rose Science scheme**, which supports teachers in delivering a carefully sequenced and progressive curriculum that meets the requirements of the National Curriculum.<br><br>The White Rose Science scheme provides a coherent sequence of learning from year to year, ensuring that pupils progressively develop their scientific knowledge and understanding. Learning builds upon prior knowledge, enabling children to make connections between concepts, revisit important ideas and deepen their understanding as they progress through school. Science is usually taught in half-term units and, where appropriate, meaningful links are made with other areas of our broad and balanced curriculum.<br><br>Teachers use the White Rose Science scheme, alongside their professional judgement and knowledge of their pupils, to plan and deliver high-quality Science lessons. Learning is adapted appropriately to ensure that all children, including those with SEND and those |

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| | who require additional challenges, can access an ambitious Science curriculum and achieve their full potential.<br><br>Alongside developing **substantive scientific knowledge**, children are explicitly taught the disciplinary knowledge and skills required to **work scientifically**. Pupils are given regular opportunities to ask and answer questions, make observations, identify and classify, make predictions, plan and carry out investigations, use scientific equipment, gather and record data, interpret results and draw conclusions. These skills are developed progressively so that pupils become increasingly confident and independent scientists.<br><br>**Practical investigation and hands-on learning** are important elements of our Science curriculum. Children are provided with relevant first-hand experiences in a variety of contexts, allowing them to explore scientific concepts and apply their knowledge. Practical activities and investigations are used purposefully to deepen understanding, develop scientific enquiry skills and encourage pupils to question and explain what they observe.<br><br>**Scientific vocabulary** is explicitly taught throughout each unit. Key vocabulary is introduced, modelled and regularly revisited so that children develop a secure understanding of scientific terminology and can use increasingly precise language when discussing and explaining their learning. Vocabulary from previous learning is continually retrieved and applied, both within Science and, where appropriate, across the wider curriculum.<br><br>Assessment is an integral part of the teaching and learning process. Teachers use a range of formative assessment strategies throughout lessons to check understanding, identify misconceptions and inform subsequent teaching. Opportunities to revisit and retrieve previously taught knowledge enable teachers to assess how securely pupils have remembered key concepts and to provide additional support or challenge where required.<br><br>In addition to the core Science curriculum, classes take part in **Scientists and Inventors** learning. This provides opportunities for children to learn about significant scientists and inventors whose work relates to the scientific concepts they study. Where appropriate, links are made to **local scientists and scientific achievements**, helping pupils recognise Science within their own community and wider world. Careful consideration is given to representing scientists from different genders, cultures and backgrounds so that children encounter a diverse range of scientific role models and recognise that Science is accessible to everyone.<br><br>Appropriate resources are readily available to support high-quality Science teaching. Practical equipment is organised and accessible to staff, alongside books, teacher resources and texts that enhance pupils' scientific knowledge and curiosity.<br><br>Through this approach, children at The Deans Primary School develop not only a secure body of scientific knowledge, but also the curiosity, vocabulary, practical skills and scientific thinking required to **question, investigate and understand the world around them**. |
| <u>Impact</u> | At the Deans, it is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in science termly to ensure progression and ensure our environment is fully meeting the needs of our children. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school.<br><br>The science coordinator gives the Head teacher a regular subject leader report in which they evaluate strengths and weaknesses in science and indicate areas for further improvement. The subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe science teaching. |

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<tr><td></td><td>The Deans thrive in assessment and have created a whole class spreadsheet, in which children's pre learning and post learning unit assessment scores are posted. This gives the class teacher and the subject lead the opportunity to review the results: using visible impact, percentage guidance and teacher supported input, to make informed decisions about where students are working in Science.</td></tr>
<tr><td><u>Cultural Capital and local Opportunities</u></td><td>Local Scientific opportunities at the Deans Primary School include:<ul><li>Links to local High Schools, which allow students to further their 'Working Scientifically' skills, by completing investigations and experiments in laboratories.</li><li>Making use of the Deans Primary Schools extensive grounds, allowing us to discover the range of wildlife that lives in both the grounds and the ponds, as well as complete lessons and forest school sessions outdoors.</li></ul>Trips:<br>Y1- RHS Bridgewater Gardens- (Enchanted Wood Topic) - Plants/ observational drawings of plants.<br>Y4- World of glass and art museum St Helens (Potions)- links to solids/liquids/gases and the potion bottle project.<br>Y6- Gallery Oldham (Natural History of animals) - Darwin's delight/ Observational drawings of animals.</td></tr>
<tr><td><u>Speaking and Listening 2x per year</u></td><td>
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<tr><th>Year</th><th>Speaking and listening opportunity</th></tr>
<tr><td>EYFS</td><td><ul><li>Ask simple questions</li><li>Make simple observations</li></ul></td></tr>
<tr><td>Y1<br>Y2</td><td><ul><li>Ask simple questions and recognising that they can be answered in different ways</li><li>Use observations and ideas to suggest answers to questions</li></ul></td></tr>
<tr><td>Y3<br>Y4</td><td><ul><li>Ask relevant questions and using different types of scientific enquiries to answer them</li><li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li><li>Use results to draw simple conclusions, make predictions for new values, suggest improvements</li></ul></td></tr>
<tr><td>Y5<br>Y6</td><td>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables<br>Use test results to make predictions to set up further comparative and fair tests<br>Use simple models to describe scientific ideas<br>Report and present findings from enquiries, including:<ul><li>conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations</li><li>identifying scientific evidence that has been used to support or refute ideas or arguments.</li></ul></td></tr>
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**P4C Opportunity**

| Year | Philosophy for Children Question | |
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| EYFS | How can we look after our world? | Are gardens just for plants? Can we reuse things? |
| Y1 | Topic: seasons (Aut 1)<br>Q: Which season makes people the happiest | Topic: Enchanted Woodland (Summer 1)<br>Question: Why do we grow things |
| Y2 | Topic: Energy (Aut 2)<br>Question: How can we use less energy? | Topic: Let's go Lego (Spring 2)<br>Question: Let's go Lego |
| Y3 | Topic :Around the World (Spring 1)<br>Question: Are we the reason ice caps are melting? | Topic: Natural Disasters (Spring 1))<br>Question: Should everyone in the community after a natural disaster have occurred? |
| Y4 | Topic: Blue Abyss (Aut 1)<br>Question: How do we save the animals that live in the ocean? | Topic: Bottom, biles and Burps (Spr 1)<br>Questions: Does it matter what we put inside our bodies? |
| Y5 | Topic: Rainforests (Autumn 2)<br>Question: Should we use forest products such as wood and paper? | Topic: Rivers (Summer 2)<br>How do tribes live sustainably but live a completely different life to us? |
| Y6 | Frozen Kingdom (Sp2)<br>Question: Is it right for animals to work for humans? | Topic: Blood Heart (Sum 1)<br>Question: How can we keep our heart healthy? |

**SEN Inclusion**

As a flagship school for inclusion and a Dyslexia friendly school we at The Deans pride ourselves on supporting all pupils to reach their full potential. Science is an extremely developmental subject, allowing a range of academic abilities to shine and show a real interest and flare for the subject.

As teaching practitioners we aim to support and cater for all of the children in each key stage and carefully plan to meet their individual needs in all lessons. We will provide all children with the tools and equipment that they need to be included in each project and run parallel activities for upper key stages to encompass the whole class.

To promote an inclusive environment in Science we will;

- Ensure all resources are accessible to all learners and labelled clearly using images as well as text.
- Ensure a range of specialist aids are available to the children ( updated and clearer equipment, such as measuring jugs with all numbers present).
- Ensure the use of generic aids are available ( jumbo pencils, pencil grips blu tac (to use a temporary fixing when holding a ruler in place.)
- Develop a low arousal area if needed. (equipt with only the tools and equipment that will be needed)
- Takes part in practical investigations, which allow children to showcase their talents in science, rather than just writing information.
- Ensure Working Scientific skills are looked upon as highly as knowledge skills.
- Use subtitles and visual aid to support teacher talk.

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| | • Offer an alternative to written evaluation, ( video, voice recording or progressive mind map.)<br><br>**G&T Challenges/Opportunities**<br>At The Deans we hope to develop and greatly advance the skills of all of our learners. We hope that the early identification of gifted and talented pupils through a continuous assessment process will aid us in doing this.<br><br>We will provide extra curricular opportunities for gifted children to enhance their skills. Pupils will be given the opportunity to become involved in the wider community and through the use of local experts gain a manner of experiences. This will enhance their skills and broaden their experiences. |