Days Lane's Science Curriculum

Subject Intent

- At Days Lane, we seek to develop natural curiosity in children, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.
- The Science curriculum is designed to increase pupils' knowledge and understanding of our world, and develop skills associated with Science as a process of enquiry.
- Topics are informed by the national curriculum and offers children opportunities to:
    - *Develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics;*
    - *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;*
    - *Be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.*
    - *Develop the essential scientific enquiry skills to deepen their scientific knowledge.*
    - *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.*
    - *Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.*
    - *Develop an enthusiasm and enjoyment of scientific learning and discovery.*
- Scientific enquiry skills are embedded in each topic the children study and these topics are revisited and developed throughout their time at school. Topics, such as plants, materials, and animals including humans are taught in Key Stage One and studied again in further detail throughout Key Stage Two. This model allows children to build upon their prior knowledge and increases their enthusiasm for the topics whilst embedding this procedural knowledge into the long-term memory
- Children are encouraged to question the world around them and become independent learners in exploring possible answers for their scientific based questions.
- All children are encouraged to develop and use a range of skills including observations, planning and investigations
- We aim for our children to leave Days Lane with an excitement for exploration and an open mind for learning about the world around them.
- The Science curriculum is designed to provide our children with the subject specific language they need to describe, question and discuss the world, as well as their place in it.

Subject Implementation

- The Early Years Foundation Stage (EYFS) equips pupils with the relevant knowledge and skills to enable them to access the Science curriculum in KS1.
- Our Science curriculum follows an enquiry based approach, providing children with key questions to explore through researching, interpreting evidence and forming their own conclusions.
- Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers.
- Planning is formed and aligned with the national curriculum and aims to build upon children's previous knowledge.
- The key knowledge and skills that children acquire and develop throughout each block have been mapped to ensure progression between year groups throughout the school.
- Review and Recall slides are built into the start of every lesson so that children continually have the opportunity to revisit learning from previous years (long term), revisit what they have learnt within their current academic year (mid-term) and revisit what they have learnt the previous week (short term). This provides teachers with quality assessment opportunities and also helps to embed key knowledge into children's long term memory.
- Show Me What You Know (pre-assessments) are used to check existing knowledge at the beginning of each science topic. In KS1, pre-assessment is carried out as a whole class to check pre-existing knowledge. In KS2, a pre-assessment quiz is administered prior to each topic.
- Cold tasks have been mapped out throughout each topic to assess children's knowledge and skills throughout their learning journeys and hot tasks provide assessment opportunities to track children's progress from their starting point (cold tasks).
- For each new Science lesson, prior knowledge is discussed and re-capped. Links are made to previous learning and cross-curricular (e.g. rocks and soils and Stone Age history), where possible.
- Actions have been created to represent each of the five enquiry skills, and these are used every lesson to highlight the key skills that the children will be developing and applying during the lesson.
- Knowledge Mats are used to identify the key knowledge and vocabulary that children are expected to learn within topics. These are differentiated according to the children's needs and shared with parents to consolidate history learning at home.

- Teachers cater for the varying needs of all learners, differentiating activities where necessary and as appropriate. This also includes providing challenge through the use of science 'challenge cards'.
- Key knowledge is reviewed by the children and checked and consolidated by the teacher.
- Post-assessment quizzes are carried out at the end of each topic for years 1-6 and a gap analysis is performed. Misconceptions are addressed through future 'review and recall slides' at the beginning of lessons.
- Home learning tasks include opportunities to access science practically at home.
- Where possible, meaningful cross-curricular links are made with other subjects e.g. in English where topic texts are often at the centre of children's learning journeys.

Subject Impact

Through the high quality teaching of science taking place, we will see the impact of the curriculum in different ways:

- Children will be highly engaged in Science lessons and display high levels of curiosity and respect for the world around them.
- Children will have developed a secure knowledge of the world and their enquiry skills.
- Children will develop a wider vocabulary of scientific terms.
- They will understand the role that science plays in solving some of the key problems facing the world, such as climate change.
- Children will be able to develop their own questions, plan different types of enquiries to answer those questions and communicate their findings in a variety of ways.
- Outcomes in books will evidence a broad and balanced Science curriculum and demonstrate the children's acquisition of key knowledge.
- Through pupil voice, children will be able to talk about the skills and knowledge they have acquired and express their views and opinions.
- Children will have a clear understanding of how scientists both past and present have contributed to society's understanding of the world around them.
- The school environment will be Science rich through displays, resources, vocabulary etc.
- Assessments and monitoring will show standards in science will be high and will match standards in other subject areas.