Science Curriculum Intent, Implementation and Impact Statement

Intent

At NILA, we recognise the importance of Science and how it plays a pivotal role in many aspects of daily life. Therefore, it is our vision to instil a lifelong love of Science within our pupils. We aim to provide high quality, stimulating and challenging experiences which not only secure and extend children's scientific knowledge, skills and vocabulary; also, inspires curiosity and fascination about the wider world around us. We do this by following the National Curriculum guidance and objectives and aim to embed working scientifically skills throughout the key stage, scaffolding where necessary, before establishing independence for pupils to create their own lines of enquiry as they reach upper key stage 2. Enquiry will be purposeful and aim to excite ALL children to confidently explore the world around them. We are committed to ensuring our Science Curriculum is fully inclusive for every child and we also ensure that every chance is taken to broaden what counts, building their Science Capital and embedding the belief that science is relevant to them, their families and our community.
The development and understanding of high level vocabulary is important to our whole school curriculum and in science we strive to develop a scientifically grounded understanding of scientific facts, ideas and theories.

Our curriculum is designed so that our learners:

- develop scientific knowledge and conceptual understanding through the disciplines of biology, chemistry and physics;
- develop a range of scientific skills within the three main themes of planning, doing and reviewing;
- develop an understanding of different types of scientific enquiry (identification and pattern seeking; observing over time; fair testing; research and exploration)
- become equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future;
- develop the skills needed to find and answer questions
- communicate their scientific information and present it in a systematic, scientific manner;
- 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;
- are encouraged to have natural curiosity and inquisitive minds;
- develop their ability to make links with previous learning.
- develop a great respect for our world and all the living things up on it.
- recognise the importance of Science in our daily lives now and in the future

Implementation

At NILA, we implement a progressive Science curriculum throughout school, ensuring high standards of teaching and learning. Our curriculum provides an in depth coverage of the National Curriculum programmes of study for Science.

How do we deliver our curriculum?

- Science is taught weekly for between 1 ½ to 2 hours as a discrete subject. Knowledge and enquiry skills have been mapped out to ensure there is clear progression from Year 3 to Year 6.
- Teachers plan for their year groups following medium term planning.
- Planning takes in to account key vocabulary, cross curricular links and AFL.
- Pupils are given opportunities to use different skills of scientific enquiry, using a range of scientific equipment.
- We use 'Developing Experts', CLEAPSS, Explorify amongst other resources to support our planning of Science
- To broaden the curriculum, pupils take part in events such as Science Week in the Summer Term (which includes our annual Science Fair), Space Week, Bug Hunt competition, participation in national competitions etc… (all of which help to promote Science Capital.
- We use our outside school grounds where possible: the nature areas to help understand living things and their habitats, walking the local area for sound collection data and utilising the field and links with P.E to investigate pulse rate.
- Relevant educational visits allow purposeful links between knowledge taught in class and the application of skills.
- We support children to embed their knowledge from previous lessons and topics and make connections between areas of Science (and other curriculum areas) in a variety of ways: high quality displays, quizzes, 'last week / last lesson /last topic' style grids, revisiting topics through texts etc...
- Each half-termly topic includes these:

    - Knowledge review of existing ideas and development of possible enquiry questions
    - A sequence of lessons
    - Practical, hands on investigations / activities
    - Variety of appropriate enquiry types and working scientifically skills
    - Assessment tasks
    - Differentiation is facilitated by teachers to ensure that each pupil can access the Science curriculum.

Staff CPD has also been a crucial element in the development of our Science curriculum to ensure staff are equipped with the confidence, knowledge and skills themselves to deliver high quality lessons. Ths is done in staff meeting time or 'ReachOut CPD'.

Impact

The impact and measure of our Science intentions and implementation, is to make sure that children not only acquire skills that equip them to progress from their starting points, and within their everyday lives; also, acquire the age-related knowledge linked to the Science NC. Our aim for science is to increase the skills needed to navigate an ever-changing world of science and technology by immersing our pupils with not only the appropriate scientific enquiry skills, key scientific knowledge and investigative skills; also ensure they develop a wider, richer vocabulary. We aim to create a culture of high scientific aspirations, which will allow our students a platform to develop their scientific learning and careers, and to articulate their understanding of key scientific concepts, enabling them to lead a successful adult life.

Our aim:

- Children enjoy and are enthusiastic about science
- Children are confident to use and explain scientific vocabulary.
- Children can ask questions about their science learning and reflect on their knowledge.
- There is a clear progression of children's work and teachers' expectations.
- Children are becoming increasingly independent in science, and completing pupil lead investigations.
- Children to use a wide variety of skills linked to not only scientific knowledge and understanding, but also scientific enquiry skills to allow children to work collaboratively and practically to experiment, explain and justify their reasoning.
- High aspirations to encourage them through to further study, work and a successful adult life
- Progress demonstrated through outcomes which can be seen in pupils' Science books, pupil voice, photographs, evidence on Seesaw, school website / facebook etc..
- Meet the end of key stage expectations outlines in the National Curriculum

Impact is measured through ongoing teacher assessments by class teachers as well as work scrutiny, learning walks and listening to pupil voice carried out by the Science and Science Ambassadors .