Science

Kindness Respect Resilience Independence Community Bravery

Vision

We want our children to be passionate scientists, enthused by a hands-on, enquiry-based curriculum that nurtures curiosity and questioning. We encourage pupils to explore and discover the world around them; develop their ability to predict and rationally explain ideas; and establish and extend their understanding of the knowledge, processes, methods and uses of science.

Intent

Children begin their formal science learning in EYFS. They are encouraged to follow their own line of enquiry, by participating in child- initiated investigations. They ask their own questions and select tools and equipment to conduct their experiments. During this time, they are supported to develop a broad scientific vocabulary. In Key stage 1 the topics and knowledge/conceptual content in the POS in NC. The four topics in years 1-2. It is taught in planned and arranged topic blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge.
Working scientifically principles are embedded into lessons to foster the children's development of scientific knowledge, conceptual understanding and ability to think and act scientifically.
experiments.

Implementation – How do we achieve this?

At Willow Bank Infant School we teach scientific concepts through the use of first-hand practical experiences, stories, using our school grounds and also through educational visits. Working scientifically principles are embedded into lessons to foster the children's development of scientific knowledge, conceptual understanding and ability to think and act scientifically. New vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics. Plan scientific talk and discussion in class.

Progression and Key concepts

We follow a progressive science curriculum as laid out in New Development Matters 2021 in EYFS, NC Programmes of Study (POS) of Years 1 and 2.
We build upon the learning and skill development of the previous year.

<u>Knowledge and Concepts</u>

Plants, Animals (including humans- Senses and the human body), Everyday Materials their properties and uses, Seasons, living things and their habitats, Animals (including humans- growth, hygiene, nutrition and basic needs)

<u>Working scientifically</u>

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Implementation ctd. – How do we achieve this?

Assessment

We observe children during set independent activities to see how they are using the new vocabulary they have been introduced to, and to see their understanding of what has been taught.
We encourage the children to talk during class discussions, group and paired work.
Pupil voice is collected frequently and comments are added to children's books and our working walls.
We also collect photographic evidence which is recorded in our children's books.

Lowest 20%

Science is pitched so all children can access the learning and relate to the activity. Those pupils behind age-related expectations are supported with pre-teaching and same day or next day support to keep up. Teachers targeted questioning and targeted support in lessons from adults. Work is scaffolded or differentiated to allow pupils to be more independent.

Professional development

Our science lead supports our team to ensure full progression and coverage, as well as high quality lesson activities and assessment opportunities. Our staff attend regular science networking meetings such as:
CPD event 2023
SLA meeting 2023
Online CPD

SEND and Disadvantaged Progress

The curriculum for SEND children is not reduced or changed, however the manner of delivery is adapted. Pre-teaching of key vocabulary is provided so that children can express themselves appropriately, and children are given support according to their physical needs. Achievements are celebrated, taking into consideration the starting point of the child.

Cultural capital, inclusion and diversity

When beginning their primary school journey in the EYFS, many children arrive to school with different and sometimes more limited experiences than others. Therefore, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives. This includes the relevant vocabulary and knowledge required to appreciate and understand the contribution science makes to all aspects of everyday life.

Curriculum links

Science is a STEM subject so there are obvious links to Maths and Technology e.g. charting results. There are also natural links to Literacy eg. writing an explanation of a scientific process.

Impact – How will we know we have achieved?

The majority of the children meet the expectations for their year group.

Children are able to articulate scientific concepts using scientific vocabulary effectively.

Children are confident and curious, they can eagerly talk about their science lessons and discoveries demonstrating a love of science.

The children see themselves as scientists as they ask questions, plan and carry out own enquiries with increasing independence.