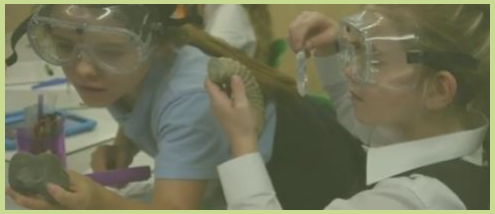
The aims of our science curriculum are:

- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- To 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.
- To be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Intent:

What we expect our children to be able to do/ know at certain points in their primary career.

Intent at Foundation Stage and Key Stage 1	Intent at Lower Key Stage 2	Intent at Upper Key Stage 2
		
• Will have experiences to observe phenomena, looking more closely at the natural and humanly constructed world around them. • With encouragement will become curious and ask questions about what they notice. • With support will develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. • Will begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.	• Will broaden their scientific view of the world around them. • Will explore, talk about, test and develop about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. • With greater independence/peer support, ask their own questions about what they observe and begin to make some decisions about which types of scientific enquiry are likely to be the best ways to answer them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. • Will draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.	• Will develop a deeper understanding of a wide range of scientific ideas. • Will explore and talk about their ideas; ask their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. • Will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. • Begin to recognise that scientific ideas change and develop over time. • With less guidance should select the most appropriate ways to answer science questions using different types of scientific enquiry, including changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.

• Will learn about Science through first-hand practical experiences as well as use of appropriate secondary sources, such as books, photographs and videos. • Will read and spell scientific vocabulary at a level consistent with the increasing word reading and spelling knowledge at Key Stage 1.	• Will read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.	• Will draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. • Will read, spell and pronounce scientific vocabulary correctly.

Implementation

What we do to meet the intent of our curriculum.

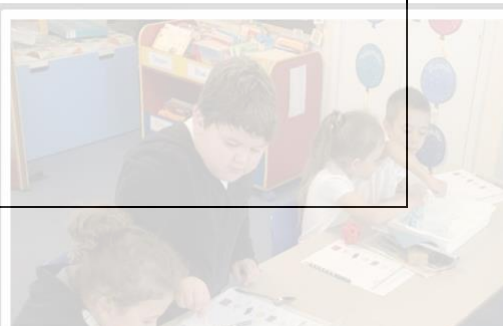
Foundation Stage

Children are taught science through the key areas of learning set out within the EYFS Statutory Framework. Through a broad range of teacher-led, child-initiated and continuous learning opportunities, children will be taught to:

- Use their senses to investigate a range of objects and materials
- Find out about, identify and observe the different features of living things, objects and worldly events
- Look closely at similarities, differences, patterns and change
- Ask questions about why things happen and why things work
- Develop their communication and co-operation skills
- Talk about their findings, sometimes recording them
- Identify and find out about features of the place they live and in the natural world around them

Key Stage 1 and Key Stage 2

- A range of science topics are taught in every year group, linked to objectives from The National Curriculum.
- Science is taught weekly as a stand-alone lesson during an AM session, supported by additional adults.
- Where appropriate, links are made with other topic areas.
- Topics such as Plants or Materials, for example, 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, providing progression in skills and knowledge, and developing mastery.
- Scientific enquiry skills are embedded in each topic and these are revisited and developed throughout their time at school.
- All classes have access to a working scientifically trolley which enables our children to select and use the appropriate tools for different types of enquiry, with support and independently.
- Teachers plan and deliver science lessons. They use high quality, published resources such as ASE P.L.A.N to support the planning process.
- When planning, teachers plan for:
  - problem solving opportunities
  - consolidation of prior learning.
  - opportunities to address and challenge misconceptions
  - high quality questioning.
  - inclusion and enrichment.
  - opportunities to model skills and demonstrate how to use scientific equipment.
  - opportunities to make meaningful links to the science they teach/study to the real world as well as careers in this domain.
- Teachers regularly assess to address gaps in knowledge and skills. This ongoing process allows provision to be planned for when necessary.



- Specialist vocabulary for topics is taught and built up.
- Children have access to the vocabulary they need at the start of topics on word mats. These are stuck in science books and referred to throughout sequences of lessons. Vocabulary is displayed in classrooms too.
- A continuous provision map is used throughout the school, to ensure learning is revisited and embedded across the year groups. Low-stake quizzes and audio/visual aids help to stimulate discussion about prior learning to support retention of ideas.
- Engagement with HSSLP, OGDEN and ENTHUSE to offer enrichment, CPD and networking within the Harlow Science community.
- Extra-curricular opportunities.

Impact:

The impact our implementation has:

Most children will achieve age related expectations in science at the end of their cohort year.

Children will retain knowledge that is pertinent to Science with a real-life context.

Children will be able to question ideas and reflect on knowledge.

Children will work collaboratively and practically to investigate and experiment.

Children will be able to explain the process they have taken and be able to reason scientifically.

Children will develop enthusiasm and enjoyment towards science.

Established links with other agencies will help to improve the delivery of science at Milwards primary school.