Curriculum Guide

Science

National Curriculum Aims

The 2014 National Curriculum for Science aims to ensure that all pupils:

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

Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Intent

At HPS we believe that children should be treated as scientists and as such we aim to stimulate their own creativity and curiosity through use of practical and enquiry-based approaches alongside ensuring that children acquire specific skills and knowledge to help them think scientifically.

The staff at HPS ensure that children are exposed to quality first teaching and engaging learning experiences, where children are immersed in subject specific language and develop the confidence in using scientific vocabulary to articulate concepts clearly.

At HPS it our intent that our children are encouraged to explore confidently, and to ask questions which allow them to develop and deepen their understanding of the world in which we live. They learn to question and discuss science-based issues that may affect their own lives, and the future of the world, and are exposed to a diverse range of important scientists whose discoveries have impacted the way that we live.

Implementation

In Science at HPS each lesson starts with a retrieval activity to consolidate prior learning, and misconceptions are addressed at the point of learning.

Working Scientifically skills are embedded in each topic, so that children revisit and develop these skills throughout their time at school. As outlined in our progressions map, topics such as Animals Including Humans and Materials are revisited across KS1 and KS2. In addition to this, year groups are paired with concepts first taught at a basic level, before being revisited at a more advanced and deeper level.

Throughout their time at HPS children are provided with opportunities to further develop their scientific understanding of the world around them through trips, workshops and talks.

Impact

The impact of our Science Curriculum is that children leave their primary education equipped with all of the skills they will need in the future –both as they move into KS2 and KS3, and as citizens of the world.

If children are keeping up with the curriculum them are deemed to be making good or better progress. Teachers at use formative assessment alongside to assess and track progress in science. At the end of each term, teachers record children's progress against the objectives laid out in our progression document, and make an overall judgement as to whether children are working towards, at, or exceeding expectations.

The impact of science teaching is regularly tracked and monitored by analysing this data, along with the regular monitoring of books and planning, and undertaking of staff and pupil voice.

Knowledge and Skills

Knowledge and skills in science refers to the theories and concepts making up Science alongside the method of posing questions and carrying out scientific enquiries. Children will progressively build this knowledge as they move through the school, and this knowledge should be based on children's existing knowledge of concepts in science, building gradually to ensure that children retain and build on their understanding.

In **Early Years**, science is explored through the 'Understanding the World' Learning Goal, where children are introduced to science indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.

In **Key Stage One**, children should be helped to 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.

In **Key Stage Two**, (we endeavour) children develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

Creativity

Our curriculum for science aims to stimulate children's creativity and curiosity through use of enquiry based learning. Children are encouraged to ask questions and think actively about the ways in which new learning links to prior knowledge.

At HPS curriculum planning supports and encourages natural links between science and other areas of the curriculum including mathematics, art and DT.

Alongside this, our science curriculum plays a key part in our ongoing work towards sustainability and respecting the environment around us

Throughout their learning of science, children are provided with opportunities to express themselves in a variety of ways and children are encouraged to be creative in this. Thus, pupils are enabled to realise their own strengths and gain a feeling of achievement, boosting their confidence.

Assessment

At HPS we understand the importance of assessment to inform the tracking of pupil progress, planning next steps, reporting and involving parents and pupils as part of this. It is an integral part of the Teaching and Learning process.

Teachers make assessments through:

- regular marking of work
- analysing errors and picking up on misconceptions
- questions and answers throughout the lesson
- facilitating and listening to discussions
- making observations
- formative and summative assessment

Children will be assessed at the end of each term against the objectives set out each unit, and an overall judgement will be made as to whether children are working towards, secure or above expectations