

# Curriculum Statement

## Science



*Hooked on Thinking*

Working With and For Local Families



### Intent – Science at Hindhayes

Recent research used to inform practice: : **Bold Beginnings 2017 : Key findings in the most successful schools. Ofsted (2019), Narrowing the Vocabulary Gap – Alex Quiggle 2018, National Curriculum (2014)**

Science is a core subject and therefore provision should be equally as strong and frequent as literacy and maths (Ofsted, 2019)

There is currently an attainment gap in science at every stage: it is apparent at the end of KS1 and gets wider through primary and secondary education with the gap growing particularly between the ages of 5-7. The strongest factor affecting pupils science learning is their literacy skills – particularly ability to understand spoken vocabulary. There is strong evidence to suggest that the ability to reason scientifically – i.e. by having sound “working scientifically skills” – is a strong predictor of success in science. Pupils should therefore have ample opportunity to design and carry out their own experiments and investigations (EEF, 2019). The National curriculum states that “Science has changed our lives and is vital to the world’s future prosperity and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science.”

**Developing skilled scientists at Hindhayes:** We aim to encourage independent thinking through our science teaching. We cover National Curriculum programmes of study and aim to broaden the outlook of children and make them more aware of the world in which they live and themselves in relation to it. We strive to develop their investigative skills and observational skills by enhancing their natural curiosity. Staff are always mindful of the children’s safety and ensure that the appropriate risk assessments are carried out. We also teach the children how to safeguard themselves in their science work. Our aim at Hindhayes is to ensure that children develop a love of science and embed the skills of ‘working scientifically’ to inspire a future generation of Scientists. At Hindhayes we foster a hands-on curiosity for exploration of the world around us. We aim for the children to develop their ideas and ways of working that will enable them to make sense of the world around them through practical investigations, forest school, exploring our locality, visits from outdoor agencies (e.g. Life Bus Education, Explorer Dome workshops) and by planning their own investigations and experiments. We encourage our learners to be inquisitive and excited about the world around us and to treat the living and non-living environment with respect, curiosity and sensitivity.

**Implementation** Science is a core subject in the National Curriculum. We use the National Curriculum for England (2014) as a basis for implementing the statutory requirements of the programme of study for Science in the Foundation Stage we use the Early Years Foundation Stage Curriculum. At Hindhayes School, Science is taught following the aims and content of the KS1 National Curriculum. It is, wherever possible, taught through hands-on, topic based work or in the extensive outdoor school environment. We strive to provide children with first-hand experiences and opportunities to work scientifically in order to develop their skills and knowledge. Children are supported to develop their understanding of basic scientific concepts by using their “Super Science Skills” which include observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding out things in different ways e.g. books, i-pads and computers.

Staff encourage children to use simple scientific language, taken from the Association for Science Education (ASE) exemplification documents, to talk about what they have found out and develop their scientific reasoning skills. Children are encouraged to record their ideas in a number of ways including drawing, writing, photographing and filming wherever appropriate.

We use both our indoor and outdoor environment to support the teaching and learning of science. Many lessons are taught through the use of first-hand practical experiences using our school grounds and forest school area. We also invite visitors into school such as Carymoor Environmental Centre, Coram Life Education, Wild Science, Somerset Wildlife Trust and Explorer Dome into school to inspire the children’s scientific curiosities. KS1 children have visited local nature reserves at Westhay with Somerset Wildlife Trust to spot wildlife and engage with their local environment. Carymoor Environmental Centre have also visited our school to do planting and sustainability workshops with all year groups. British Science Week has been celebrated in the school, with all classes engaging in their own investigations alongside science competitions and visitors to school. Hindhayes have also taken part in the STEM learning competition to design and write about their own scientific inventions – we had local STEM ambassadors visit school to talk about careers in STEM. The local CLP are engaging in a 2 year Science project across infant, junior and secondary schools to support our pupils in their science learning. This will include staff training, moderation of science assessment, transition and shared resources between schools. From Spring 2020, each class will have the use of a “Floorbook” to record science learning – these will be working documents in the classroom will help to demonstrate Science learning, vocabulary and skills in all year groups, with a big focus on spoken vocabulary and reasoning.

### Developing Cultural Capital in the EYFS

Baseline information collected in the EYFS shows that many of the children have poor vocabulary skills and haven’t often been exposed to rich science learning environments. Our EYFS Play Worker is a qualified Forest School teacher and uses the outdoor learning environment to support children’s scientific language development, curiosity and early scientific enquiry. This includes the proposed ‘set up’ of a “nature area” which will encourage children to look out for changes in seasons, animals and plants common to our locality – the children also have access to a pond. Outside visitors are invited into the school to provide “wow moments” for our early years children – this has recently included a “Brilliant Bubbles Workshop” and a “Wild Science” animal workshop. Children have visited Secret World Rescue Centre to learn about different nocturnal animals and their habitats. All EYFS children have Forest School every other week with much of their “Understanding the World” knowledge coming from hands-on activities in our extensive school grounds.

### Impact

Our children will develop a real sense of awe and wonder about the world they live in. They will have a good understanding of key scientific concepts and skills and be able to communicate their ideas using scientific vocabulary.

“I like learning about animals” – Freya (Year 1 pupil) “My best bit was the engineer visit” – Eben (Year 1 pupil) “I liked the exploding bubbles” – Harry (EYFS pupil)

