

Hurst Drive Primary

Science Curriculum Guidance 2022-23



Intent

At Hurst Drive Primary School our science curriculum follows the program of study outlined in the National Curriculum. Through carefully planned and sequenced lessons, we aim to broaden and deepen our pupils' understanding of the world. In science, our children are given the opportunity to expand their scientific knowledge and plan investigations which are designed to develop the children's 'Working Scientifically' skills. By providing as many science-related experiences as possible we are able to build the children's scientific capital. Research has shown that the more science capital a young person has, the more likely they are to continue studying science as lifelong learners.

At Hurst Drive Primary School we aim:

- To develop the children's scientific knowledge so they are able to understand the world around them.
- To provide the children with a variety of opportunities to actively participate in investigations and enquiries that will help them to answer scientific questions.
- To promote and foster the children's natural curiosity so they will want to continue studying science in the future.
- To teach science in a way that encourages the children to think more deeply about science topics that they are learning.

Implementation

Planning

Teachers plan according to the programme of study outlined in the National Curriculum. In addition to this, teachers use the My Mastery scheme of work to provide a consistent whole school approach. Science is taught weekly to ensure the breadth of scientific knowledge is covered in each year group. Guided by the National Curriculum teachers cover physics, biology and chemistry topics while ensuring the working scientifically skills are taught, modelled and practiced.

At Hurst Drive we provide a knowledge-rich curriculum which steadily and incrementally builds knowledge each year. Therefore, teachers are encouraged to have a clear understanding of the children in their class and their prior learning and experience. For this reason teachers identify prior learning, misconceptions and preconceptions as part of the planning process. In order to do this teachers can refer to the Plan for Progression Planning Matrices.

At Hurst Drive we have high expectations mirroring our vision of 'Success for All'. Therefore, teachers are encouraged to plan a 'Big Question' for each topic - this is a higher-order thinking question. For example, as part of a topic about electricity, year 6 might answer the

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following question 'Should countries invest in renewable energies instead of fossil fuels?' By planning higher-order questions teachers are challenging and extending the children's understanding of scientific concept whilst applying it to a real world context.

Teaching and Learning

At Hurst Drive, we use a variety of learning and teaching styles in order to meet the needs of all our pupils. Clear objectives from the National Curriculum are set and teachers differentiate according to the needs of the children to ensure the objective is met and every child is challenged. Teachers are encouraged to use high quality resources such as Explorify, STEM and the BBC to ensure children have opportunities for discussion. This supports Voice21 our whole school oracy strategy.

We create active and engaging lessons by:

- Planning scientific investigations in which children can play an active role
- Planning experiments that directly support the teaching of conceptual scientific knowledge
- Providing opportunities for the children to work scientifically
- Assessing the children's understanding of the topic at the beginning to ensure learning is relevant to the needs of the class
- Using a range of videos, photos and conversation starters

Inclusion

Driven by our vision of 'Success For All', all children receive quality first teaching in science and activities are scaffolded accordingly. Staff have high expectations for the children; we believe that given the tools to succeed, all children can reach their full potential. For this reason, teachers are encouraged to use sentence stems, word banks, visual prompts amongst other resources to ensure all children can access the learning. Particular points to remember include:

- risk points in the lesson, eg for pupils with noise or smell sensitivity
- Recognise that the language of science may be challenging for many pupils
- Build up a chart (using a wallchart or other space) to show the focus of each lesson and how successive lesson topics link together to develop understanding of an area of science work. This could include symbols, images or objects to make it more accessible.
- Use real objects as a starting point for developing the concepts and the language needed to describe, discuss and explain what pupils have observed.

A useful document to refer to when planning for inclusion in primary science:

<https://dera.ioe.ac.uk/13808/1/science.pdf>

Impact

Through the use of assessment information; the monitoring of teaching and learning and feedback from pupils we are able to identify the impact of our curriculum. We evaluate

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progress and attainment for all pupil groups including our SEN pupils, in order to successfully support and challenge to ensure best possible progress and success for all.

Assessment

Assessment is used to inform the teacher of pupils' progress in science. Formative assessment and in lesson assessment for learning is used at Hurst Drive Primary School. This information is of vital importance to our teachers as it will inform the planning process in the long and short term. Assessment information is used as a tool to assess whether are pupils' are achieving their full potential and making consistent progress.

Feedback

Work is recorded in individual books, however the form this takes will depend on the year group, the topic and the scientific knowledge and skill being taught. For this reason, feedback will vary; however all verbal and written feedback will be purposeful and identify areas of strength as well as target areas for development.