**Science Policy**

**Intent**

At Havannah Primary School, we intend to deliver a Science curriculum that is fully inclusive for every child and instils a curiosity and fascination about the natural and man-made world. Our aims are to provide a high quality, broad, balanced and differentiated curriculum that ensures all children acquire the knowledge and skills to make progress in Science and importantly, it should help the children to develop a love of Science.

Science at Havannah is now taught in the three strands of biology, chemistry and physics. Through different types of scientific enquiry, all of the children will have the opportunity to develop skills when working scientifically and become aware of prominent scientists.

**Implementation**

Teachers are provided with time to plan their curriculum. As part of this planning process, teachers need to design a cycle of lessons for each subject, which carefully plans for progression and depth in the different subject areas.

In ensuring high standards of teaching and learning in Science, we implement a curriculum that is progressive throughout the whole school. Science teaching at Havannah Primary School involves adapting and extending the curriculum to match all pupils’ needs and where possible, Science is linked to other subject areas. Science units and objectives are taught based on what is set out in the national curriculum.

We ensure that all children are provided with rich learning experiences that aim to:

* prepare our children for life in an increasingly scientific and technological world today and in the future,
* help our children acquire a growing understanding of the nature, processes and methods of scientific ideas,
* help develop and extend our children’s scientific concept of their world,
* build on our children’s natural curiosity and developing a scientific approach to problems,
* encouraging open-mindedness, self-assessment, perseverance and developing the skills of investigation – including: observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating,
* develop the use of scientific language, recording and techniques,
* develop the use of computing in investigating and recording,
* Make links between Science and other subjects.

Science is taught consistently, once a week, for up to two hours but it can also be discretely taught in many different contexts throughout other areas of the curriculum. All children will receive ‘Quality First Teaching’. Any children with identified SEND may have work additional to and different from their peers in order to access the curriculum.

**Science Curriculum**

The national curriculum defines the content of the school curriculum for Science:

K**ey stage 1**

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They 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. They should 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. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

‘Working scientifically’ is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.

**Lower key stage 2 – years 3 and 4**

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering 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. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

**Upper key stage 2 – years 5 and 6**

The principal focus of science teaching in upper key stage 2 is to enable pupils to 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. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing 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. Pupils should 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.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

**Foundation Stage**

We teach Science in the foundation stage as an integral part of the topic work covered during the year. We relate the Science element of the children’s work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the ELG objectives within the Understanding of the World strand, developing a child’s knowledge and understanding of the world through their own lives and family. Within EYFS, children explore their own timeline and events significant to them and their families. The concept of growth and change provide opportunity to explore themselves and their own development. A wide range of quality texts enable practitioners to explore the sense of self and family, anchoring understanding to children’s own memories.

**Equal Opportunities**

All children are encouraged and supported to develop their full potential in Science. Some children may require extra support in the classroom and opportunities for consolidation and reinforcement. Activities are differentiated to meet the needs of all pupils.

All children are entitled to access to the Science curriculum in line with the schools policy for equal opportunities. Children that show a particular ability and flair for Science, who work more quickly through the levels of the National Curriculum are extended through the use of more challenging problems and investigations. Also, the local high school often provide science workshops for those children who demonstrate a talent for science.

**Assessment, Record keeping and Reporting**

Formative assessment is used to guide the progress of individual pupils in Science. It involves identifying each child’s progress in each area of the Science curriculum, determining what each child has learnt and what therefore should be the next stage in his/her learning. Teachers in the course of their teaching usually carry out formative assessment informally.
Suitable tasks include:

* Small group discussions, usually in the context of a practical task.
* Specific arrangements for particular pupils.
* Individual discussions in which children are encouraged to approve their own work and progress.

Assessment is recorded on DC PRO as part of monitoring the ‘core’ subjects within school. Each of the objectives for each year group has to be graded for each child to give an accurate view of the children’s attainment.

Wherever possible experimental and investigative work should form the basis for the teaching of Science. Children should be given as many opportunities as possible to carry out investigations and experiments.

**Impact**

Our Science Curriculum is high quality, well thought out and is planned to demonstrate progression. We focus on progression of knowledge and skills in the different areas and similar to other subjects, discreet vocabulary progression also form part of the units of work.

We measure children’s progress and the impact of our curriculum through the following methods:

* a reflection on standards achieved against the planned outcomes,
* observation and discussion of lessons,
* scrutiny and discussion about work in books,
* pupil discussions about their learning.

Whilst work produced in lessons is a useful indicator of progression, we recognise that the true impact goes well beyond that.  Our aim is that all children will have a wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills; a richer vocabulary which will enable to articulate their understanding of taught concepts and high aspirations, which will see them through to further study, work and a successful adult life.

**Monitoring and review**

The Science subject leader is responsible for:

* Supporting colleagues in their development of teaching science.
* Monitoring the resources in Science and advising the Head Teacher of any actions needed.
* Taking responsibility for the purchase and organisation of central resources for Science.
* Keeping up to date with developments in Science education and disseminating information to colleagues as appropriate.
* Monitoring the teaching and learning of Science throughout the school.
* Evaluating the strengths and weaknesses in the subject and highlighting areas for further improvement on the school action plan.

Monitoring of the subject will take part termly and will involve:

* Planning and book scrutiny
* Interviews with pupils
* Conversations with staff
* Learning walks
* Checking assessments are up to date