HAZELDENE SCHOOL

SCIENCE POLICY
REVISED SEPTEMBER 2019

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TO BE REVIEWED MAY 2021

HAZELDENE SCHOOL
SCIENCE POLICY

Our Science Subject leader is Mrs Pocock

1.1 Our Curriculum Intention

At Hazeldene, we strive to promote the love of learning science and for children to understand and be curious about the science within their everyday lives. We aim to develop children's understanding of the role of science in society and so enable children to make informed decisions about their own wellbeing and the well-being of society and the environment in the future.
Working scientifically plays a major part in the children's learning experiences and children make links with their own lives. All children to work scientifically during lessons and work collaboratively investigating different concepts and ideas. It is our intention that by the end of each Key Stage, each child will have an understanding of a variety of scientific concepts, be able to confidently discuss them and relate them to the world around them.

Science teaches an understanding of natural of the world through the disciplines of biology, chemistry and physics. It has changed our lives and is vital to the world's future prosperity. It aims to stimulate a child's excitement and curiosity in finding out why things happen. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.
The national curriculum and therefore our aims for science are to:

• develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics.
•develop an understanding of **the nature, processes and methods of science** through scientific enquiries that help children to answer questions about the world around them.
•ensure our children are equipped with the scientific knowledge required to understand **the uses and implications** of science today and for the future.

In addition to this, science teaching at Hazeldene also aims to provide opportunities for our children to develop and continue to use a broad range of cross curriculum skills such as:
•developing their accurate and precise use and understanding of spoken language and technical vocabulary.
•use of phonic and literacy skills to pose, research and answer questions.
•use of mathematical and ICT skills to collect, analyse and present data.
• an understanding of the social and economic implications of science through whole school enrichments days, PSHCE lessons and extra curriculum opportunities.

1.2 Our Science Curriculum Implementation

In order to allow children to reach their full potential, we cover the objectives set out in the Programmes of Study in the National Curriculum and 'Understanding of the World' in the Early Years Foundation Stage. Our Science teaching involves adapting and extending the curriculum to match all pupils needs. In years 1-4, Science is taught weekly as discrete lessons and where possible is linked to the term's topic. In Early Years, Science is integrated as 'Knowledge and Understanding of the World' and children receive daily child initiated learning opportunities.
Lessons are planned to suit the children's interest, current events and maximise cross curriculum links with other subjects such as Maths, English, ICT skills, Art and the Humanities. Lessons link science concepts to everyday life so the children can understand the world around them in a scientific way and develop our children's social skills by working in teams and encourage resilience, determination, perseverance, communication, collaboration, questioning and problem-solving.

Working Scientifically is embedded within our lessons and children are supported to develop the skills needed to ask and answer their own questions by planning and evaluating their own investigations. Enrichment opportunities

in the form of trips, clubs and visitors serve to raise children's science capital and ensure that links are made to the real world.

Teachers use a range of formative assessment techniques to ensure there is clear progression towards our goals in science education and staff receive training to ensure their skills and subject knowledge are as up to date as possible.
Staff ensure judgments are sound by using best practice from within the Science Education Community and by moderating with internal colleagues and when possible teachers from other schools.

The Science Subject Leader monitors the implementation of the curriculum through learning walks, reviews of pupil's work, pupil, parent and staff conferencing, planning reviews. These monitoring processes inform future development and training needs in consultation with the Senior Leadership Team.

1.3 Our Science Curriculum Impact

The impact of our curriculum is that our children acquire:

- a wide range of scientific knowledge and understanding and scientific enquiry/investigative skills.
- A rich vocabulary which enables them to articulate their understanding of scientific concepts.
- The ability to make informed decisions about their own lives and those that affect society and the environment
- High aspirations, which will enable them to maximise their life choices through further study or work.

2 Teaching and learning

2:1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to teach the matters, skills and processes from the Primary National Curriculum. 'Working scientifically' is not taught as a separate strand but is embedded within the content of biology, chemistry and physics. We encourage the children be curious and ask and answer their own scientific questions through a variety of approaches and a range of scientific enquires. Children are supported to develop their understanding by observing changes over time, noticing patterns, identifying, classifying and grouping things, carrying out comparative and fair tests and researching

using secondary sources. Our pupils have the opportunity to develop mathematical skills by collecting, analysing and interpreting data and presenting it as graphs, pictures and photographs. I.C.T. is used to support and enhance their learning, for example, recording observations with photographs, using Google Earth and relevant websites or data loggers.

2:2 At Hazeldene, we recognise that there are widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for children by:
• Using higher order questions to extend and develop children's scientific understanding.
• Grouping children for practical work in a way that allows learning to be differentiated or learners to be supported and extended by their peers.
• Providing differentiated resources.

- Ensuring written methods for recording findings does not discriminate against learners with developing mathematical or literacy skills.
- Considering the prior knowledge of SEND children and ensuring continuity of their learning by delivering content appropriate to their developing knowledge.

3 Science curriculum planning

3:1 The school uses the National Curriculum for science as the basis of its curriculum planning and each year group follows the relevant programme of study.
3:2 We carry out our curriculum planning in science in 2 phases (long term, and short term). The long term plan maps the scientific topics studied in year group each term and is planned in year groups from the National Curriculum in consultation with the science subject leader. This ensures there is complete coverage of the National Curriculum without repetition.
3.3 Science is taught as a timetabled lesson a minimum of once per week in all Year groups. Lessons are no shorter than 1 hour but may often be longer.
3:4 Class teachers are responsible for writing the short term plans used as daily lesson plans. These plans detail the specific learning objectives of each lesson, higher order questions, differentiation and success criteria.
3:6 Learning in science builds upon prior learning and teachers use a range of methods to assess this before the start of a topic such as mind maps, morning challenges, challenges on the learning platform.
3.6 Class teachers are responsible for ensuring that SEND children receive teaching at a level that is matched to their current level of knowledge. This

may involve children receiving Science lessons in a different class or Key Stage.

4 Foundation Stage

4:1 We teach science in the Foundation Stage as an integral part of the topic work covered throughout the year and is assessed as part of 'Knowledge and Understanding'. Children benefit from a broad range of adult led and child initiated opportunities to solve problems, make decisions, experiment, predict, plan and question in a variety of contexts. Children have the opportunity to explore and find out about their environment, the people and places that have significance in their lives.

5 The contribution of science in other curriculum areas

5:1 **The whole curriculum**

Science contributes significantly to the whole curriculum. Scientific knowledge and skills are applied across the curriculum and outside of prescribed science lessons.

5:2 **English**

Science contributes to the teaching and learning of English by actively promoting the skills of reading, writing, speaking and listening. Reading skills are developed through a variety of ways such as researching using secondary sources. Speaking and listening skills are developed through the quality and variety of language they hear and speak. These are key factors in developing their scientific vocabulary and enable our children to articulate scientific concepts clearly and precisely. Teachers also use discussions to probe and remedy misconceptions. Writing skills are developed by recording their findings in a wide variety of ways.

5:3 Mathematics

Science contributes to teaching of mathematics in a number of ways. The children use weights and measures, learn to estimate and predict. They develop the skills of accurate observation and recording of data and learn to use and apply their mathematical skills to interpret their findings.

5:4 I.C.T.

Children use I.C.T. in science lessons to enhance their understanding. They use it to conduct research (internet,) and to record, present and interpret data.

5:5 P.S.H.C.E and citizenship

Science makes a significant contribution to the teaching of P.S.H.C.E and promotes the concept of positive citizenship through a range of cross curriculum links and enrichment opportunities (e.g Earth Day). Lessons serve to raise matters of citizenship and social welfare and provide opportunities for debates and discussions.

5:6 Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions of life, for example the theory of Evolution and how the world may have been created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. Our children are given the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

6 Teaching science to children with special needs

6:1 We teach science to all children, whatever their ability or need. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Our work in science takes into account the targets set in the child's Pupil Passport or Education and Health Care Plan.

7 Assessment and recording

7:1 We assess the children's work in science by making formative assessments during lessons. Teachers use higher order questions, children's written work and individual discussions with pupils to make their judgements Formal assessments are completed at the end of each unit using the school assessment tool 'Target Tracker'

8 Resources

8:1 Resources are kept centrally for Science and ICT. The library contains a good supply of science topic books and computer software to support the children's individual research.

9 Monitoring and review

9:1 The Science co-ordinator monitors the standard of the children's work through book scrutinises . The quality of teaching is monitored through scrutiny of planning and lesson observations. The science co-ordinator also takes a lead in supporting colleagues in the teaching of science, informing them about current developments in the subject and providing a strategic lead Science in the school. He/she develops a yearly action plan and provided progress against these targets in an annual report to the Headteacher and Governors. The science co-ordinator has specifically allocated time for monitoring planning, work and observing teaching and learning in the subject.

Jeanette Pocock
September 2019