Easingwold Primary School

Science Policy

Rationale

We want all children at Easingwold Primary School to be inquisitive throughout their time at our school and beyond. Our Science curriculum fosters a healthy excitement and curiosity about our universe and promotes respect for living and non-living things. Building on children's natural curiosity, they learn to ask scientific questions and through building key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation. They are taught to understand how key knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. We want to prepare our children for life in an increasingly scientific and technological world and for them to begin to appreciate the way in which Science will affect their future on a personal, national and global level.

Aims

At Easingwold Primary School, we aim to ensure that, through effective teaching of Science, children will:

- Develop their knowledge and understanding of Science, by studying concepts, first hand where possible, that are relevant to their everyday life.
- Be motivated to investigate and be curious to ask their own questions.
- Be taught the skills to work scientifically, so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently.
- Be explicitly taught to use common language as well as to read, spell, pronounce and explain technical Science vocabulary precisely.
- Be able to apply Mathematical knowledge to their understanding of Science by seeking answers to questions through collecting, analyzing and presenting data.
- Develop their skills in working co-operatively and be able to communicate scientific ideas to others.
- Be taught how to use equipment safely and accurately.
- Develop an embedded for life, sense of responsibility and respect for living and non-living things in their own environment and in the whole world around them.

Curriculum

Science teaching across school is derived from the objectives contained in the 2014 National Curriculum. This document has been used to create a whole school overview and progression that ensures children are taught the breadth of the Science Curriculum in a way that ensures knowledge builds progressively and that children develop skills systematically. Science is taught in blocks throughout the year, so that children can achieve depth in their learning. The curriculum is mapped out across a 2-year cycle for each year group. This allows for children entering Year A or Year B to be able to access the learning as well as building on previous skills and knowledge taught and allowing for progression. Working scientifically is always be taught through and clearly related to the Science content in the programme of study of the National Curriculum. An opportunity **to** work scientifically is planned for in every Science lesson. To ensure that there is a balance of the 5 types of enquiry being taught, which are **observing over time, pattern seeking, identifying, classifying and grouping, comparative and fair testing and research using secondary sources** each type of enquiry is taught at least once termly. An enquiry may run over one or more than one lesson and include several working scientifically skills. Our Science Curriculum Progression and Working Scientifically Progression documents can be located on the Science page on our website.

Teaching

We believe all children learn best when:

- Learning can be hooked onto previous experiences or existing knowledge and skills.
- They have access to high-quality texts- listening to and interacting with stories about the scientific theme being explored.
- They use the outdoor environment and go on Science trips where possible to gain first-hand experience of the concept being learnt.
- They have access to secondary sources such as photographs.
- Visitors, with relevant scientific expertise can talk about personal experiences and share knowledge and skills.
- They are shown, or use independently, resources from the internet and videos.
- They are able to use non-fiction books for research.
- They are provided with opportunities to work independently or collaboratively, to ask as well as answer scientific questions.

<u>Early Years Foundation Stage</u>

During reception, children are given a range of experiences to increase their knowledge and sense of the world around them. Children do this through visits within their local area, such as parks, libraries and museums and by meeting important members of their community such as police officers, nurses and fire fighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later scientific comprehension.

<u>Key Stage 1</u>

During Key Stage 1, we ensure that there is a clear progression of learning for each topic and opportunity to build and recap. Some units are studied each year in Key Stage 1 for this reason, with a clear progression having being thought through. Throughout Key Stage 1, children will be encouraged to be curious and to ask questions about what they notice. Seasonal changes will be observed each term, so that children will be familiar with how the seasons vary. Children investigate their local area as well as being given the opportunity to go

on educational visits to begin to learn about Science within the wider world. They carry out scientific enquiry inside and outside the classroom.

Lower Key Stage 2

In lower key stage 2 pupils will broaden their scientific view of the world around them. A clear link between Year 3 and 4 objectives has been made and that has determined the order in which the units are being taught in Lower Key Stage 2. Some units will be visited twice to ensure embedment of concepts and adequate time for coverage. They will continue to use the local environment and partake in education visits to promote 1st hand observations. Each term, a Science lesson will be planned where children will visit a habitat within their local environment, to study plants and animals and identify how the habitat changes throughout the year. This will build upon the seasonal knowledge learnt in KS1.

Upper Key Stage 2

In upper key stage 2, pupils will develop a deeper understanding of a wide range of scientific ideas. They will continue to use the local environment and partake in education visits to promote 1st hand observations. They will explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically. They will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will begin to recognise that scientific ideas change and develop over time. They will 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 will form conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Assessment

Teacher's marking always sits within the guidelines of the whole school marking policy and feedback to pupils about their progress is achieved through discussion and recorded marking of their work. Improvements and corrections will then be seen in Science books with a green check our work pen (COW). Wherever possible this is carried out within the lesson, giving instant feedback.

Formative assessment is carried out in all lessons. This continually feeds into the next steps for learning. This is done through questioning and marking work. All lessons start with a 'retrieval' opportunity. This provides children with the chance to retrieve previously taught knowledge and provides an opportunity for teachers to carry out formative assessment and build upon existing knowledge.

Equal Opportunities

All children will be given an equal opportunity to fulfil their potential in this subject.

Signed: Margery Hesketh (Science Lead) **Date:** October 2022 **Review Date:** October 2023