

Eaves Primary School

'Excellence in Everything'



Science Policy

December 2023

Responsible Person	Mrs K Askew
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POLICY FOR THE TEACHING OF SCIENCE

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1. Curriculum statement – Science

Intent

At Eaves, we believe that Science provides the opportunity for children to develop as curious thinkers who are scientifically literate, fascinated by the world around them, ready to face future challenges and opportunities. Our approach is guided by a set of scientific principles which are regularly reviewed by the whole school community to ensure Science teaching at Eaves remains great. Our science capital teaching approach is designed to support teachers in helping students find more meaning and relevance in science and, as a result, engage more with the subject.

Implementation

At Eaves, our children follow a curriculum guided by four principles that contribute to great science in our school:

- **Practical , hands on investigation and enquiry**
- **Excitement, collaboration, fun, inspiration and enthusiasm**
- **Giving children independence to question, explore and make discoveries**
- **Passionate teachers with superior subject knowledge.**

We ensure that our teachers have a solid knowledge and understanding of the science they teach. We also equip them with the pedagogical knowledge of how to teach science well. This is closely monitored so that we know our curriculum is benefitting from expert knowledge; including ASE, National STEM centre, PSTT, PSQM, Welcome Trust, Royal Societies for Chemistry, Physics (The Ogden Trust) and Biology, along with local school networks.

Impact

Science is everywhere in today's world. It is part of our daily lives, from cooking and gardening, to recycling and comprehending the daily weather report, to reading a map and using a computer. Advances in technology and science are transforming our world at an incredible pace, and our children's future will be filled with leaps in technology we can only imagine. Being "science literate" is no longer just an advantage but an absolute necessity in life. We cannot escape from the significance of science in our world. We know that by teaching children how to use the five types of scientific enquiry we are preparing them to find out more about the world and how it works.

2. Teaching and learning

Organisation

Within the academic year, children will study science in units, as outlined in the science curriculum overview. This allows the children to enhance their scientific knowledge and develop their scientific skills through focused weekly learning. This model also promotes the opportunity for children to achieve a greater depth of understanding of each unit. Children use the full range of enquiry types to answer scientific questions about the world around them.

Children independently:

- ask scientific questions;
- plan how to investigate them;
- carry out and evaluate investigations.

The subject leader uses ASE's PLAN Knowledge Matrices to support teachers with planning topics in year groups they are less familiar with. All teachers complete an online CPD course using Reachout CPD prior to commencing a new topic to refresh their subject knowledge. We are an Ogden Trust Partnership school with a commitment to enhancing the teaching and learning of physics.

Curriculum content

Early Years

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.

Key Stage One

The principal focus of science teaching in years 1 and 2 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They are encouraged to be curious and ask questions about what they notice. They are 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 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 is done through the use of first-hand practical experiences, but there should also be some

Key Stage Two

Years 3 and 4

The principal focus of science teaching in year 3 and year 4 is to enable pupils to broaden their scientific view of the world around them. They 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 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 draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Years 5 and 6

The principal focus of science teaching in year 5 and year 6 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They 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 encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They also begin to recognise that scientific ideas change and develop over time. They 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 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.

Differentiation

Children who are assessed as not secure are given additional activities to provide further opportunities to show they are secure. Evidence may be gathered in a different way, for example verbally in a small group context. Children that are secure are offered enrichment activities to broaden their thinking, while being careful not to stray into the content of later years.

Progression

In order to plan our science lessons effectively we consult our PLAN knowledge progression documents. There is a progression document for science knowledge and a second document for working scientifically. These outline what the children have been taught before in previous year groups and shows how that content links to what is taught in the coming year. Having identified the linked content from previous years we plan initial activities to engage that prior learning. We provide examples of previous work to be used as reminders of activities that could be done to remind children of their prior learning. We check tracking data to ensure that children who were not secure when the linked learning was taught are identified. Specific attention can now be given to these children during the initial activity to check that they are now secure.

Making Science relevant

Science in the outdoor learning environment is a prominent feature. We use our woodland area, pond, school grounds and local nature reserves. Wherever possible, science work will be related to the real world and everyday examples will be used. The school community supports and promotes initiatives that encourage all children to think that science is relevant and important to their lives, now and in the future.

Cross-curricular links

Every opportunity is used to link science to all other subjects with special event days and science weeks. Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. Whole school planning links science to other areas of learning, including specific links with other core subjects. Science is part of whole school initiatives.

Enhancements

Children take part in a range of initiatives supported by other organisations to enrich science learning. Children's science learning includes topical science events, visitors to school, visits to Sutton Academy Science Department and science day trips. Year 6 pupils take part in an annual residential trip that embeds science learning. Children regularly carry out science activities with their families.

Health and safety

Practical work is at the heart of science learning, yet there is a popular misconception that many practical activities in science can't be carried out in schools because of the limitations imposed by health and safety legislation. At Eaves we consult guidance from CLEAPSS on how to plan safe and exciting practical work in science, engaging pupils without compromising health and safety standards. Health and safety does not restrict practical science but, in fact, to supports it. An appropriate risk assessment is undertaken for any practical work and all participants follow these instructions.

Learning environment

Resources that are audited in line with development planning for science, are well-organised and accessible. Teachers use and evaluate a range of evidenced based strategies for teaching science, which challenge and support the learning needs of all children. The subject leader develops existing strategies and introduces new ideas for teaching science in response to development needs.

Planning and resources

Children regularly and safely use a wide range of appropriate practical and digital resources, information texts and the outdoor environment. Teachers make links with outside agencies to borrow or source additional equipment where necessary. Resources are audited in line with development planning for science, and are well-organised and accessible.

3. Assessment and monitoring

Our Curriculum overview, progression document, assessment document, knowledge organisers and knowledge matrices provide detail of the key learning, vocabulary and working scientifically skills that children need to acquire. There is regular evaluation of practice and processes for formative, summative and statutory assessment which ensure they reflect the shared understanding of the purposes of assessment in science and current best practice. There is a school wide commitment to continually improving assessment practice in science.

4. Equal Opportunities

At Eaves Primary School we are committed to providing a teaching environment which ensures all children are provided with the same learning opportunities regardless of gender, social class, culture, race, special educational need or disability. Teachers use a range of strategies to ensure inclusion and also to maintain a positive ethos where children demonstrate positive attitudes towards each other.

Support for specific individuals is well considered and planned for, with consideration given to how greater depth and further challenge can be provided for.

5. Inclusion

All pupils are entitled to access the science curriculum at a level appropriate to their needs.

To ensure inclusion, teachers use a range of strategies in line with the school's Special Educational Needs and Disability Policy. Independent tasks, as well as teaching, are well-adapted to ensure full accessibility, as well as to provide appropriate challenge to different groups of learners. The school makes full use of additional adults who are deployed effectively to ensure that identified children are able to make progress in each curriculum area.

Through a carefully planned curriculum, one that includes opportunities for enrichment, we ensure a fully inclusive and engaging science curriculum for all pupils.

6. Role of the subject leader

The subject leader engages with sustained professional development and learning. The subject leader engages with the primary science education community and shares outcomes with others.

The subject leader responsibilities are;

To ensure a high profile of the subject

To ensure a full range of relevant and effective resources are available to enhance and support learning.

To model the teaching of science.

To ensure progression of the key knowledge and skills identified within each unit of work and that these are integral to the programme of study.

To monitor books and ensure that key knowledge is evidenced in outcomes, alongside and as supported by SLT.

To monitor planning and oversee the teaching of history.

To lead further improvement in and development of the subject as informed by effective subject oversight.

To ensure the science curriculum takes account of the school's context, promotes children's pride in the local area and provides access to positive role models from the local area to enhance the science curriculum.

To ensure the science curriculum has a positive effect on all pupils, including those who are disadvantaged or have low attainment.

To ensure that approaches are informed by and in line with current identified good practice and pedagogy.

7. Appendices (please include curriculum overview, assessment statements, vocabulary example, knowledge organiser example)