The Science Curriculum at Tickhill Estfeld Primary School

The Intent, implementation and Impact of our Curriculum – Science

Intent

The 2014 national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- are equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

At Estfeld School we believe that a high-quality Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. The staff at Estfeld ensure that all children are exposed to high-quality teaching and learning experiences, which allow children to explore their outdoor environment, thus developing their scientific enquiry and investigative skills. The children are immersed in scientific vocabulary, which aids their knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

Implementation

Teachers create a positive attitude to Science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in

science. In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive and engaging throughout the whole school.

Planning for Science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at Estfeld School involves adapting and extending the curriculum to match all pupils' needs. In Foundation Stage and Key Stage 1, Science is taught in planned and arranged topic blocks. As children progress into Key Stage 2 Science is taught as discrete units and lessons once a week for up to two hours. Science is also discretely taught in many different contexts throughout all areas of the curriculum. Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. Teachers are also plan appropriate visits and invite visitors into school to enhance our children's learning experience.

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.
- Provide positive role models to encourage Science as an of further study and as a positive career
- Make links between science and other subjects.

Impact

The impact and measure of this is to ensure children not only acquire the appropriate age-related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

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.
- High aspirations, which will see them through to further study, work and a successful adult life.

CURRICULUM

Children will be taught the Programmes of Study for their year group as identified in the National Curriculum 2014.

-CONTENT

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities
- problem solving
- individual, group and whole class discussions and activities
- open and closed tasks
- working with ICT

- TEACHING AND LEARNING

Our school scheme of work is a working document and as such is composed of ongoing plans produced on a weekly basis. This is developed from the National Curriculum 2014 and takes into consideration the needs of our children. Throughout the whole curriculum, opportunities exist to extend and promote science. Teachers seek to practise and apply their basic skills in topic sessions.

Each class teacher is responsible for the science in their class in consultation with and with guidance from the science coordinator.

-ASSESSMENT/MONITORING

Assessment opportunities will be clarified by the teachers in their short-term planning and will be delivered throughout the year at the teacher's discretion.

This will include observation, question and answers and set assessment tasks. Several published sets of assessment tasks are currently used by the staff at all levels. In

2022, HeadStart Science assessment is to be introduced from Y1 to 6 to provide a standardised assessment to use alongside formative assessments. Teachers will use a mixture of formative and summative assessment to make their final judgements.

Results will be recorded by the teacher and along with samples of children's work will be kept every year. Teachers will record children's progress on the science assessment tracker which states whether children are working at the expected standard for science.

Children in EYFS will be assessed against the Early Learning Goals (ELG). Assessment is a continuous process and evidence from observations, discussion and practical tasks will be made to form the end of EYFS judgement. This will be recorded on EazMag.

ENTITLEMENT

In line with the school's policy on equal opportunities and SEN all children will be given access to the scientific programme of study which are wholly appropriate to them.

Tasks are set without any differentiation based on gender or race. Specific disabilities are taken into account at the appropriate time and at the professional discretion of the class teacher.

HEALTH AND SAFETY

Teachers will assess risks and assure adequate supervision for all activities undertaken within scientific sessions. Particular attention will be paid when using equipment. The safe use of equipment will be encouraged at all times. Where possible plastic containers and beakers should be used, but if the use of glassware is unavoidable breakages must be dealt with by a member of staff to avoid injury to a child.

Other staff and Mr. Perkins need to know the location of the glass to ensure thoroughly removed.

Any spillages should be dealt with right away to avoid accidents.

Any animals should be used with care and consideration to their welfare (preferably these should be observed insitu). If they are removed to the classroom, they must be returned to their natural habitat as soon as possible after the activity is complete.

Wherever possible plants, leaves, berries of a poisonous nature should be avoided in the class but even so their dangers should be emphasised.

ROLE OF CO-ORDINATOR

Professional

Planning, preparing and up-dating as necessary:

a. Policy guidelines for the subject
b. A curriculum map across the key stages
c. Outline schemes of work for each year group

Identifying opportunities for assessment.

Monitoring the delivering of the science curriculum across the key stages.

Management

Chair meetings involving science.

Assisting and advising staff in matters relating to science

Attending any courses for own personal development

Liaising with colleagues and arranging CPD where necessary

Resources

Ordering of stock, text books, materials, equipment etc

Care and safe storage of stock and equipment.

Policy Agreed: September 2021

Policy Review Date: September 2022