THAKEHAM PRIMARY SCHOOL

'Small School, Big Opportunities, Great Achievements'

Science Policy

Thakeham Primary School

Date approved by the Standards, Teaching & Learning Committee: 29.3.22

Review Date: March 2025

Signed

Acting Headteacher:

Chair of Governors:

Intent

It is our aim in Science that children are given opportunities to observe, record and draw conclusions about the world around them. We hope to introduce children to the basic elements of experiments and investigations, provide inspiration, nurture curiosity and make links to the real world in line with our Curriculum Drivers 'Inspired Learners' and 'Learning for Life'. There are natural links to our Super Learning Heroes such as 'Curious, Questioning Cleo' and 'Positive, Persevering Perry.' This policy outlines the teaching and learning of Science at Thakeham Primary School. The implementation of the policy is the responsibility of all teaching staff.

Aims

Through our science curriculum we aim to:

- ensure that teachers meet their statutory obligations with regards to the teaching of Science.
- raise Science standards by promoting a high standard of excellence and consistency of approach amongst all staff.
- ensure procedures for planning and assessment enable a broad and balanced curriculum that has continuity and progression and addresses equal opportunities.
- foster a positive attitude to Science as an interesting and exciting part of the curriculum.
- encourage safe practice in all areas of Science.

Through teaching Science children are given opportunities to:

- develop their knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences.
- develop their ability to communicate their ideas using appropriate scientific vocabulary.
- acquire a curious and questioning mind.
- develop skills of observation and investigation.
- collect, retrieve, present and communicate their findings to others in a variety of ways.

In order to achieve these aims we will:

- Provide a stimulating environment to promote effective learning in science.
- Ensure continuity and progression in science by liaising with colleagues
- Give children lots of opportunities to develop and apply investigative skills.
- Provide quality resources for the children to be taught effectively.
- Draw upon external visitors who can enhance the teaching and learning opportunities.
- Provide a safe environment in which to explore Science.

Implementation

We use a variety of teaching and learning styles in Science lessons such as research, investigation, exploration, collaborative work and individual work. We share the learning objective, which is skills based, with the children. This may be introduced in a variety of ways.

Our main aim is to develop children's scientific skills, knowledge and understanding through challenging, motivating activities that extend the pupils learning. This can be through whole class teaching, small group work, paired work, or independent learning. Science displays in each classroom are designed to encourage the children to develop enquiry skills.

Teachers plan opportunities for scientific enquiry in each lesson. This will cover one or more areas of investigation:

- Observing changes over time
- Comparative and fair testing
- Researching using secondary resources
- Pattern seeking
- Identifying and classifying.

Children are made aware of the type of investigation they are working on.

Early Years Foundation Stage

During the Early Years Foundation Stage, we teach science as an integral part of the topic work covered during the year. It is delivered through a hands on and practical approach, which makes links with topics and the Characteristics of Effective Learning. We relate the scientific aspects of the children's work to the objectives set out in the Statutory Early Years Framework. Science makes a significant contribution to one of the 7 areas of learning known as Understanding of the World but is also covered in Personal, Social and Emotional development and Maths. At the end of the Foundation Stage children's level of development is assessed against the Early Learning Goals as 'emerging' or expected'. By the end of the Foundation Stage children are expected to know about the similarities and differences in relation to objects, materials and living things. They can make observations of animals and plants, explain why some things occur and talk about changes. They are also aware of their own personal hygiene and how to look after their bodies.

KS1 and KS2

We teach the National Curriculum for Science. The long term plan identifies the Science topics to be taught each term to each year group across a 2 year cycle. The medium term plans identify the science objectives for the unit of work for that term. Science skills are taught continually and are identified in medium term plans. The medium term planning outlines weekly opportunities for science lessons throughout the year. This is sometimes blocked over a shorter number of weeks if necessary for the topic.

The planning is monitored by the Science Curriculum leader to ensure curriculum coverage and effective teaching and learning with an emphasis on practical exploration and investigation.

Teaching and Learning

At Thakeham Primary School we use a variety of teaching and learning styles in science lessons. Children may be taught in whole-class or groups depending on their age and the learning activity. We believe children learn best when they:

- can ask questions and follow a line of enquiry
- have access to, and are able to handle equipment
- have access to secondary sources such as books, photographs and artwork.
- have visitors lead of areas of expertise
- undertake experiments to support lines of enquiry
- are shown, or use independently, resources from the internet and video clips

- are able to use non-fiction books for research
- are provided with opportunities to work independently or collaboratively, to ask as well as answer scientific enquiries

Differentiation

We differentiate through:

- Dialogue.
- Giving extra time to some groups.
- Setting up one task that has a variety of levels associated with it.
- Asking different level questions to match ability.
- Giving different tasks to different groups.
- Varying the level of adult support given to groups.

Cross Curricular Links

At Thakeham Primary School, children have the opportunity to develop their writing and maths skills in a variety of challenging and stimulating activities.

Children can develop core life skills and their values; resilience and appreciation through scientific activities. Children use their key skills such as collaboration, perseverance and their natural curiosity to be successful scientists and develop understanding of scientific processes. There are strong links to our Super Learning Heroes and Curriculum Drivers. Wherever possible we link our Science with other curriculum areas or some of our main topics are indeed Science based.

Use of Computing

We aim to use Computing wherever possible in Science. Children are given the opportunity to practise Science skills and enhance their presentation using carefully-chosen software.

At both key stages children have the opportunity to:

- Locate and research information using the internet
- Record findings using text, data and tables
- Log changes to the environment over time using sensing equipment and data loggers
- Use digital cameras, tape recorders and microscopes
- Explore a variety of activities and resources using the IWB (Interactive Whiteboard).

Relationship and Sex Education

Elements of Sex Education form part of the Science National Curriculum and also form part of our PSHE long term plans and our JIGSAW work. See our PSHE Policy and plans for further details.

Assessment, Recording and Reporting

Children's outcomes are assessed against the 2014 National Curriculum learning objectives and linked to age related expectations for each year group, following our school Feedback and Assessment Policy. SIMS is used to track pupil progress in Science on a regular basis and termly judgements ('emerging', 'expected' or exceeding) are made against relevant National Curriculum objectives. These are made at half-way points each term and at the end

of the academic year. School Analytics is used to calculate individual, cohort and group progress across each term to help identify those who are on track and those who may need further support/enrichment. Outcomes are reported to parents as outlined in our Assessment and Feedback Policy. We use a range of strategies to assess progress and attainment including:

- Talking to the pupils and asking questions.
- Discussing the work with the pupil
- Looking at the work and marking against the learning objective.
- Observing the pupils carrying out practical tasks.
- Pupils' self-evaluation of their own work.
- Summative assessments for example at the end of topics

Statutory Assessment

- EYFS: Children are assessed in the early learning goal Understanding of the World. Children's outcomes are recorded as 'Emerging' (1) or (Expected' (2). Whether a child has achieved a 'Good Level of Development' is also measured and reported.
- In year 2, teachers must assess children's knowledge, skills and understanding in Science according to the Interim Framework.
- In year 6, samples of children are chosen nationally to take end of KS2 Science tests, on a biennial basis. The tests consist of 3 papers. The results are reported nationally but individual pupils and school are not disclosed and test papers are not returned to schools. The tests are administered by NFER (National Foundation for Educational Research) administrators. Teachers must assess pupils in Science according to the Interim Framework.
- In accordance with statutory requirements an annual report is sent to parents towards the end of the summer term. This report covers progress and achievements in Science.

Feedback

This will be in line with our Feedback and Assessment Policy.

Equality

We are committed to providing equal opportunities for everyone. We value the diversity of individuals within the school and beyond. Learning to live and work together, and respect each other is expected throughout the school in line with our Equalities policy and Staff Code of Conduct.

Inclusion

Children are given access to Science irrespective of ability. Teachers are responsible for the learning of all children in the class. This may involve formulating individual learning programmes for any children with particular needs, providing differentiated learning opportunities including challenge for Most Able Pupils. See our SEND and Most Able Pupils Policy.

Activities in science have characteristics which help pupils to achieve success.

• They emphasise first-hand experience;

• Knowledge and skills can be developed in small steps through practical activities;

• Science investigations can capture the imagination and so encourage participation and enthusiasm.

The Role of the Curriculum Leader

Key aspects of the History Leader's role include:

- monitoring of standards in science and the use of this to inform the science SSDP
- provision of quality leadership and management of their subject to secure high quality teaching and learning
- playing a key role in motivating, supporting and modelling good practice for all staff
- taking a lead in policy development and review
- being proactive in seeking and attending professional development opportunities
- reporting to the Headteacher and Governing Body on science related issues.
- planning and organising the allocation and purchase of resources in accordance with available budget.

Monitoring
Monitoring and evaluation is carried out on a number of levels e.g. Class teacher, Curriculum Leader, Headteacher, Governors, Advisors and Ofsted/HMI all with the central aim of enhancing teaching and learning.

Monitoring may be through a range of methods including,

- assessment of pupils' work
- scrutiny of planning
- lesson observation
- Pupil Conferencing
- Staff discussion and feedback

Resources

Central resources in Science are the responsibility of the Science Curriculum Leader who has a budget available.

Science equipment is audited annually. Consumables are replaced and discussions with staff and the focus of the School Strategic Development Plan determine if there are any other pieces of equipment required in order to enhance the teaching and learning of Science.

Children are encouraged to value and take care of all equipment. The library houses a range of resource books. Books, which are pertinent to a particular year group, can be found in teachers' classrooms.

Health and Safety

Any risks associated with a scientific activity should be identified and minimised through careful planning and where applicable risk assessments. Teachers refer to 'The Association of Science Education: Be Safe' handbook to identify risks before undertaking a new experiment or activity. All risk assessments are stored electronically on Staff Common.