West Earlham Infant and Nursery School
Science Policy

1. **Vision**

a. Science at West Earlham Infant and Nursery School aims to build upon children's natural fascination with the world in which they live, and excite children's curiosity to find out more about the phenomena occurring around them. We understand the importance of intrigue and interest in promoting a love for the natural world, and we use this to foster a mutual respect and care for the environment and the responsibility that we all have to care for and look after our world.

Our children's fascination is developed through first hand exploration which fosters curiosity, care, respect, critical reflection, co-operation, problem solving, observation, independent learning, perseverance and open mindedness. We aim to teach our children to think and act as young scientists; carrying out their own experiments, inferring their own conclusions and understanding the relevance of their discoveries to the world in which they live. We believe that Science means exploring, discovering and investigating the world around us and we are committed to providing a stimulating, engaging and challenging learning environment. Our children are supported to develop a sense of awe, wonder and respect for the world around them, whilst using scientific vocabulary and skills to strengthen this understanding.

Across the whole school from Nursery to Year 2, children are encouraged to develop and use a range of scientific skills including: questioning, researching and observing for ourselves.

These skills are fostered and celebrated in a variety of ways, this could be through, although not limited to: explicit adult-directed teaching; daily routines; child-led continuous provision; reviewing and revisiting learning throughout the school year; consolidation and extension of learning in-the-moment.

2. **Aims**

a. Science at West Earlham Infant and Nursery School aims to:
    1. Foster children's awe, wonder and natural curiosity about the world they live in through active engagement in learning experiences.
    2. Develop children's intrigue and interest for the world around them by promoting a love of the natural world.
    3. Promote a mutual, shared responsibility for caring for and respecting the natural world and all the knowledge that can be derived from the natural world including wildlife; wild plants and trees.
    4. Provide opportunities for children to develop knowledge and understanding of key scientific ideas, and enable children strengthen these ideas in meaningful and contextualised ways e.g. during daily/weekly routines; in the moment planning; child-led continuous provision; adult-led teaching and adult-led or adult-initiated activities etc.
    5. Develop children's scientific enquiry skills in questioning, predicting, planning, observing, measuring, fair testing, recording, interpreting and working systematically through direct experience.

6. Provide children with the ability to make informed decisions based on evidence and their own experiences and be able to apply scientific knowledge to new situations and experiences.
7. Teach children how to communicate their ideas effectively, through strengthening their knowledge of key vocabulary as well as their communication and language skills.
8. Demonstrate interest and enthusiasm for science and foster children's confidence to participate in exploratory and investigative work.
9. Develop literacy skills in discussing, analysing, evaluating and recording work. Develop maths skills to communicate scientific ideas through diagrams and charts and ICT to extract scientific information.
10. Develop positive values and attitudes in order to communicate with others, listen to ideas and treat others with respect.
11. Develop an awareness, compassion, sensitivity and respect for the living and non-living environment through regular formal and informal access to the natural environment.
12. Develop a responsibility for their own health and safety and that of others when undertaking scientific activities.
13. Develop children's skills and knowledge in order to help them to contribute to sustainability and climate change in their lives and future jobs

3. **Objectives**

a. In order to achieve our aims we:
   1. Teach science in a positive, interesting, interactive and engaging way for all children through in-the-moment planning; high-quality planned activities; and contextualised teaching and learning that is relevant to the time of year or season.
   2. Explicitly teach children key scientific concepts and theories alongside explicit teaching of the different ways in which we can work and think scientifically through the multitude of types of scientific enquiry.
   3. Ensure our curriculum shows clear progression from Nursery to the end of Key Stage One. We ensure that our children's understanding of key concepts and scientific knowledge is sequenced in a way that ensures that it is built upon throughout their time in our setting, enabling them to assimilate knowledge of key concepts and begin to understand how many concepts are related and therefore interact and impact upon one another.
   4. Provide regular opportunities for children to plan, predict, hypothesise, design and carry out investigations before encouraging children to make interpretations and inferences from their results.
   5. Encourage children to communicate their findings in multiple ways including: talking; peer to peer discussions; adult to peer discussions; drawing; creating diagrams and/or graphs; making models and writing.
   6. Use practical, interactive and hands on approach wherever possible using everyday materials and experiences.
   7. Supplement first-hand scientific experiences with contextualised books, charts, pictures and web-based materials to strengthen children's understanding of key concepts and knowledge.

8. Ensure continuity and progression through adherence to the key objectives in and Development Matters guidelines and Early Learning Goals outlined for Nursery, Reception and the National Curriculum for Key Stage 1.
9. Provide opportunities for children to utilise their skills in a cross curricular manner in order to apply their skills from other areas of the curriculum e.g. literacy, numeracy, I.C.T., design and technology to enhance science
10. Acknowledge that Science and the natural world is all around us and is constantly changing, adapting and evolving. As a result of this, we encourage children to draw upon these experiences daily by making observations; comparisons; questioning; comparing and drawing understanding from both naturally arising occurrences as well as adult-initiated activities designed to prompt children's curiosity.
11. Through our science curriculum, we actively embed sustainability, biodiversity, and an understanding of climate change to inspire pupils to become positive agents of change. We involve children in climate action learning when appropriate in order to help them to build practical knowledge while fostering a strong sense of agency which we feel is particularly important in easing climate-related anxieties. Our approach aims to create pride in their role within the school community and encourages them to take their learning beyond the classroom by sharing their enthusiasm and understanding with family, carers, and the wider community. We also strengthen this learning by engaging with local scientific professionals, helping pupils see the real-world relevance of their studies and motivating them to contribute to a more sustainable future.

Teaching and Learning

4. **Organisation of Science in School**

a. The aims and objectives for Science reflect the requirements of the National Curriculum in England: Science Programme of Study 2015 for Key Stage 1 children and the Statutory Framework for the Early Years Foundation Stage for the Reception Year. We utilise the Science PLAN document, written by ASE as it is incredibly detailed and written by Science specialists. We refer to these documents to inform our long-term planning and to plan differentiated learning objectives to be covered in each year group which are carefully sequenced to ensure continuity and progression. Weekly planning by each year group provides appropriate teaching activities and learning outcomes.
b. Science is taught regularly so that children are able to sustain their progression throughout the Early Years Foundation Stage and Key Stage 1. Class teachers plan lessons and activities that support children's understanding and development of key concepts as well as how to work scientifically in order to draw understandings and conclusions from their findings.
c. Science week occurs yearly and the activities are planned by the science subject leader in order to inspire children's natural curiosity and intrigue towards science. This is strengthened further by termly Science Cafes to ensure the appropriate age related skills of 'Working Scientifically' are taught and supported and understood by parents and carers. These are not seen as stand alone events but instead used as tools to spark interest and excitement that can be further built upon throughout subsequent science lessons and enquiries. This ensures that children are prepared for scientific investigation, scientific enquiry and shows continuity and progression of essential enquiry skills.

5. **Early Years Foundation Stage**

a. In the Early Years Foundation Stage children follow the objectives from the Statutory Framework for the Early Years Foundation Stage. Our teaching from Nursery to Reception is underpinned by the Characteristics of Effective Learning: Playing and Exploring (engagement); Active learning (motivation); Creating and Thinking Critically (thinking). These characteristics enable children to think scientifically; approach their learning in a child-centred, curious and explorative manner and enable children the opportunities to make links between their experiences as they explore.

b. Our Reception children follow objectives from the Statutory Framework for the Early Years Foundation Stage. The Early Learning Goals (ELGs) from the 'The Natural World' strand has considerable scientific content although teaching encompasses a variety of ELGs including: 'Self-Regulation', 'Managing Self', 'Speaking' and 'Creating with Materials'. The children participate in activities based on first hand experiences that encourage exploration, observation, problem solving, prediction, critical thinking, decision making and discussion and are provided with an enabling environment which offers a wide range of activities both indoors and outdoors that stimulate children's interest and curiosity. The skills acquired in the Early Years Foundation Stage are further developed and refined in Key Stage 1.

6. **Year 1**

a. Science is organised into five different areas of study. These are:
    1. Working scientifically
    2. Plants
    3. Animals, including humans
    4. Everyday materials
    5. Seasonal changes

7. **Year 2**

a. Science is organised into five different areas of study . These are:
    1. Working scientifically
    2. Living things and their habitats
    3. Plants
    4. Animals, including humans
    5. Uses of everyday materials

b. The children will attain a broad and balanced range of scientific activities that encompass the afore-mentioned areas of study and attainment objectives.

c. Science will be planned in and taught by the class teachers, this will occur through a variety of adult-led activities; adult-initiated activities and child-led activities. The science leader will be responsible for monitoring continuity and progression.

8. **The Role of the Teacher**

a. It is the responsibility of the classroom teacher to select the most appropriate approach to achieving the learning objectives in the lesson. Learning in Science at Early Years Foundation Stage and Key Stage 1 requires hands-on, practical experiences in order for learning to be contextualised and meaningful. However, there are opportunities for

other types of learning to be provided to suit the variety of learning needs within our school. In order for all children to be extended across each area of the Science curriculum and to reach their full potential, our teaching at all levels will include opportunities for:

1. Observation
2. First-hand experience
3. Investigation and experimental work
4. Talking and communicating (child/child and child/teacher) - questioning /commenting/explaining/describing/wondering/evaluating/hypothesising etc.
5. Sustained shared thinking between teacher and child
6. Teacher explanation and clarification
7. The commitment to memory and recall of a range of scientific facts
8. A plethora of reading materials to enhance and provide clarification and understanding of key concepts and learning experiences e.g. books (fiction and nonfiction); charts/diagrams; web based materials
9. The use of ICT to record; research further; explore and gain understanding
10. Consolidation and practise of basic skills and routines
11. Recording using a variety of methods, including, written work, pictures, diagrams, tables, labelling and photographs
12. Class work, group work and individual work
13. Adult-directed learning; adult-initiated learning; child-led independent learning based on natural intrigue and wonder and an awareness of the natural world and our responsibility to care for it and sustain it.

9. **Health and Safety**

a. Children should always be involved in the hazards and safety procedures within science lessons. Where appropriate reminders will be given to children about potential hazards and care of the equipment they are using.
b. Any trips will be planned with due regard to the school policy on taking children on outings, i.e. trips involving farms etc.

Recording, assessment and reporting

10. **Children's Recording:**

a. Although science teaching at West Earlham Infant and Nursery School is chiefly activity-based, there are occasions when it is necessary and desirable to make a record of what has been seen, done or discovered.
b. Recording in this instance may take the form of:
    1. data handling,
    2. helping to plan an activity,
    3. comparing data and examining patterns,
    4. assessing data, sorting it and drawing conclusions,
    5. challenging pre-concepts,
    6. making further predictions from outcomes,
    7. observation skills,
    8. helping to assess/ evaluate what has gone on.

9. class science learning journeys.

c. We encourage children to record in as many varied ways as possible. Many of the ways are cross- curricula when English, Mathematical, I.C.T., Design & Technology and Artistic skills may be developed at the same time. For example: pictorial, graphical, photographic, audio, video, collage, model making, data base, word processing, dramatisation or orally.

11. **Assessment:**

a. Assessment for learning is continuous throughout the planning, teaching and learning cycle. However, children are more formally assessed every term in KS1 using a variety of methods:-
   1. Observing children at work: individually; in pairs; in a group and in classes.
   2. Questioning, talking and listening to children
   3. Consideration of work/materials/investigations produced by children alongside discussions and interactions with children about their work and their understanding.

b. During the Early Years Foundation Stage ongoing assessment is taking place as part of the Foundation Stage profile for each child, via observations and dialogue with the children. Assessment is linked to the Early Learning Goals 'The Natural World' and observations are assessed and recorded on Tapestry and Insight.

c. Each class teacher continually assesses performance in Key Stage 1 in accordance with the National Curriculum. A formative assessment of children's current knowledge and ideas is a common starting point for each new science topic. Children will often be assessed through teacher observation and verbal communication, and through written work. Assessments are made by each individual teacher against the objectives identified and the criteria for each relevant level. Statements for the appropriate levels in year one and two are stated on each lesson plan. Each area of science is supported and assessed by the children's understanding of substantive knowledge and disciplinary knowledge. The science coordinator is always available to offer advice if requested.

12. **Reporting:**

a. All parents of Reception, Year One and Year Two children receive an annual written report on which there is a summary of their child's effort and progress in science over the year. At the end of Key Stage One each pupil's level of achievement is levelled against national standards included as part of their annual written report. At the end of KS1 children's attainment is also reported for national data. For science this is teacher assessment only.

13. **Inclusion and Equal Opportunities:**

a. At West Earlham Infant and Nursery School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.

b. We aim to meet the needs of all our children through differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This will enable children with learning and/or physical difficulties to take an active part in scientific learning, practical activities and investigations in order to achieve the goals they have been set. Teachers adapt their questioning, interacting and teaching strategies

based upon the individual needs of each child. All teachers develop positive relationships with all children in order to ensure that these interactions are highly valuable and tailored to each child's learning needs. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities and more complex questioning. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

14. **Resources**

a. We ensure that we have relevant, effective resources for science teaching in school which are safely stored and accessible to all staff. Resources are monitored and supplemented by the Science Leader annually and needs are identified and met through the Science Leader's Action Plan. Additional relevant resources may be identified, sourced and requested through the subject leader by any member of staff.

15. **Monitoring and Review**

a. The Science Leader works in conjunction with the Senior Leadership Team monitoring the standards of the children's work and the quality of teaching.
b. The role of the subject leader involves:
    1. keeping informed about developments and new initiatives to support the teaching of science and ensure staff are informed
    2. modelling good practice
    3. supporting teachers in planning and using resources
    4. being responsible for the upgrading and ordering of resources and arranging for their storage
    5. updating the school policy
    6. Climate Action plan and supporting children's contribution to sustainability and climate change

Related Policies:

Teaching and Learning Policy
Feedback Policy
Assessment Policy
Climate Action Plan

Appendices:

Our Science Curriculum Progression document

Approval

This policy has been reviewed in line with the 2010 Equality Act and Public Sector Equality Act. Due regard has been given to Equality.

This policy will be adopted in ***November 2025***. The date of the next formal review will be ***November 2028*** and every three years thereafter, unless statutory legislation changes.

Policy approved by the Head Teacher of West Earlham Infant and Nursery School.

Signed ……J Hunter…….... (*Head Teacher)*

Name: ……Mrs Jade Hunter……

Date: …21.7.25……