Cotmanhay Infant and Nursery School

Science Policy

Last updated: January 2026

Science at Cotmanhay Infant and Nursery School:

At Cotmanhay Infant and Nursery School, we believe science is a crucial subject that sparks children's natural curiosity and empowers them to explore the world with confidence and imagination. Through high-quality and engaging teaching, we inspire our children to ask bold questions, make thoughtful predictions and uncover the ways science shapes their everyday lives. By nurturing these skills, we aim to instil a lifelong love of learning, equipping our children to adapt, innovate, and thrive in an ever-changing world. We are committed to ensuring equal opportunities for all; therefore, our science curriculum is designed to enrich children's cultural and intellectual capital. By providing meaningful experiences, we enable children to explore and understand the world around them while developing the knowledge and skills needed to think scientifically.

This policy outlines our approach to teaching and learning science from the Early Years Foundation Stage (EYFS) through to Year 2, ensuring alignment with the EYFS statutory framework (2025), the National Curriculum for Science (2014), and the White Rose Science scheme of learning.

Intent:

We aim to:

- Foster a lifelong curiosity and enthusiasm for science in all pupils.
- Develop children's understanding of the world around them through exploration and enquiry.
- Build secure foundations in scientific knowledge and vocabulary.
- Encourage pupils to ask questions, make predictions, and think critically.
- Ensure progression from Early Years to KS1, preparing pupils for the demands of KS2 science.

We want every child to leave KS1 with:

- A positive attitude towards science.
- The ability to work scientifically through observation, investigation, and reasoning.
- An understanding of how science relates to everyday life.

Implementation:

Early Years Nursery Approach:

In our Cubs nursery (ages 2–3 years) and Bears nursery (ages 3–4 years), science is embedded within *The Natural World* aspect of *Understanding the World* Area of the EYFS statutory framework. Children learn through play, hands-on experiences, and outdoor exploration. Teachers use questioning and discussion to develop curiosity and introduce scientific vocabulary in context.

Reception to Year 2 Approach:

In Reception and Key Stage 1, science follows the White Rose Science scheme which provides a structured, progressive approach to teaching science which ensures:

- **Using small steps to secure understanding**, allowing pupils to build confidence and mastery before moving on.
- **Providing a coherent and progressive curriculum** that ensures continuity from EY through KS1.
- **Clear knowledge building and vocabulary development** enabling pupils to articulate their understanding effectively.
- **Embedding scientific enquiry across all units in Key Stage 1**, giving pupils regular opportunities to observe, question, predict, and investigate.

Impact:

Pupil Outcomes:

- Pupils display curiosity, enjoyment, and enthusiasm for science.
- Pupils demonstrate secure knowledge and understanding of EYFS/KS1 scientific content and use accurate vocabulary.
- Assessment data indicates that the majority meet or exceed age-related expectations; identified gaps are closed through timely intervention.
- SEND and disadvantaged pupils achieve well from their starting points, evidenced through work samples, formative assessments, and summative data.
- They make meaningful connections between science and everyday life, the local environment, and personal health/safety.
- Children have a positive attitude towards science and the skills to continue exploring and questioning the world.
- Children develop resilience, confidence, and positive attitudes through practical science activities, building secure foundations that prepare them effectively for Key Stage 2.

1. Legal framework

This policy has due regard to all relevant legislation and statutory guidance including, but not limited to, the following:

- DfE (2013) 'Science programmes of study: key stages 1 and 2'
- DfE (2025) 'Early years foundation stage statutory framework: For group and school-based providers''
- DfE (2023) 'Development Matters'

This policy operates in conjunction with the following school policies:

- Health and Safety Policy
- Early Years Policy
- Early Years Assessment Policy
- KS 1 Assessment Policy

2. Roles and responsibilities

The governing board is responsible for:

- Ensuring a broad and balanced science curriculum is implemented in the school.
- Ensuring the school's science curriculum is accessible to all pupils.

The headteacher is responsible for:

- The overall implementation of this policy.
- Ensuring the school's science curriculum is implemented consistently.
- Ensuring appropriate resources are allocated to the science curriculum.
- Ensuring all pupils are appropriately supported.
- Appointing a member of staff to lead on the school's approach to teaching science.

The science lead is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for science.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of science, providing support for staff where necessary.
- Organising the deployment of resources and carrying out an annual audit of all science resources.
- Leading staff meetings and providing relevant staff with the appropriate training.
- Advising on the contribution of science to other curriculum areas.

Class teachers are responsible for:

- Acting in accordance with this policy.
- Ensuring that lessons are always taught in line with the school's Health and Safety Policy.
- Liaising with the science lead about key topics, resources and support for individual pupils if required.
- Ensuring that all relevant statutory content is covered within the school year.
- Monitoring the progress of pupils in their class and reporting this on a termly basis.
- Reporting any concerns regarding the teaching of the subject to the science lead or a member of the SLT.
- Undertaking any training that is necessary to teach the subject effectively.

3. The Early Years Foundation Stage (EYFS) statutory framework and National Curriculum

The EYFS statutory framework and National Curriculum will be followed for all science teaching.

Early Years:

Educational provision and practice within the early years will be centred around the children's needs in our school, the requirements of the DfE's 'Statutory framework for the early years foundation stage' and Developmental Matters .

The educational programmes will be based on an observation of children's needs, interests and stages of development. Activities will be planned to reflect these interests and individual circumstances or gaps in order to provide each child with a challenging and enjoyable experience to ensure all children make the best possible progress. (See the Early Years Policy).

In the planning and delivery of educational programmes, staff will have due regard to this science policy, as well as the school's Early Years Policy and the relevant DfE guidance.

This science policy follows the EYFS guidance in the Early Years Policy and the following documents:

- The DfE's current 'Statutory framework for the early years foundation stage' and the requirements therein.
- The DfE's current 'Early years foundation stage profile' handbook.
- The DFE's current Progress Check at 2
- The STA's current 'Early years foundation stage assessment and reporting arrangements'.
- The DFE's current guidance for the ' Developmental Matters

In **Nursery and Reception**, in accordance with the '**Early Years Foundation Stage** statutory framework: For group and school-based providers', focus will be put on the seven early learning goals (ELGs), with the scientific aspect of pupils' work relating to the objectives set out within the framework. The ELGs cover:

1. Communication and language: listening, attention and understanding; and speaking.
2. Personal, social and emotional development: self-regulation, managing self, and building relationships.
3. Physical development: gross motor skills and fine motor skills.
4. Literacy: comprehension, word reading, and writing.
5. Mathematics: number and numerical patterns.
6. Understanding the world: past and present; people, culture and communities; and the natural world.
7. Expressive arts and design: creating with materials; and being imaginative and expressive.

What pupils will experience and learn (by phase and year)

EYFS

In the **EYFS** science is embedded within ***The Natural World*** aspect of the ***Understanding the World*** Area of the **EYFS** statutory framework. Children use all their senses to explore natural materials, begin to care for the environment and living things, and build a broad vocabulary for describing what they notice, setting strong foundations for later scientific enquiry.

Cubs Nursery (2-3 years) (EYFS):

- Begin noticing objects, animals, and people in their environment.
- Explore natural materials (water, sand, soil).
- Show curiosity about changes (light, shadows, weather).

Bears Nursery (3-4 years) (EYFS):

- Talk about what they see in nature (plants, animals, weather).
- Begin to understand life cycles (e.g., plants growing).
- Show care for living things and the environment.

Reception (EYFS):

- Make observations of animals and plants.
- Discuss similarities, differences, and changes.
- Understand basic concepts like growth, decay, and seasons.

By the end of reception children are expected to demonstrate the following
Early Learning Goals:

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

Key Stage 1:

In Key Stage 1 we follow the statutory programmes of study as outlined in the National Curriculum.

Year 1:

- ***Plants*****:** Identify and name common plants; identify basic parts of plants; observe seasonal change in plants.
- ***Animals, including humans*****:** Identify and name common animals (fish, amphibians, reptiles, birds, mammals); classify carnivores/herbivores/omnivores; identify, name, and label basic human body parts and senses.
- ***Everyday materials*****:** Distinguish between objects and materials; identify and name common materials; describe simple properties; compare and group.
- ***Seasonal changes*****:** Observe changes across the four seasons; describe associated weather and day length changes.

Year 2:

- ***Living things and their habitats***: Explore differences between living/dead/never alive; identify habitats and how living things depend on them; simple food chains.
- ***Plants*****:** Observe and describe how seeds/bulbs grow; know plants need water/light/temperature to grow/stay healthy.
- ***Animals, including humans*****:** Offspring and growth into adults; basic needs (water/food/air); importance of exercise, diet, and hygiene.
- ***Uses of everyday materials*****:** Identify suitability for uses; compare materials; find out how shapes of solid objects can be changed.

Across Years 1 and 2, pupils will learn:

Working scientifically

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help in answering questions.

These are all embedded within the programmes of study rather than taught as a separate strand.

4. Cross-curricular links

Where possible, the science curriculum will provide opportunities to establish links with other curriculum areas. This includes:

PSHE:

- Healthy living and nutrition
- Personal hygiene and safety
- Exercise and wellbeing
- Caring for the environment and living things

Geography:

- Weather and climate patterns
- Habitats and where animals and plants live
- Locating environments and physical features on maps
- Understanding where natural resources come from
- Comparing global differences such as day/night and climate

Maths:

- Counting, measuring, and comparing in investigations
- Recording and interpreting data using charts and graphs
- Understanding size, weight, capacity, and temperature
- Exploring patterns, sequencing, and time intervals

English:

- Speaking and listening during scientific discussions
- Using descriptive language and scientific vocabulary
- Reading non-fiction texts about science topics
- Writing for different purposes (reports, labels, diagrams)
- Storytelling and role play to explore scientific ideas

5. Teaching

Across all age ranges we promote oracy by encouraging children to articulate their observations, explain their thinking, and use scientific vocabulary confidently during discussions and investigations.

Priority is given to outdoor learning which is provided at every possible opportunity.

Early Years Nursery

In our Cubs nursery (ages 2–3 years) and Bears nursery (ages 3–4 years), science is taught through topics and themes, enabling children to develop observation, questioning, and exploratory skills. Knowledge is acquired through play-based, open-ended activities that encourage discovery and engagement.

Teachers plan purposeful well managed learning opportunities throughout the year that encourage children to ask and answer scientific questions about the world around them. The curriculum is mapped out to ensure progress by; consolidating scientific knowledge and skills, vocabulary and planning new engaging learning opportunities that develop attainment and ensure coverage of the EYFS statutory framework.

Lesson plans will balance visual, auditory and kinaesthetic elements used in teaching, ensuring that all pupils with different learning styles can access the learning experience. All lessons will have clear learning objectives, which are shared and reviewed with pupils.

Long-term planning will be used to outline what is taught within each Nursery year group. Medium-term planning will be used to outline the knowledge, skills and vocabulary that will be taught each term, as well as highlighting the opportunities for assessment, identifying learning objectives, main learning activities and differentiation. Weekly planning will be used flexibly to reflect the objective of the lesson, the success criteria and the aim of the next lesson, building on medium-term planning and considering pupils' needs.

Reception and Key Stage 1

In Reception and Key Stage 1 science is taught through the **White Rose Science scheme of learning.**

This ensures:

- Clear progression of knowledge, skills and vocabulary
- Consistent lesson structures
- Regular opportunities for practical investigation

Lessons include:

- Clear learning objectives
- Scientific vocabulary
- Practical enquiry
- Clarity on misconceptions
- Key questions
- Discussion and reflection opportunities

In **Key Stage 1**, lessons will allow for a wide range of scientific enquiry, including the following:

- Comparative / Fair testing
- Research
- Observation over time
- Pattern seeking
- Identifying, Grouping and classifying

6. Assessment

Assessment plays an important part in helping the school to recognise children's progress, understand their needs, plan activities, and assess the need for support.

Pupils will be assessed and their progression recorded in **accordance** with the school's Assessment Policies for Early Years and Key Stage 1.

The school will use three main forms of assessment:

- Ongoing **formative assessment** – to inform teaching on a day-to-day basis
- **Summative assessment** – to understand a child's performance at the end of a period of teaching. Our school uses an online assessment system called SONAR to record children's attainment. In Early Years children's this is 4 times a year; baseline - September, December, April and July. In KS1 this is 3 times a year; October, February and July, as this aligns with the assessment for the other core subjects.
- **National statutory summative assessment** – to understand a child's performance in relation to national expectations and comparisons.

Parents/carers will be provided with a written report about their child's progress during the summer term every year. Verbal reports will be provided at parent-teacher meetings during the Autumn and Spring terms.

EYFS:

In SONAR class practitioners/teachers record if a child is Inline (I) or Working Towards Expected (WTE) at each summative assessment point.

Assessment should not involve long breaks from interaction with children or require excessive paperwork. When assessing whether an individual child is at the expected level of development, practitioners should draw on their knowledge of the child and their own expert professional judgement. Practitioners are not required to prove this through collection of any physical evidence.

In addition, the following **National statutory summative assessments** are also completed:

Cubs Nursery (2–3-year-olds):

Progress check at age two – a short written summary of children's development is completed shortly after the child starts the Cubs Nursery and is shared with parents/ carers.

Reception:

Reception Baseline Assessment – a short assessment which is taken within the first six weeks of a child starting Reception- results submitted to the DFE.

The EYFS Profile – a comprehensive assessment completed at the end of the EYFS to provide a well-rounded picture of a child's knowledge, understanding and abilities, attainment against the early learning goals (ELGs), and their readiness for Year 1.

Key Stage 1:

In SONAR class teachers record if a child is Inline (I), Working Towards Expected (WTE) or Above (A) at each summative assessment point.

Assessment in science in KS1 will focus on two key areas:

1. **Scientific Knowledge (Substantive):** Understanding of scientific concepts, facts, and principles.
2. **Working Scientifically Skills (Disciplinary):** Application of scientific methods, including observation, investigation, analysis, and evaluation.

Summary of the assessment methods for White Rose Science in KS1:

- End-of-block and end-of-term assessments
- Progress tracking tools
- Daily formative observation during tasks
- Vocabulary and key-fact checks
- Monitoring enquiry skills (Working Scientifically)

7. Equipment and resources

Science resources for each unit are stored in **the Science cupboards in The Den**.

The science lead is responsible for ensuring that all resources and equipment are sufficiently maintained, and for maintaining an inventory of resources. The science lead will carry out an annual audit of the science resources, reordering any consumables when necessary. Any equipment or resources which are a cause of concern will be removed from **the Science cupboards in The Den**. immediately.

Equipment will be checked by the relevant class teacher prior to each use and any damages or defects will be reported to the science lead immediately. Staff will also inform the science lead of any changes regarding science resources, such as when supplies of resources have run out or new resources are required. The science lead is responsible for negotiating requests from staff and ensuring resources are bought within the amount allocated in the annual budget.

8. Health and safety

Staff will act in accordance with the school's Health and Safety Policy at all times.

This school subscribes to CLEAPSS (www.cleapss.org.uk) which provides advice on health and safety for science including model risk assessments, information sheets, a helpline service and advice in the event of an emergency.

All pupils will be shown how to correctly use equipment prior to use and will be monitored by staff whilst using equipment. Pupils will also be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment, and the personal safety protocols and protective equipment needed when using equipment or carrying out tasks, e.g. goggles.

At the beginning of any experiment, the class teacher will outline the purpose of the experiment to the class, and safety precautions will be thoroughly outlined. Any experiments or activities not previously conducted by the class teacher will be trialled prior to being undertaken with pupils.

9. Equal opportunities

We are committed to challenging racism, sexism, and discrimination. We aim to promote justice, equality of opportunity in the fair treatment for all and thereby allow all pupils to achieve the level of success and self -respect which they deserve. We use resources which reflect cultural diversity and are free from discrimination and stereotyping. We encourage our children to be aware of the British Values and to listen to each other's views and treat them with respect, even if their views are different to our own. We encourage pupils to follow our school and community rules and know the consequences when they are broken. All activities are planned to ensure that lessons cater for different learning styles and levels of ability so that all children keep up rather than catch up. This may mean small group, one-to-one teaching and learning or the use of additional resources to enable individuals to make progress and meet their potential.

10. Monitoring and review

Monitoring of Science will take place each year in the form of:

- Class visits.
- Pupil discussions and work scrutiny.
- Environment checks.
- Planning scrutiny.
- Teacher Discussions.

Governors receive a termly Science report on data, priorities, monitoring and outcomes.

This policy will be reviewed on an **annual** basis by the science lead, in collaboration with the headteacher. The next scheduled review for this policy is **January 2027**.

Any changes made to this policy will be communicated to class teachers and other relevant staff.