



Science

2024-2025

Statement of intent

Herringthorpe Infant School recognises the importance of science education in teaching pupils about the world around them. This policy will ensure the school complies with the national curriculum and help pupils have a solid grounding in science, a positive attitude towards scientific knowledge, and a strong understanding of experimental processes.

1. Legal framework

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

- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013
- DfE (2013) 'Science programmes of study: key stage 1'
- DfE (2021) 'Statutory framework for the early years foundation stage'

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.

Science teachers are responsible for:

- Acting in accordance with this policy.
- Ensuring that lessons are taught in line with the school's Health and Safety Policy at all times.

- 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 an annual 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 national curriculum

The national curriculum will be followed for all science teaching.

In EYFS, in accordance with the 'Statutory framework for the early years foundation stage', 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.

During Years 1 and 2, pupils will be taught to:

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.

Year 1 pupils will also be taught to:

Plants

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of a variety of common flowering plants, including trees.

Animals, including humans

- Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- Describe and compare the structure of a variety of common animals, i.e. fish, amphibians, reptiles, birds and mammals, including pets.
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Everyday materials

- Distinguish between an object and the material from which it is made.
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.
- Describe the simple physical properties of a variety of everyday materials.
- Compare and group together a variety of everyday materials on the basis of their simple physical properties.

Seasonal changes

- Observe changes across the four seasons.
- Observe and describe weather associated with the seasons and how day length varies.

Year 2 pupils will also be taught to:

Living things and their habitats

- Explore and compare the differences between things that are living, dead, and things that have never been alive.
- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
- Identify and name a variety of plants and animals in their habitats, including microhabitats.
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants

- Observe and describe how seeds and bulbs grow into mature plants.
- Find out and describe how plants need water, light and a suitable temperature to grow
- and stay healthy.

Animals, including humans

- Notice that animals, including humans, have offspring which grow into adults.
- Find out about and describe the basic needs of animals, including humans, for survival, i.e. water, food and air.

- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Uses of everyday materials

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard, for particular uses.
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

4. Cross-curricular links

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

English

- Pupils' writing skills are developed through recording their planning, what they observe and what they found out.

Maths

- Pupils use their knowledge and understanding of measurement and data handling, including through recording their findings on charts, tables and graphs.

PSHE

- Health education is taught as part of the science units about humans, including information about healthy lifestyles, growth, age, and reproduction.

5. Teaching and assessment

Lesson planning

All relevant staff are briefed on the school's lesson planning procedures as part of staff training.

Throughout the school, science is taught as a discrete lesson and as part of cross-curricular teaching when appropriate. The statutory national curriculum content from the DfE's 'Science programmes of study', as outlined above, as the starting point for their planning.

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 the units to be taught within each year group. Medium-term planning will be used to outline the vocabulary and skills that will be taught in each unit of work, as well as highlighting the opportunities for assessment, identifying learning objectives, main learning activities and differentiation. Short-term 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 taking into account pupils' needs.

Teaching

Pupils will be taught to describe associated processes and key characteristics in common language, as well as understand and use technical terminology and specialist vocabulary. Lessons will allow for a wide range of scientific enquiry, including the following:

- Questioning, predicting and interpreting
- Pattern seeking
- Practical experiences
- Collaborative work
- Carrying out investigations
- Carrying out time-controlled observations
- Classifying and grouping
- Undertaking comparative and fair testing
- Researching using secondary sources

Opportunities for outdoor learning will be provided where possible.

Assessment

Pupils will be assessed and their progression recorded in line with the school's Primary Assessment Policy. Assessment in science will be based upon scientific knowledge and understanding.

Pupils will be assessed continually throughout the year and will undertake a summative assessment at the end of each academic year. Formative assessment will be carried out informally throughout the year. This will enable teachers to identify pupils' understanding of subjects and inform their immediate lesson planning. The results of end-of-year summative assessments will be passed to relevant members of staff, such as the pupil's future science teacher.

Assessment will take various forms, including the following:

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Marking work against learning objectives
- Specific assignments for individual pupils
- Observing practical tasks and activities
- Pupils' self-evaluation of their work
- Classroom tests and formal exams

Parents will be provided with a written report about their child's progress during the Summer term every year. Reports will include information on the pupil's attitude towards science, progress in understanding scientific methods, ability to investigate, and the knowledge levels they have achieved. Verbal reports will be provided at parent-teacher meetings during the Autumn and Spring terms.

6. Equipment and resources

Science resources for each unit are stored in the cupboards in the disabled toilet.

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 inventory immediately.

Equipment will be checked by the relevant science 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.

7. Health and safety

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

A risk assessment will be carried out by teachers before higher-risk science-related activities, e.g. conducting an experiment or undertaking practical activities.

All science teachers and other relevant staff will be shown how to correctly use science equipment as part of their induction training. Staff will also be made aware of the COSHH and RIDDOR regulations as part of their induction training and will act in accordance with these whilst undertaking activities.

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

Accidents and near-misses will be reported following the school's reporting procedures.

8. Equal opportunities

All pupils will be given equal access to the entire science curriculum, including practical experiments.

Where required, pupils with SEND will be provided with additional support in order to fully engage with the science curriculum.

Where it is inappropriate for a pupil to participate in a specific lesson because of reasons related to any protected characteristics, the lesson will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

The school aims to provide more academically able pupils with the opportunity to extend their scientific thinking through extension activities such as problem solving, investigative work and scientific research.

9. Monitoring and review

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 May 2024.

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