

SCIENCE POLICY

At Carr Head Primary school, we strive to empower a generation of curious, enthusiastic and revolutionary thinkers. Our learners will ask questions to develop their critical and logical thinking skills, enabling them to make sense of the ever-changing world around them and to see the 'bigger picture'. Our children will operate as scientists by working systematically to build on their existing knowledge and develop new skills to solve problems, sparking awe and wonder.

RATIONALE

It is very important that this policy reflects the essential part that science plays in the education of the children at Carr Head Primary School. It is also important that a positive attitude towards science is encouraged amongst all our children to understand the world around them.

Intent:

In Science, we intend to inspire pupils with a curiosity and fascination about the world around them. We will develop their scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. We will develop their scientific language, enabling children to talk about their methods and explain their findings and conclusions. The curriculum will motivate them to become effective communicators of scientific ideas, facts and data whilst enhancing their practical skills of scientific enquiry.

Implement:

- A clear and comprehensive scheme of work in line with the National Curriculum where teaching and learning should show progression across all key stages within the strands of Science.
- Children have access to key language and meanings in order to understand and readily apply to their written, mathematical and verbal communication of their skills.
- Children will use a range of resources to develop their knowledge and understanding that is integral to their learning and develop their understanding of working scientifically.
- Clear and comprehensive scheme of work in line with the National Curriculum where teaching and learning should plan for practical investigative opportunities within science lessons.
- Children will reflect on previous learning and cross curricular links will be made wherever possible
- Children will be able to build on prior knowledge and link ideas together, enabling them to question and become enquiry-based learners.
- Attainment will be assessed each term through related topic assessment for learning & tracking data.
- All units of work will aim to include a range of working scientifically skills: observing over time, comparative & fair testing, pattern seeking, identifying & classifying and research.

Impact

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Children to be able to identify similarities and differences in relation to places, objects, materials and living things. They are able to discuss the features of their own environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	Children should be able to name, label and sort animals, plants and body parts into groups. They should be able to perform simple tests, gather data and discuss what they find out.	Children should be able to experience and observe phenomena, looking more closely at world around them. They should be curious and ask questions about what they notice. They should be developing their scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things and carrying out simple tests	Children should be able to label the parts of a plant and have a secure knowledge of what a plant needs to survive. Undertake observations over a period of time, make predictions, present data and analyse findings. Explain how water transportation occurs. Children should be able to confidently compare and group together different kinds of rocks & fossils based on their appearance and physical features. To sort, name and identify magnetic and nonmagnetic objects. To understand light & shadows, patterns and reflection.	Children should be able to explain how sound is made up of vibrations. Children have an understanding of different materials and their state of matter. Children have a deeper understanding of animals within their habitat and a food chain. Children should be able to scientific vocabulary to plan, carryout their own investigations.	Children use their knowledge of the solar system to explain regularly experienced natural processes such as day and night and gravity. They can explain similarities and differences between the life cycles of plants, animals and humans using appropriate scientific vocabulary.	Children use their scientific skills and vocabulary to plan, carry out and evaluate appropriate investigations to explore the wider world.

PURPOSE

- To ensure that teachers meet their statutory obligations with regards to the teaching of science.
- To raise science standards by promoting a high standard of excellence and consistency of approach amongst all staff.
- To ensure procedures for planning and assessment enable a broad and balanced curriculum that has continuity and progression and addresses equal opportunities.
- To foster a positive attitude to science as an exciting, creative and 'hands-on' part of the curriculum.
- To foster in children the confidence to apply their knowledge, skills and ideas in real life contexts both within and outside the classroom and become aware of the uses of science in the wider World.
- To provide children with scientific experiences that develop their understanding of themselves and the world in which they live.
- To develop the enquiry skills of predicting, asking questions, concluding and evaluating based on evidence and understanding and use these skills in investigative work.
- To introduce and extend children's knowledge and understanding and know that scientific ideas change and are modified.
- To develop the ability of pupils to communicate their ideas using appropriate scientific vocabulary.
- To encourage safe practice in all areas of science.
- To help provide pupils with the competence and confidence to deal with a life in an increasingly scientifically complex society.
- To develop the ability of pupils to question the world around them.
- To use science as a vehicle to enhance reading, writing and numeric skills.

GUIDELINES

- There will be a weekly dedicated science session (years 1-6) which starts with
- Staff will identify appropriate learning objectives and success criteria.
- Science is to be used in other curriculum areas, when appropriate to help consolidate science concepts and skills.
- Children will be introduced to the appropriate and varied scientific vocabulary.
- In Early Years the development of scientific thought is an important area of experience. Learning should be active, bearing in mind the requirements of the EYFS Curriculum Guidance.
- Materials and equipment required for the delivery of the science curriculum will be available in a central scientific store (stored in the Year 5 classroom – individuals are responsible for returning materials and equipment to their correct location).
- Teachers need to explicitly teach the process skills for investigations e.g. observing, planning, predicting etc.
- Teaching should make use of direct first-hand experience whenever possible.
- There should be opportunities for cross curricular links.

TEACHING AND LEARNING

Science is taught on a weekly basis from Reception to Y6 and supported and enhanced through other curriculum areas. In Foundation stage, science forms the basis of one of the seven areas of learning. KS1 and KS2 use the 2014 National Curriculum as a basis for planning within the subject. Learning takes place in mixed ability groups within classes and

differentiation takes place where appropriate. Support will also include partner/ group work. Teachers deliver the curriculum and achieve set learning objectives. Teachers use a variety of interactive teaching methods and draw upon elements of 'PLAN Examples of Work'. Quality first teaching and learning for science lessons at Carr Head include:

- Highly focused lesson design with sharp learning objectives.
- High demands of pupil involvement and engagement with their learning.
- High levels of interaction for all pupils.
- Appropriate use of questioning, modelling and explaining on the part of the teacher.
- An emphasis on learning through dialogue, with regular opportunities for pupils to talk both individually and in groups.
- An expectation that pupils will accept responsibility for their own learning and work independently.
- Regular use of encouragement and authentic praise to engage and motivate pupils.

Teachers will:

- Plan teaching that builds on existing knowledge and experiences and monitor pupils' learning to inform responsive teaching, feedback, and next steps.
- Explicitly teach new scientific vocabulary and its meaning, creating opportunities for repeated engagement and use over time.
- Encourage pupils to explain their thinking and relate new learning to relevant, real-world contexts.
- Explicitly teach the knowledge and skills required to work scientifically (ask scientific questions, predict, plan an enquiry, observe closely, measure accurately, collect/record results, present results, interpret results, draw conclusions and evaluate an enquiry.)

KNOWLEDGE ORGANISERS

A knowledge organiser is a document that contains key facts and essential knowledge (laid out in easily digestible chunks) that children need to have a basic understanding of a topic. Every science unit has a knowledge organiser that is stuck in each child's science book for them to refer to regularly. At the start of a new unit, they are used to encourage discussion, research and retrieval of knowledge from previous learning. Throughout a unit of work, they are used to identify gaps in children's knowledge and create opportunities for spaced retrieval practise.

ASSESSMENT

- It is necessary to be constantly evaluating what individuals and groups are learning and what they bring to the learning situation. Through evaluation, any difficulties can be identified and specific help to remedy the problem can be given.
- Evidence of children's work may be kept in the form of teacher's notes, children's drawings, plans, photographs, construction models, writing etc.

- Feedback to pupils about the progress in science is achieved through the marking of work (please see Carr Head's Marking Policy) and more often through informal verbal feedback.
- Years 1, 2, 3, 4, 5 and 6 summative assessment will level the children as 'below', 'on track', or at 'greater depth' for their relevant year group. Work will be assessed against the National Curriculum. Data will be entered onto the school's tracking database for monitoring purposes.

ICT

The use of the interactive whiteboard-based lessons should support the concentration of children during science lessons. Teachers need to exploit opportunities to incorporate ICT into the teaching and learning of science. For example, through the use of iPads and visualisers. Teachers should also make use of material available on the internet for planning and delivering science lessons. ICT can play an important role in supporting science, but it should not be a substitute for practical science.

Special Educational Needs

We recognise that there are children of widely different scientific abilities in all classes, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the child. We achieve this in a variety of ways by:

Scaffolding (*temporary support that is removed when it is no longer required*)

- Support could be visual, verbal, or written.
- Writing frames, partially completed examples, knowledge organisers,
- Support with getting equipment needed
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Explicit instruction (*teacher demonstration followed by guided practice and independent practice*)

- Worked examples with the teacher modelling and thinking out loud to teach children
- Using visual aids and concrete examples promoting discussion and links in learning.

Cognitive and Metacognition Strategies

- Cognitive strategies - *memorisation techniques or subject specific strategies*
- Metacognition strategies (*help pupils plan, monitor and evaluate their learning*)
- Chunking the task through provision of checklists, instructions on a whiteboard or providing one question at a time.
- Prompt sheets

Flexible Grouping (*pupils are allocated to smaller groups based on the individual needs*)

- For collaborative learning, for example to read and analyse source texts, complete graphic organisers, independently carry out a skill, remember a fact, or understand a concept.
- Pre-teaching key vocabulary

Use technology (*assist teacher modelling or used to give feedback*)

- Use a visualizer to model worked examples.
- Online quizzes to check understanding

INCLUSION

At Carr Head Primary School we plan to provide for all pupils to achieve, including boys and girls, pupils with SEN, pupils with disabilities, Pupil Premium children, higher attainers, pupils from all social and cultural backgrounds, children who are in care and those subject to



safeguarding, pupils from different ethnic groups and those from diverse linguistic backgrounds.

Monitoring of impact (including role of governors)

Data outcomes are shared with Governors on a termly and annual basis. Data is used to analyse progress against national and local outcomes as well as to evaluate the development of the subject in school.

The impact of teaching and learning in science is monitored on an on-going basis in terms of data and annually in terms of Subject Spotlights (School's Monitoring Cycle). The subject leader reports annually to Governors on subject development of the subject.

Policy Date: March 2026

Review Date: March 2028