



Parkside Primary School

Science Policy

Reviewed May 2025

Science Curriculum Policy



National Curriculum aims for Science

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Develop understanding of the nature, process and methods of Science through different types of Science enquiries that help them to answer scientific questions about the world around them.
- Develop and equip children with the scientific knowledge required to understand the uses and implications of science today and for the future.

Why is this area of learning important?

At Parkside Primary School we believe that teaching and learning in Science should stimulate and excite children's curiosity about the world around them. It provides first hand experiences and support for children to develop enquiring minds, learning how to answer questions and to discuss science collaboratively. Starting with the children's prior knowledge, children are given the opportunity to ask and answer their own questions, ultimately leading to improving their own understanding. A planned range of practical experiences set in meaningful contexts helps to develop a range of investigative skills and allows children to take risks and learn from their mistakes, developing them in to independent learners.

The aims of Science lessons at Parkside are to enable children to:

- Develop enjoyment and interest in Science
- Ask and answer scientific questions
- Plan and carry out scientific investigations, using equipment, including computers, correctly
- Know and understand the life processes of living things
- Know and understand the physical processes of materials, electricity, light, sound and natural forces
- Know about the nature of the solar system, including the Earth
- Evaluate evidence and present their conclusions clearly and accurately
- Understand that science has a role to play in their daily lives

Essential knowledge

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

The National Curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Key skills

The new National Curriculum for Science states that children will continuously develop skills in 'Working Scientifically' throughout their Science learning. The notes and guidance give examples of how 'Working Scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

At Parkside, we place a high emphasis on the development of pupils' skills of 'Working Scientifically'. In the substantial majority of lessons, the skills for 'Working scientifically' are taught alongside the knowledge and understanding in Biology, Chemistry and Physics. In this way there is an equivalent emphasis on 'Working Scientifically' as there is on knowledge and understanding.

Breadth of learning and curriculum progression

KEY STAGE 1

The principal focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

By the end of Key Stage 1, the performance of the great majority of the pupils should be at age-related expectations against the new National Curriculum objectives.

KEY STAGE 2

Lower Key Stage 2

The principal focus of science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Upper Key Stage 2

The principal focus of science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

By the end of Key Stage 2, the performance of the great majority of the pupils should be at age-related expectations against the new National Curriculum objectives.

Strategy for implementation - entitlement and curriculum provision

Science is a core subject of the National Curriculum and pupils undertake some Science activity every week at both key stages. The work covered in Key Stage 1 builds on the Early Years Foundation Stage (EYFS). Pupils in Reception develop their knowledge, understanding and skills through play activities and direct teaching from which the pupils undertake planned tasks. Science is allocated ten per cent of the taught time at both key stages and this amounts to about 80 hours per year at Key Stage 1 and about 90 hours per year at Key Stage 2. Planning is in-line with the requirements of the National Curriculum 2014.

Cross-curricular studies

Children will have opportunities to develop their scientific skills through a range of subjects including numeracy, literacy and computing. Particularly in computing, this will enhance the development of enquiry skills through the use of data handling techniques in the collection, recording, analysis and presentation of data and information.

Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking, and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet, and how science can contribute to the way people care for the planet, and how science can contribute to the way we manage the Earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Assessment and recording of progress

Children's work will be marked according to the agreed school marking policy. The class teacher continuously monitors assessment of children's understanding of the content of each unit. Children are assessed less formally using a variety of methods:

- Observing children at work, individually, in pairs, in a group and in classes.
- Questioning, talking and listening to children.
- Considering work/materials/investigations produced by children together with discussions about this with them.

Children will be assessed at the end of each topic. At the end of each topic the teacher will make a summative judgement about the attainment of each child, recording whether they have yet to meet, have met or have exceeded the topic objectives. Assessments will be recorded online using the system included in the new scheme of work.

Formal summative assessment is carried out at the end of each National Curriculum Key Stage (i.e. in Years 2 and 6) through the use of teacher assessment.

Resources

The Science co-ordinator will make sure that there are sufficient resources and in good working condition to allow investigations, observations and measurements to be carried out in small groups. Science resources are all stored in clearly labelled boxes in the science cupboard. All teachers are responsible for keeping the equipment tidy and returning all resources once they have been finished with. A database of all science resources is kept to keep track of what is available and plan what future investment might be needed.

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