Longshaw Junior School

Success for all - Nothing Less!

Science Policy

Longshaw Junior Community School

Science Policy

The National Curriculum 2014 Definition

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for Science aims to ensure that all pupils:

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

In support of these aims, in teaching Science we will promote:

- An opportunity for children of all abilities to succeed.
- A positive attitude towards ourselves and the environment.
- An appreciation of the nature of Science and its relationships.
- Opportunities to observe, experience and explore the world around them.
- The ability to challenge ideas both in a practical and creative sense.
- A rational way of working, using the ability to think clearly and build on ideas.
- An understanding of enquiry and investigation.
- The development of academic, personal skills and attitudes.
- The development of safe practices.
- A motivation of further learning.
- Scientific skills and knowledge.
- An understanding of the impact of Science and its contribution to the quality of life.

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 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. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific

elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

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 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. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly

Strategies for teaching Science

The content of our school curriculum is based on the PLAN Knowledge Matrices. These documents identify the key learning and vocabulary for each unit. All of the key learning follow the programmes of study from the new National Curriculum and pinpoint the key pieces of learning in each year group or phase. They build upon the statutory elements to provide teachers with more specific guidance, further examples or additional and relevant objectives to ensure clarity, cohesion and continuity. PLAN progression documents show the knowledge and working scientifically skills that the children will develop year on year.

The PLAN documents support the teaching of each unit and enable knowledge and working scientifically skills to be identified. This helps inform our medium and short term planning. We achieve curriculum balance in Science by organising differentiated activities and planning strategies to encourage investigation and experiments of Science in everyday life. The whole school overview ensures that all areas of the Science curriculum is taught with clear progression throughout the school.

In teaching Science, a range of teaching and learning experiences should take place. Medium term planning will take account of the need to challenge and support certain learners. Learning outcomes will be in line with the programme of study. Work is enhanced by a range of strategies and resources to assist learning.

Equal Opportunities/Inclusion

We are committed in our Mission Statement to develop the talents of every pupil, regardless of their gender, race or cultural background. We ensure that we plan to meet the needs of all our children by setting appropriate learning challenges and responding to pupils' diverse learning needs.

Special Educational Needs and Disabilities (SEND)

All pupils have full access to the Science curriculum. Children with SEND issues are involved in planned Science work at an appropriate level, which enables each child to reach their full capabilities.

Pupils showing particular ability in Science are extended in various ways e.g. by being involved in more demanding research and challenges or independently investigating their own questions. If pupils are able or gifted in Science they are placed on the Gifted, Able and Talented Profile.

Achievements are possible for all children and will be celebrated by the school.

Assessment

Throughout each unit assessment for learning is undertaken. Teachers may use opportunities such as Explorify and Cartoon Concepts to support this and to identify then address misconceptions. On week 4 of a unit teachers will use TAPs to check children's current understanding and then tackle misconceptions and/or stretch understanding. At the end of each half term, teachers complete 'SONAR' objectives which are linked with the substantive and disciplinary knowledge progression document,

Science work is marked, following the school's marking policy, according to the learning objective and success criteria, which is written at the beginning of pupils' work.

Throughout the year teachers monitor pupils' scientific skills as well as knowledge. Excellence in Science is celebrated through:

- Displaying Science work
- Certificates in Awards Assemblies.

Reporting and Record Keeping

Teachers record what the pupils know and the skills they have developed. We report on pupils' progress at Parents' Evenings and with a written report which is given to parents at the end of each year. This will focus on the child's knowledge and understanding of Science and the scientific skills they use.

Online Safety

Publishing pupils' images and work:

- Staff and pupils using digital technology will ensure that they inform others before recording them and always use equipment in a respectful manner.
- Written permission from parents or carers will be obtained before photographs or videos are published.
- Where a pupil's work is published the school will ensure that the child's identity is protected.

All pupils use computer facilities, including Internet access, as an essential part of learning, as required by the National Curriculum. All ICT procedures comply with Online Safety guidelines. Both pupils and their parents/carers are asked to sign to show that the Online Safety Rules have been understood and agreed.

Role of the co-ordinator

- Take a lead in policy development and organisation of the Science curriculum.
- Prepare an annual subject action plan.
- Monitor the progress of the Science curriculum and advise the curriculum leads and/or headteacher on action needed.
- Provide support for colleagues.
- Take a responsibility for the purchasing and ordering of resources.
- Keep up to date with developments in the Science curriculum and disseminate information to colleagues as appropriate.

HEALTH AND SAFETY

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