Newburgh
Primary School

Science Policy

Policy on Science

Intent

This policy outlines the teaching, organisation and management of the Science taught and learnt at Newburgh Primary School. The school's policy for Science follows The National Curriculum 2014 for Science Guidelines and the Early Years Foundation Stage Framework and 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 a variety of different scientific enquiries that help them to answer 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.

Aims

We would like pupils to:

- be curious in finding out why things happen in the way they do;
- enquire, explore and observe so that they can ask questions about themselves and the world around them;
- develop confidence and competence in the full range of practical skills, taking the initiative in for example, sorting, classifying, planning, predicting and carrying out scientific investigations;
- work collaboratively, safely and carefully when using materials and equipment;
- use scientific vocabulary with increasing confidence as they progress throughout the school;
- gain secure scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings;
- acquire a progressive understanding of scientific ideas through enquiry;
- foster concern about and appreciation of our environment.

Implementation

To provide adequate time for developing scientific knowledge, skills and understanding, each teacher will provide regular Science lessons. These may vary in length based on the objectives being explored. Teachers will base their planning on the programmes of study for their relevant year groups and will identify the most appropriate teaching strategy to suit the purpose of each learning situation.

Scientific skills and enquiry are at the heart of our Science teaching at Newburgh. For each topic pupils are required to carry out an investigation/s linked to a specific scientific skill. Pupils are encouraged to plan, explore, answer questions, make predictions, draw conclusions and evaluate their investigations.

Our school aims to encourage learning through investigation and theoretical lessons, with an emphasis on first-hand experience. Science lessons typically contain some of the following elements:

- discussion;
- whole class, group or individual learning;
- practical, investigative tasks;
- recording;
- communicating.

Planning

It is the responsibility of the class teacher teachers to undertake the Science planning for their class. The Science Long Term Plan (LTP) includes for each year group, the topic, objectives for skills and knowledge in a sequential progressive ladder for each term. Scientific skills and enquiry types are embedded within each unit of work taught. All Science lessons have focused learning objectives, clear differentiation and success criteria to ensure that pupils make good progress.

The Foundation Stage

Science is an integral part of topic learning and should be embedded by providing a wide range of activities including:

- indoor and outdoor learning;
- adult-focused tasks;
- child-initiated tasks; and
- independent play.

Science is taught through the strand of 'Understanding the World'. Science teaching and learning is also linked to the other strands of The EYFS framework for learning 2014.

The contribution of Science to teaching in other curriculum areas:

Literacy

Science contributes significantly to the teaching of literacy by actively promoting the skills of reading, writing, speaking and listening. Pupils develop oral skills in Science lessons through class and group discussions, recounting their observations of investigations and responding to and answering questions. They develop their written skills through planning, recording their findings and observations and evaluating what they have found out.

Numeracy

Science contributes significantly to the teaching of numeracy by actively promoting the skills of number, data handling and measures. Pupils develop these skills in Science lessons through class and group investigations. Examples of such skills include: drawing graphs, completing tables, Venn diagrams, using equipment to measure accurately, securing number in terms of counting, tallies and calculating averages.

Moral and social development

Science raises many social and moral questions. Through the teaching of Science, pupils 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 in which we manage the Earth's resources.

ICT

Teachers use ICT in Science lessons where appropriate to enhance their learning. Pupils research, communicate, collect and interpret data in a variety of ways.

Inclusion

All pupils at Newburgh are given equal opportunities in all areas of Science. Staff are responsible for ensuring that all pupils, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

Resources

The school holds a central bank of resources. These are organised in boxes in alphabetical order. The Science coordinator(s) are responsible for maintaining this area and ordering any necessary items that have been identified as a need. All staff members have a shared responsibility for collecting and returning necessary items to the correct place to ensure that resources are easy for all staff to access.

Impact

The successful approach of the teaching of science at Newburgh results in a fun and engaging and high-quality curriculum. Class teachers maintain an overview of each child's progress in Science. Assessment in Science can take both formal and informal forms.

Informal assessment is done through observations of the pupils, marking their work and discussion, questioning pupils to identify what they have understood.

Formal assessment or summative assessments in years 1 to 6 is completed by using mind maps and assessments. This enables staff to ensure any misconceptions or gaps in learning are addressed and the pupils' overall knowledge of each topic is assessed.

The pupils will be assessed at the end of each unit taught against the objectives in the Programmes of Study and as stated in the LTP. The teachers will give them a teacher assessed judgment as emerging, developing or secure in knowledge. In the case of scientific skills they will be assessed as emerging, developing, secure or greater depth.

Pupils at Newburgh Primary School will develop:

- A good understanding of the world and how it works
- Meaningful and memorable experiences
- Practical science opportunities and collaborative learning
- Rich vocabulary and understanding
- Opportunities to raise questions, find answers and reflect on their knowledge
- Knowledge, skills and understanding as they progress throughout the school
- An awareness of how the world is changing, the role humans play in tackling environmental issues and how they can help.

Monitoring and review from Subject co-ordinators and SLT

Subject leaders and SLT are responsible for ensuring Science is planned for, delivered and assessed appropriately. In order to ensure this happens, subject leaders and SLT will ensure they:

- provide guidance on the implementation of the Science policy;
- review and evaluate the effectiveness of teaching and learning of Science;
- monitor assessments made through INSIGHT and formal assessments within Science books;
- monitor the LT planning of Science;
- "sample" the work of pupils across the age range (curriculum monitoring);
- coordinate and arrange staff in-service training as required and deliver CPD on Science;
- work alongside teachers in the classroom to deliver effective Science lessons;
- work alongside colleagues in planning and assessing where needed (progress and activities);
- audit resources, identify needs and order equipment in school after consultation with colleagues;
- manage the Science budget.
- Provide an annual report to the HT and Governors on science.