NORTHSIDE Primary School

Science Policy

Last review:
Ratified:
Review:

Rationale

At Northside Primary School, science is all about stimulating children's interests and curiosity in the world and processes around them. To achieve this, science is taught through systematic investigations of the physical, chemical and biological aspects of the world. This relies upon children being exposed to first-hand experiences and other relevant sources of information. Teaching through scientific enquiry allows children to be exposed to processes and problem-solving activities to deepen their understanding of the concepts that they are exposed to. We firmly believe that science should be activity-based, wherever possible, and should engage the children in enquiry and investigation based on their own questions about the topic that they are studying. The main aspects of science to be studied are determined by the programmes of study of the Primary National Curriculum 2014 in key stages one and two.

Key Principles:

- To provide pupils with a thorough understanding of the scientific processes occurring in the world around them.
- To expose children to the wonders of the world around them, utilising the environment to support the children's learning.
- To develop an understanding of scientific enquiry to answer questions about topics.
- To encourage and develop children's interests in science and to encourage them to aspire to find out more.
- To expose children to the work of scientists and learn about the impact of the discovery of scientific processes has had on our lives now and in the past
- To provide children with and encourage the use of appropriate vocabulary related to scientific processes and enquiry.
- To teach children the skills of asking and developing questions, conducting experiments within controlled conditions to answer these questions, evaluate their chosen process and findings, share and interpret their findings to answer their own questions.
- To be collaborative and to ensure that everyone gets involved – for example during Science Week.
- To teach children to work independently when needed to answer their own questions.
- To be well planned by teachers in a creative, fun and interactive way.
- To be practical and hands on, using a wide range of resources to support and inspire children.
- To link with other subjects through the creative curriculum.

Northside Values

RESPECT – children are taught the value of science and its findings. Children are supported in developing an appreciation of how we came to understand the world around us. They are given the chance to use similar techniques to find answers to their own questions.
PRIDE – the teaching of science at Northside gives children opportunities to experiment and find things out for themselves. First-hand experiences give children ownership of their learning.
INCLUSION – the work of scientists from all cultures, beliefs and backgrounds are highlighted and shared with children through the range of topics that they study each year.
CHALLENGE – in science lessons, children are able to choose the level of challenge that they would like to complete. They are also able to answer their own questions by means that they find engaging or challenging.
CREATIVITY – children are able to design and conduct their own experiments. During science week, children are encouraged to create their own experiment and apply their knowledge of scientific enquiry to conduct the experiment.
RESILIENCE – resilience is promoted through children being taught the process of conducting experiments – from the hypothesis being created, the experiment planned, conducted and evaluated, children are able to see a project through from start to finish.

In Practice

Displays

- Northside Science Principles to be displayed in all classrooms. This reflects the whole school principles and rationale for science for all children to be exposed to.
- Science vocabulary is to be displayed for each topic on a working wall/display.

Topic pages

- Topic pages or knowledge organisers are to be used to start each topic to give the children an opportunity to show what they already know, what they want to find out and what questions they have about this topic.

Expectations in books

- Photos of scientific enquiry/experiments to be used to evidence.
- Learning objectives written as questions that will be explored or answered during lessons e.g is ice always a solid? Are fish and insects similar in any way? How does a monorail slow down and stop if it doesn't have any brakes?
- Three way differentiation can be used and should be clearly stated using challenges. Alternatively, all children may be doing the same activity.
- In Key Stage Two, purple pen is to be consistently used to consolidate or move children on. This is expected to be used less regularly in Key Stage One.

Foundation Stage

Science in the Foundation Stage is taught under the umbrella of 'Knowledge and Understanding of the World' from the EYFS framework. The children are supported in developing the knowledge, skills and understanding that helps them to make sense of the

world. Children are able to experiment in a variety of concepts and discuss with adults what they notice and discover.

KS1

In science teaching in key stage 1, pupils should experience and observe first-hand, 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 observe and notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions. Children should be involved in experiment design, conduct experiments and should begin to use simple scientific language to talk about what they notice and have found out. They should be given opportunities to share their findings in simplistic ways.

Lower KS2

In science teaching in lower key stage 2, pupils should be given opportunities 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. Pupils 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. Pupils should draw simple conclusions and use some scientific language to share what they have found out. They should also be given opportunities to evaluate the experiments that they have designed and carried out.

Upper KS2

In science teaching in upper key stage 2, pupils should be given experiences 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, testing ideas about scientific phenomena and relationships and analyse their findings systematically. In 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, how things are linked and interact. 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. Pupils should draw conclusions based on their data and observations, use primary and secondary evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.