Great Steeping, Halton Holegate, Partney, Toynton, Willoughby St Helena's Primary Schools

Policy on Science

Valuing Community, Compassion, Endurance, Friendship, Hope, Respect, Thankfulness, Wisdom

1 Aims and objectives

1.1 Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way that they do. It teaches methods of enquiry and investigation to stimulate creative thought.

1.2 In the teaching of science, we aim to:

- Develop scientific knowledge, skills and conceptual understanding in Biology, Chemistry and Physics
- Build on children's natural curiosity
- Encourage creativity, self-evaluation, perseverance, co-operation and responsibility
- Prepare children for life in an increasingly scientific and technological world
- Develop care and concern for our changing environment
- Provide children with an enjoyable experience of science so that they will have a deep and lasting interest in the subject

2 Teaching and learning

2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes, we do this through whole-class teaching, while at other times, we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Visits and visitors will be used to enrich and engage children's learning. Every child will undertake an investigation within the theme and will formally record the process. (see Appendices for appropriate writing frames)

2.2 In all classes, children have a wide range of scientific abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- grouping children by ability in the room, and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;

We use classroom assistants to support some children, and to ensure that work is matched to the needs of individuals.

2.3 All staff are responsible for ensuring all children are safe during practical lessons. (Refer to "Be Safe – aspects of safety in science and Technology in KS1 and 2" and CLEAPPS manual)

3 Science curriculum planning

3.1 Science is a core subject in the National Curriculum. Objectives from the National Curriculum form the basis for planning and are used in a creative topic based context.

3.2 Our long/medium-term plans give details of the main teaching objectives, ensuring progression and an appropriate balance and distribution of work across each year. These plans are overseen by the Headteacher/Science Leader.

4 The Foundation Stage

4.1 We teach science in Early Years as an integral part of the topic work covered during the year. As these children are part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to developing a child's knowledge and understanding of the world.

5 The contribution of science to teaching in other curriculum areas

5.1 The teaching of science contributes significantly to children's learning in other curriculum areas. For example, children develop oral skills in science lessons through discussions and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and by recording information. When children use weights and measures, they are learning to use and apply number. Through working on investigations, they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers. Science teaching offers children many opportunities to examine some of the fundamental questions in life. 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 for discussion.

5.2 Science and Technology

Technology enhances the teaching of science significantly. Software allows children to investigate processes which it would be impracticable to do directly in the classroom. Children use Technology to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media.

6 Science and inclusion

6.1 At our school, we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

6.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

7 Assessment for learning

7.1 Teachers will assess children's work in science in a variety of ways. Informal observations during lessons and activities by teachers and teaching assistants (see Appendices for group observation sheet), marking and analysis of children's work, answers and comments given verbally by children in structured and play sessions and other evidence are used to inform children's next steps in learning. This helps teachers to make accurate judgements against National Curriculum Level expectations. These judgements are used to track children's progress in science across the school.

7.2 Children's progress is formally reported to parents annually in the form of a school report. Teacher assessments in science are reported to parents at the end of each Key Stage. The school has an open-door policy and parents can approach class teachers and the Headteacher to discuss children's progress at any time.

7.3 Children are encouraged to make judgements about how they can improve their own and each other's work through peer and self assessment and the use of success criteria.

8 Monitoring and review

8.1 The coordination and planning of the science curriculum are the responsibility of the subject leader/Headteacher.

8.2 The quality of teaching and learning in science is monitored and evaluated as part of the school's agreed Development Plan.

8.3 Professional development for teachers and support staff will be identified through Performance Management, data analysis and the school development planning process.

8.4 Science Leaders across the Partnership will work collaboratively to review policy and practices and share ideas, resources and expertise to raise standards in all schools.

8.5 The Governing Body has one member allocated to the monitoring and evaluation of the subject and will, when possible, observe the children's learning on a regular basis.

8.6 This policy will be refined when changes in Government policy make this appropriate.

Science Group Assessment Sheet

Pupil Name	Scientific Knowledge	Use of correct scientific vocabulary	Questioning skills	Predicting	Designing and preparing an investigation	Choosing appropriate equipment or materials	Observing	Fair testing and changing variables	Gathering data/information Measuring	Recording Information accurately and appropriately	Drawing Conclusions	Relate findings to wider scientific knowledge

Upper Key Stage Two
Science Investigation

Name:

AIM

APPARATUS

PREDICTION

FAIR-TEST

METHOD

RESULTS

CONCLUSION

Lower Key Stage Two
Science Investigation

Name:

AIM What do I want to find out?

APPARATUS What things will I need?

PREDICTION What do you think will happen? (And why?)

FAIR-TEST What will I change between tests?

METHOD What am I going to do?

RESULTS What did happen?

CONCLUSION Why did you think this happened? – What does your test tell you?

Key Stage One
Science Investigation

Name:

What I want to find out?

What things will I need?

What do you think will happen? (And why?)

What will I change between tests?

What am I going to do?

What did happen?

Why did you think this happened? – What does your test tell you?