"Developing potential without limitations"

Frieth C.E.C. School
Science Policy

Date implemented : April 2015
Member of staff responsible: Headteacher
Governing body committee responsible: Curriculum

Headteacher's signature ……

Chair of Governor's signature ……..

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Introduction

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science stimulates and excites children's curiosity about phenomena and events in the world around them. It also satisfies this curiosity with knowledge. Through play and observation children are learning scientific concepts from a very early age and because of its practical nature, science can engage learners at many levels. Children learn to question and discuss science-based issues that may affect their own lives and the direction of society and the future world.

Vision statement

"We are a close Christian community; nurturing, inspiring and celebrating all individuals. Through creative learning we encourage greatness by developing potential without limitations"

Values:

These are the Christian Values that you believe are both taught and learnt in our school. To be:
Sharing and caring
Gentle and Kind
Honest and Truthful
Challenging and Responsible

Aims

The 2014 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 science enquiries that help them 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 our approach to Science we aim to:

1. Give every opportunity to relate Science to everyday life and to consider the sensitivity needed when working with living things and the environment.
2. Encourage every child to investigate, question and discuss in order to acquire scientific knowledge, understanding and skills.
3. Encourage children to hypothesise and to find ways of testing their ideas to provide evidence to support their ideas.

4. Teach scientific vocabulary and to use a variety of ways to present the results of their investigations.
5. Promote key skills by offering a range of contexts for the development of:
    - Literacy – communicating facts, ideas and opinions
    - Mathematics – application of number through collecting, considering and analysing data
    - IT – through using a wide range of ICT
6. Through a cross-curricular approach to learning, provide opportunities to learn about aspects of personal, social and health education (PSHE) and citizenship.
7. Ensure children recognise hazards and risks when working with living things and materials and agree safety rules.
8. Provide opportunities that engage the children in relevant, interactive first hand experiences.
9. Encourage children to work co-operatively and collaboratively, developing their confidence in communicating ideas.

Objectives

We will fulfil these aims by:

1. Using the rich and stimulating environments that surround our school to enable us to provide opportunities for learning about life processes and living things, through observation, questioning and wonder.
2. Providing a wide range of interactive, practical activities for individual and group work that encourage the children to explore and find out and develop their understanding of key scientific ideas and make links between different experiences.
3. Developing the children's investigative skills and understanding of Science through the use of questioning and giving them opportunity to express their findings and ideas to their peers and a wider audience.
4. Planning opportunities to develop skills predicting, asking questions, making inferences, drawing conclusions and making evaluations based on evidence and understanding.
5. Teaching scientific and mathematical language, including technical vocabulary and conventions, and drawing diagrams and charts to communicate scientific ideas.
6. Planning opportunities to extract information from sources such as reference books or IT, as well as through science visits and visitors to school.
7. Working collaboratively in pairs or groups, listening to and sharing ideas and treating these with respect.

Statutory Requirements

Early Years Foundation Stage

Children entering school will be expected, by the end of their first year, to have made good progress towards (and where appropriate beyond) the early learning goals as outlined in the Statutory Framework for the Early Years Foundation Stage (2012). Opportunities for developing scientific knowledge and skills will be given as set out under the area of learning called *Understanding the World*. This area of the Foundation Stage prepares children for scientific learning in Key Stage 1 and is consistent with the National Curriculum 2014.

National Curriculum

At Key Stages 1 and 2 the programmes of study set out what the children should be taught and are expected to know by the end of each Key Stage. Although the National curriculum sets these out within distinct year groups, schools are only required to teach each relevant programme of study by the end of the key stage. Therefore, as a school with a creative curriculum and mixed age classes, we plan the programmes of study to work within our 4 year rolling curriculum plan. (see curriculum policy)

The Programme of Study for each key stage identifies four areas of science that children study.

- Biology
- Physics
- Chemistry
- Working scientifically

Although described separately, 'Working Scientifically' **must** always be taught through the other three identified areas. Science is also supported through the use of ICT.

Organisation

The Science scheme of work is developed through two or three topics a term at Key Stages 1 and 2 to ensure that the programmes of study are fully implemented into the Creative Curriculum and opportunity is given to reach the attainment targets.

Assessment

At the Early Years Foundation Stage, assessment is through observation and is mainly formative. The Foundation Stage Guidelines offer examples of what children do to help identify when knowledge, skills, understanding and attitudes have been achieved by individuals or groups of children to inform planning for the next stage in the children's learning. Children's progress in Science will be reported to parents in the end of year school report under the heading of *Understanding the World.*

APP is used to assess scientific knowledge, skills and understanding for individual children. Individual pupil progress is tracked using tracking ladders. This highlights children who are on track, as well as those children exceeding or not meeting their predicted targets.

Observations during practical work and discussions help us to make informed judgements about children's understanding in Science.

In line with the National Curriculum, assessment at the end of Key Stages 1 and 2 is based on teachers' assessments of the children's progress in the four areas of study. SATs can be completed at the end of KS2 in a sample of schools at this time. The results are recorded by County and are reported to parents during the Summer Term.

Resources

Science resources are easily accessible to all staff. The majority of equipment is stored centrally in the large loft area. Children have access to a range of science books in the library. The outdoor school environment is used throughout the year by all year groups.

Monitoring and Evaluation

The Senior Leadership Team monitors the Science Assessment Trackers on a termly basis in order to identify trends in pupil progress and identify any individual pupils who may need further support. Pupil progress meetings are held on a termly basis. They also follow a programme of monitoring that includes classroom visits, book scrutiny, planning scrutiny and learning walks. Where appropriate, RAISEonline is used to monitor trends and make comparisons. A governor responsible for monitoring Science will work alongside the co-ordinator to ensure the policy is being followed to successfully deliver the planned outcomes.

Health and Safety

Health and Safety is an integral part of teaching. As teachers and citizens in a dangerous world, we have a responsibility to encourage children to approach hazards in a safe way. There are few risks associated with Primary Science, but children should be taught the importance of safety and the correct way of handling tools, materials and equipment. The school follows the Buckinghamshire County Council Health and Safety code of Practice for Primary science which is stored in the School Health and Safety file. Further advice is also available on the CLEAPS website. http://www.cleapss.org.uk/primary/primary-resources/primary-guides?start=10.
Children are not allowed to visit the pond area unless they are supervised by an adult.

Equal Opportunities

All children are valued for themselves and taught as equals regardless of race, gender, ability or disability. Through planning the Science curriculum with differentiated tasks, either by task or outcome, all children have access to the curriculum, including children with Special Educational Needs.

Related policies

Learning and teaching
Assessment
Curriculum
Health and Safety
Literacy
Numeracy
Computing
Equal Opportunities