



NORTH FERRIBY C E PRIMARY SCHOOL

SCIENCE POLICY

Date of New Policy:	Autumn 2016
Review Date:	Autumn 2018
Policy Type:	School
Co-ordinators:	Lisa Chappelow
Link Governor:	Angela Clough
Committee:	Curriculum

Mission Statement:

**A Christian School with children at
its heart.**

Christian Values Statement:

At North Ferriby CE Primary School, we keep Christian values at the heart of our school community where we live, love and learn together.

Ethos Statement for North Ferriby CE VC Primary:

Recognising its historic foundation, the school will preserve its religious character in accordance with the principles of the Church of England and in partnership with the Church at parish and diocesan level.

The school aims to serve its community by providing an education of the highest quality within the context of Christian belief and practice.

It encourages an understanding of the meaning and significance of faith and promotes Christian values through the experience it offers to all its pupils.

YORK DIOCESAN BOARD OF EDUCATION

1. Introduction:

This policy reflects the school's values and philosophy in relation to the teaching and learning of Science. It sets out a framework within which staff can operate and gives guidance on planning, teaching and assessment. Science for children is the exploration of the world around them through investigation.

The policy should be read in conjunction with the Programmes of Study for Science in the National Curriculum, which set out in detail what pupils need to be taught.

2. 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 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.

Science is a core subject within the National Curriculum. The aim of Science within North Ferriby Primary School is:

- to develop questioning and enquiring minds through a range of enjoyable and interesting experiences, aiming to satisfy their natural curiosity and answer some of their many questions about the world around them,
- to develop scientific knowledge and conceptual understanding,
- to develop understanding of the nature, processes and methods of science,
- to ensure that pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

This will be achieved by:

- Helping children develop the skills to make systemic enquiries
- Providing opportunities for children to apply theoretical ideas to the solving of practical problems, and look for links and patterns in their Science work.

- Developing a respect for the views of others, their property and work, and learn to work co-operatively with others and share ideas.
- Enabling children to develop an increasing attention to accuracy, including the correct use of, and the building of, extended specialised scientific vocabulary and technical terminology.
- Drawing conclusions from their findings, and record their findings, where appropriate, using methods relevant to their age and ability.
- Teaching the children to apply their mathematical knowledge to their understanding of Science.
- Helping children to see their learning in the context of the world around them.

The teaching of Science should also develop the key skills of:

- Discrimination
- Communication – including Listening and Talking
- Relating to Others
- Self discipline
- Manipulation

3. **Planning:**

LONG AND MEDIUM TERM PLANNING

Topics are decided upon a year group basis with reference to the school's long term plan. At Key Stage 1, each Programme of Study will be revisited annually. Within Key Stage 2, each Programme of Study will be revisited every two years. Where cross-curricular planning is not possible, Science should be approached as a 'stand-alone' topic, to ensure complete coverage of the Science Programmes of Study.

SHORT TERM PLANNING

Planning is used to:

- Set clear, learning objectives and achievable goals.
- Ensure work is matched to pupils' abilities, experience and, where possible, interests.
- Ensure progression, continuity and subject coverage throughout the school.
- Develop assessment procedures to provide criteria for evaluation of teaching and learning involving all staff.

4. Links with other Curriculum areas:

Wherever possible, the science topic will be matched to the overall planning and will be taught as an integral part of the Topic approach adopted within the Key Stages throughout the school, allowing for a maximum of cross-curricular planning.

5. Assessment:

Assessment is used to:

- Provide diagnostic information about individuals/groups
- Plan future teaching and learning
- Provide summative information for teachers•
- Provide information for parents on the progress of their child.

6. The Role of the Coordinator:

- To liaise with colleagues in order to ensure that the science delivered throughout the school is in line with the current National Curriculum requirements
- To facilitate the curriculum planning process in co-operation with other subject co-ordinators
- To offer advice, support and current information to colleagues
- To order and maintain Science resources for staff and pupils throughout the school.
- To advise colleagues on aspects of health and safety relevant to the delivery of the science curriculum

7. Health and Safety:

When carrying out scientific investigations, certain work could create a potential hazard. The following notes give guidance to teachers who are carrying out scientific investigation within both Key Stages 1 and 2.

- If testing is necessary only those chemicals normally used in household cooking e.g. salt, sugar, flour and bicarbonate of soda, should be used under the careful supervision of the teacher. NOTE: children must be made aware that they should NEVER taste materials used in scientific experiments, even when they are substances normally found in a kitchen, unless they are specifically told to. Often the purity/lack of contamination cannot be guaranteed and this is good practice for later years at school.

- Some household chemicals commonly in use and others used in crystal gardens e.g. copper sulphate and washing soda, can present a hazard and great care must always be taken.
- Although glassware will have to be used in certain circumstances, such as to demonstrate condensation, it is recommended that whenever possible substitutes should be used, e.g. plastic beakers, tin lids etc.
- Normally an electric kettle should be used to obtain supplies of hot water.
- If a candle is used it should be placed in a holder that will prevent it from falling and this should be placed on a large metal tray filled with sand. This should only be used under direct supervision by the teacher. A bucket of water should be readily available. Children with long hair should be instructed to tie it back securely.
- Dry cells should be used to supply electricity for simple experiments. Batteries should be checked for leakage before use. Rechargeable batteries are not to be used. If their terminals are 'short circuited' by being joined with a length of wire, for example, a good deal of heat will be produced and it could cause a fire.
- Personal Hygiene – many dangers can be eliminated if the children wash their hands immediately after experiments are carried out.

THE USE OF MICRO-ORGANISMS WITHIN SCHOOL

It is natural that during science studies it may be sensible and exciting to show children certain micro-organisms such as moulds on bread or cheese. Baking will be carried out which will possibly lead to a study of baker's yeast and its use in bread making.

A hand lens or simple microscope may be used to look at the material and further studies may develop for instance with respect to the use of moulds in cheese or on bread. A mould garden using bread on a bed of moist sand in a large screw-topped jar may be used to show the variety of colonies that can develop. Consult the Science Co-ordinator about the disposal of such materials.

It is neither advisable nor necessary to attempt to pursue things any further than this at Key Stage 1.

In years 5 and 6 children are expected to investigate micro-organisms and may carry out further investigations on the growth

of moulds on food and the effect, for instance, of different growth conditions. These must always be carried out in sealed containers because of the risk of large numbers of spores being released into the air. This may induce an adverse response in some people e.g. asthmatics.

During the primary school years the stress will be on observation and the carrying out of simple experiments. Cultures must not be grown on petri dishes since the appropriate conditions for safe handling and disposal of the sort of organisms that might appear on a growth medium are not to be found in school.

8. Equal Opportunities:

It is the responsibility of all teachers to ensure that all pupils irrespective of gender, ability, including gifted children, ethnicity and social circumstance, have access to the curriculum and make the greatest progress possible.

9. SEND:

All pupils should have access to a broad balanced curriculum, which includes Science, and should make the greatest progress possible. This requires that the work offered be adequately differentiated at an appropriate conceptual level for each child, to allow access to the learning process. Further details are contained in the school Special Educational Needs Policy.

10. Christian Values:

Our core Christian values are Friendship, Forgiveness, Trust, Service and Creation. Examples of how some of these values are explored through the Science curriculum are as follows:

- **Friendship forgiveness and trust** are explored by working on projects together in teams
- **Creation** is explored by drawing conclusions, looking for alternative answers to questions, and looking at how science can affect our lives.

11. Skills for Life:

Pupils develop:

- Investigation and problem solving skills
- Understanding of the world we live in

