



Diocese of Norwich
Education and
Academies Trust

Churchside Federation

Science Policy

Adopted: June 2018

Introduction

This policy has been written in accordance with the requirements of the National Curriculum. It provides a statement and reference for the Science that is taught through the Federation. It has been compiled by the Science co-ordinator.

'Maintaining curiosity' in Science is a key focus of the 2014 National Curriculum and so this is central to the teaching of Science across the Federation. Additionally, this policy is to be used in conjunction with the Curriculum Policy and includes the same aim of fostering a life-long love of learning through adopting a cross-curricular approach to learning.

Science within the Curriculum

The 2014 National Curriculum sets out why Science is taught in schools:

'A high-quality Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of Science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how Science can be used to explain what is occurring, predict how things will behave, and analyse causes.'

Aims

Our Creative Curriculum approach aims to provide a broad and balanced curriculum and the methods of delivery in Science are as follows:

- Involving the children in the planning and the direction the learning takes. Children are given opportunities to develop and maintain a high level of curiosity by asking questions and attempting to answer them through their own planning, and undertaking, of experiments.
- Developing children's scientific skills as effective, powerful learners.
- Developing a sense of community and belonging, contributing to our community through direct interaction – making links with local organisations.
- Equipping children with skills for life, through practical work.
- Providing opportunities for children to extend their learning inside and outside of the classroom.
- Making learning more meaningful, through putting it into context.
- Establishing cross-curricular links to foster a broader understanding.
- Build up children's confidence and motivation to learn through the use of a range of learning and teaching styles.

Teaching and Learning

As in all subjects, we aim to cater for each individual, taking particular account of any specific needs or abilities. We endeavour to ensure that all our children fulfil their potential and, within this context, we emphasise health and safety, enjoyment and achievement and the beginnings of responsibility for themselves and others. These skills will be carried forward to the next phase of education and throughout life.

We achieve this in a variety of ways by:

- Setting common, open-ended tasks to elicit a variety and depth of response; setting tasks of increasing difficulty, scaffolding where appropriate;

- Providing practical opportunities for kinaesthetic learners; Using visual stimuli and artefacts to promote interest;
- Having a hook to engage children and allow them to guide the learning;
- Using trips and visitors to further understanding;
- Providing a learning environment that promotes high challenge and low threat;
- Providing stimulating and inspiring projects.

We ensure that all objectives in the National Curriculum (2014) are covered through our creative curriculum.

Planning

To achieve structured progression in Science, all teachers must plan and record what they teach in sufficient detail. In all activities appropriately differentiated tasks must be set. Learning objectives should be clear, with a focus on either content or a specific scientific skill to be learnt. Children should have a clear understanding of the learning objective and, at the end of the lesson, whether they have achieved it (this could be broken down further into succinct success criteria). Planning should incorporate opportunities for children to ask questions and maintain a high level of curiosity.

Long term planning is set around the theme for each half term. If this does not fit neatly in with the Science topic, then Science should be taught as a discreet subject outside of the theme.

Medium term planning should be based around the children's curiosity for the subject and, where possible, experiments planned around investigations suggested, at least in some part, by the children themselves. The level of independence within the tasks should increase in each year.

Cross-curricular links

Regular opportunities will be made within Science to develop the children's reading, writing and mathematical skills through writing tasks, debates, links to scientific stories and non-fiction texts and through the use of databases and various methods of reporting for results.

Where possible, teaching in Science will also:

- Advance the children's Geographical knowledge. For example, the children's understanding of tectonic plates and activity, and of the water cycle.
- Aid the teaching of Physical Education through a clearer understanding of how their bodies work.
- Support the children's emotional and social development through the use of group work and active debates.
- Support the children's technological knowledge through the use of appropriate computing software.

Further cross-curricular links will be made depending on the creative theme chosen per half term.

Assessment

Science is to be assessed in accordance with DNEAT guidelines and should follow the same structure as Mathematics and English. Science should be assessed every half term and should be inputted onto Pupil Asset. The assessment of the children will be based on their

class work and any teacher assessments. The children will be categorised as: below, working towards, just at, securely at and working at greater depth. This data will be checked and collated by the Science co-ordinator to inform further subject development.

As with other subjects, assessment should continually inform teaching and teacher's plans will be such that they are adaptable depending on the analysis of this assessment.

Marking should inform assessment as well as furthering the children's learning through deep questioning.

Moderation

Work will be moderated termly across the Federation to ensure full curriculum coverage, provision for all pupils including differentiation and adequate assessment.

Inclusion

Teachers plan their Science lessons in accordance with the needs of all children in their class. They adapt their planning yearly to meet the variety of needs and make provision for children with SEN, EAL and those who are working at greater depth. Teachers are to have high expectations of all pupils, regardless of ability.

Children with SEN/EAL

Children with SEN/EAL are able to work at an appropriate level through differentiation of both task and outcome. Differentiation could take the form of word banks, sentence starters and teacher/TA support but should not be restricted to this. Children with SEN/EAL should still be given the opportunity to design and undertake their own investigations thereby fostering their own inquisitiveness.

More able pupils

Pupils who are identified as more able should be set a range of activities to extend their scientific knowledge within different contexts, exploring their own ideas about how the world works. They should be given opportunities to select appropriate equipment for investigations and to coach others in investigation technique alongside specific scientific knowledge.

Health and Safety

All teachers will ensure that the safety of the children is considered when experiments are undertaken.

Apparatus and equipment is to be checked regularly to ensure it is in working order and is safe to use.

Staff are to ensure that they are working with the Primary Curriculum Code of Practice in mind when assessing risks related to their lessons. Please see below for Science specific advice.

In addition to the control measures described in the Risk Assessment Checklist (Primary Curriculum), all staff should refer to [Primary resources available on the CLEAPSS website](#). Password details can be found in the current CLEAPSS Primary Science and Technology newsletter.

Chemicals

In general there are few risks to using or investigating chemicals in primary science activities. Controls for specific chemicals/curriculum activities are contained in 'Using Chemicals Safely' (CLEAPSS document G5p).

It is unusual for a primary science activity to require eye protection. Consider whether the activity is appropriate for the primary environment. If in doubt, call the CLEAPSS Helpline on 01895 251496.

A new system for labelling chemicals with their hazards is being introduced throughout Europe from December 2010 to 2015. Schools will already be receiving chemicals labelled with the new diamond-shaped hazard symbols and new hazard information.

In primary schools the comparatively small quantities used alongside appropriate general control measures will ensure that the risk is low. See CLEAPSS document GL101 'GHS (Global Harmonised System)/CLP (Classification, Labelling and Packaging) Chemical Hazard Labelling'.

See also guidance on [Hazardous Substances and Chemicals on Schools' PeopleNet](#).

Animals

Primary schools often keep their own animals, but animals are also brought into school for short periods. Some schools also keep chickens.

Animals kept in schools should pose insignificant hazards provided they are well kept in suitable housing, the people in charge of them are familiar with any particular requirements the animals have and if the general precautions listed in the Risk Assessment Checklist (Primary Curriculum) are followed.

These CLEAPSS documents provide guidance on animals in schools:

- 'Housing and Keeping Animals' (L56)
- 'Bringing Pets and Other Animals into Schools' (PS 55)
- 'Farm animals in school and on visits (Primary)' (PS 86A)
- 'Incubating and Hatching Eggs' (L71)
- 'Aquaria in Primary Schools: Electrical Safety' (L124)
- 'Giant African Land Snails' (L197)
- 'Giant Millipedes' (L201)
- 'Bees and Beekeeping in Schools' (PS 87)

See also guidance on standard infection control procedures in the [Infection Control policy \(P645\) on Schools' PeopleNet](#).

Plants

Some pupils may be particularly vulnerable to certain plants, e.g. those with allergies or asthma. However, the risks are low if the general precautions outlined in the Risk Assessment Checklist (Primary Curriculum) are followed. The plants listed below are classed as poisonous. However, instances of serious harm are extremely rare.

Schools should not remove plants listed in the tables below simply because they are classed as poisonous.

Garden and hedgerow plants	
Black bryony	Ivy berries

Black nightshade – especially unripe berries	Larkspur leaves and seeds
Bluebell	Lily of the Valley
Bracken	Lupin
Buttercup	Mistletoe leaves and berries
Christmas rose	Monkshood or aconite
Cuckoo-pint	Potato – except the tubers
Daffodil – all, especially bulbs	Ragwort
Deadly nightshade	Rhubarb – except leaf stalks
Foxglove	Snowdrop – all, especially bulbs
Giant hogweed	Tomato – except fruits
Hemlock	Tulip bulbs
Henbane	White bryony
Iris and ‘flags’, all but especially rhizomes	Woody nightshade – all, especially berries
House plants	
Castor oil plant seeds	Hyacinth bulbs
Dumb cane	Poinsettia leaves and flowers
Trees and shrubs	
Broom seeds	Privet – all, especially berries
Cherry laurel leaves and fruits	Rhododendron leaves and flowers
Holly berries	Snowberry fruits
Horse chestnut leaves, flowers and ‘conkers’	Spindle tree
Laburnum – all, especially seeds	Yew – all, especially seeds
Vegetables and fruit	
Beans – French and red kidney, raw or undercooked	Rhubarb – leaves
Potato – all green parts, including tubers	Tomato – leaves

Ponds and Environmental Areas

The County Council has adopted guidance on pond safety produced by RoSPA (Royal Society for the Prevention of Accidents) as its standard for safe practice.

See the [RoSPA website](#) under 'pond dipping' for guidance on risk assessment of school wildlife ponds and pond dipping. See also [RoSPA guidance on 'Pond & Garden Water Safety'](#) for details on pond construction, mesh, grilles and fencing.

Role and responsibilities of the Science Co-ordinator

The Science co-ordinator will:

- keep up-to-date with any possible community links to do with Science and will plan trips and visits when possible;
- keep up-to-date with subject and curriculum developments;
- complete a regular resources audit to ensure equipment is available and in working order;
- collate and analyse data and use this for further subject development across the Federation;
- support colleagues with planning and teaching of Science;
- ensure that all aspects of the policy are put into practice;
- revise the Science policy when necessary.