Hazel Slade Primary School
Science Policy

Rationale:
Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

Principles for the Teaching and Learning of Science at Hazel Slade
At Hazel Slade we know that amazing Science teaching and learning occurs when:

- Children are engaged and eager to learn
- Learning is memorable and rich
- All children develop skills and understanding progressively across school
- Children are prepared to "have a go" and learn from their mistakes
- Children and staff celebrate their science learning
- Children know how well they are doing in their science learning and know how to get better
- The curriculum gives opportunities that nurture curiosity and imagination
- The majority of children make at least good progress in science compared with their starting points
- Basic skills e.g. speaking and listening, mathematics, literacy and ICT skills are applied with real purpose in science learning.
- Children learn to identify hazards and reduce them to lower the risk so that themselves and others can learn more safely

The school adopts school-wide *Principles for Teaching and Learning Science,* which have been created through an amalgamation of contributions from staff, governors and pupils.

Organisation and Methodology:
There is a whole school approach to planning and assessment, based on the National Curriculum 2014 and organised. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the Programmes of Study in the Science National Curriculum 2014, children will acquire and develop these skills throughout their Primary years.
We believe that science promotes communication in a specific and precise language involving mathematical and logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving.
In science, pupils are encouraged to be open-minded and to try and make sense of what they see and find out.

Programmes of Study:
Provision is made for different ages and levels of ability.
Children are given opportunities to:

- Take increasing responsibility for their work.
- Work independently and in groups.
- Be involved in tasks of varying duration.
- Undertake teacher directed and child initiated tasks.

Children undertake a range of activities designed to enhance their scientific knowledge and understanding including

- planning experimental work, obtaining, considering and presenting evidence. **Scientific enquiry** should include: observations over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing and research using secondary sources.
- Using ICT where appropriate.
- Evaluating their work.
- Taking part in investigative activities both in the local and wider environment.
- Undertaking trips and visits where appropriate.

All children, regardless of race or gender, will have equal opportunities to participate in all activities.
Positive attempts will be made to develop and use a wide range of resources and activities, which reflect the interests, and cultural background of all pupils.
Appropriate provision will be made for children with special educational needs.
Individual staff expertise and skills will be utilised to the benefit of both children and staff.
Careful monitoring and evaluation of policy will be undertaken to ensure maximum effectiveness.
The help of parents and other interested people will be encouraged and used where appropriate.

Content:
Statutory requirements are laid down in the Science National Curriculum 2014,
For KS1 there is one 2-year planning cycle, and in KS2, there are two 2-year planning cycles – Lower KS2 and Upper KS2.

During the KS1 2-year cycle, Year 1 key concepts in the areas of PLANTS, ANIMALS INCLUDING HUMANS, EVERYDAY MATERIALS and SEASONAL CHANGES are covered, along with Year 2 key concepts in the areas of PLANTS, ANIMALS INCLUDING HUMANS, USES OF EVERYDAY MATERIALS and LIVING THINGS AND THEIR HABITATS.

During the Lower KS2 2-year cycle, Year 3 key concepts in the areas of PLANTS, ANIMALS INCLUDING HUMANS, ROCKS, LIGHT and FORCES AND MAGNETS are covered, along with Year 4 key concepts in the areas of ANIMALS INCLUDING HUMANS, LIVING THINGS AND THEIR HABITATS, STATES OF MATTER, SOUND and ELECTRICITY.

During the Upper KS2 2-year cycle, Year 5 key concepts in the areas of ANIMALS INCLUDING HUMANS, LIVING THINGS AND THEIR HABITATS, PROPERTIES AND CHANGES OF MATERIALS, EARTH AND SPACE and FORCES are covered, along with Year 5 key concepts in the areas of ANIMALS INCLUDING HUMANS, LIVING THINGS AND THEIR HABITATS, EVOLUTION AND INHERITANCE, LIGHT and ELECTRICITY.

Working Scientifically is embedded within the above content. For each science topic covered, planning covers:

- Working Scientifically skills
- Topic related key concepts
- Links with other areas of the curriculum
- Vocabulary to be developed
- Resources required to deliver the work
- Teaching activities
- Health and safety points and risk assessments

Foundation Stage:
We teach Science in the Reception class as an integral part of the topic work covered during the year. As the reception class is 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 (ELGs), which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the ELGs of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water and investigating plants and minibeasts.

Equal Opportunities:
At Hazel Slade Primary School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.

Inclusion:
In school we aim to meet the needs of all our children by differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This enables children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Dyslexia friendly:
In order to accommodate the individual's particular learning style, lessons will be planned wherever possible in a multi-sensory way so that the various activities will cater for all pupils in the spirit of inclusion. There will also be a consideration of how to record lesson outcomes so that each pupil is offered a variety of methods and is not inhibited by any specific difficulty.

Cross Curricular Links:
Teachers will be committed to linking the children's learning in science to other curricular areas through the Mini Adventures planned. Speaking and listening will be actively promoted during scientific investigations. The children develop many of their non-fiction reading and writing skills in science. Mathematical skills such as weighing and measuring are an important part of science lesson. Where appropriate, children will record their findings using charts, tables and graphs using ICT.

Assessment and recording:
Assessment for learning is continuous throughout the planning, teaching and learning cycle. We focus on assessing one science skill at a time, and we assess children's work in science by making judgments as we observe children during lessons, question, talk and listen to children, and review their written work. We also make use of 'End of Topic' assessments. Some class investigations, Science based trips and visitors are recorded in a class "floor book".

Resources:

- Appropriate books will be available in the classroom libraries at all times.
- Children will be taught to use a range of scientific equipment.
- Children will have regular use of ICT resources during science sessions.
- Newspapers, magazines etc. will be used as appropriate.
- Children will have direct access to resources, within health and safety limitations, which they will be taught to use with respect.

Health and Safety:

- A risk assessment will be made, as part of the planning process, before any potentially dangerous scientific activity is undertaken.
- Children will be informed of any risks or hazards but will also be encouraged to assess and identify risks for themselves.
- Children will be shown how to use scientific equipment safely.
- Safety glasses will be used where appropriate.

Staff Development/INSET:

- Opportunities will be taken for staff to undertake training in Science to develop and reinforce knowledge and skills and to review the latest developments.
- Where appropriate staff expertise from within the establishment or from other schools or the Advisory Service will be used to support staff development.
- The Science Leader will be responsible for the development and monitoring of the Curriculum at each Key Stage and attending regular Science updates.

Evaluation:
This policy will be reviewed as and when necessary.
Updated: April 2016
Review Date:April 2017
Reviewed Nov 2017

Lisa Davies

Content:
Statutory requirements, as laid down in the Science National Curriculum 2014, are delivered using North Yorkshire Science Scheme of Learning (NYSSoL).
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During the Upper KS2 2-year cycle, Year 5 key concepts in the areas of ANIMALS INCLUDING HUMANS, LIVING THINGS AND THEIR HABITATS, PROPERTIES AND CHANGES OF MATERIALS, EARTH AND SPACE and FORCES are covered, along with Year 5 key concepts in the areas of ANIMALS INCLUDING HUMANS, LIVING THINGS AND THEIR HABITATS, EVOLUTION AND INHERITANCE, LIGHT and ELECTRICITY.
Working Scientifically is embedded within the above content. Over the course of each term, PLAN, DO and REVIEW skills are focused on in turn. This allows for the progress in each skill to be regularly assessed.
For each science topic covered, planning covers:
- Working Scientifically skills
- Topic related key concepts
- Links with other areas of the curriculum
- Vocabulary to be developed
- Resources required to deliver the work
- Teaching activities
- Health and safety points and risk assessments

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Equal Opportunities:
At Dishforth C of E Primary School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.
Inclusion:
In school we aim to meet the needs of all our children by differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This enables children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.
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