Science Policy for Derrycreha N.S.

Introduction:
This plan was formulated on 18.03.2005 by staff members of Derrycreha N.S.

Rationale:
It was decided to focus on this area for development to comply with the science curriculum and to provide a coherent approach to the teaching of science across the whole school.

Vision:
Science in our school should aim to help children to work scientifically, developing a broad range of skills of enquiry, while cultivating important attitudes and scientific knowledge about the biological and physical world.

Aims:
The aims of science education are:

- To develop knowledge and understanding of scientific and technological concepts through the exploration of human, natural and physical aspects of the environment

- To encourage the child to explore, develop and apply scientific ideas and concepts through designing and making activities

- To foster the child's natural curiosity, so encouraging independent enquiry and creative action

- To help the child to appreciate the contribution of science and technology to the social, economic, cultural and other dimensions of society

- To encourage the child to behave responsibly to protect, improve and cherish the environment and to become involved in the identification, discussion, resolution and avoidance of environmental problems and to promote sustainable development

Objectives:
The science curriculum should enable the child to:

- Develop a knowledge and understanding of scientific ideas through the study of living things and the environments in which they live, energy and forces, materials and processes of change

- Observe, ask questions, discern patterns, hypothesise, plan, experiment, design, make, measure, discuss, analyse and evaluate results and so develop a scientific approach to problem solving

- Communicate and record observations, evidence and results of experiments and investigations using a variety of oral, written and graphical forms and other media

- Understand and apply a safety code in scientific and technological investigations and activities

Curriculum Planning

Strands and strand units

Infant Classes

Strands	Strand Units
Living things	Myself
	Plants and animals
Energy and forces	Light
	Sound
	Heat
	Magnetism and electricity
	Forces

Materials	Properties and characteristics of materials Materials and change
Environmental awareness and care	Caring for my locality

First and Second Classes

<u>Strands</u>	<u>Strand Units</u>
Living things	Myself Plants and animals
Energy and forces	Light Sound Heat Magnetism and electricity Forces
Materials	Properties and characteristics of materials Materials and change
Environmental awareness and care	Caring for my locality

Third and Fourth Classes

<u>Strands</u>	<u>Strand Units</u>
Living things	Myself Plants and animals
Energy and forces	Light Sound Heat Magnetism and electricity Forces

Materials	Properties and characteristics of materials Materials and change
Environmental awareness and care	Environmental awareness Science and the environment Caring for the environment

Fifth and Sixth Classes

Strands	Strand Units
Living things	Myself Plants and animal life
Energy and forces	Light Sound Heat Magnetism and electricity Forces
Materials	Properties and characteristics of materials Materials and change
Environmental awareness and care	Environmental awareness Science and the environment Caring for the environment

It is intended that over a two year period all strand units from each strand should be covered.

Children's Ideas

Children begin from their ideas about how things are and they change and develop these ideas by testing them in practical investigations.

Practical Investigations
Practical investigation is central to scientific activity
Children will learn to investigate the world around them through

- Observing
- Hypothesising
- Predicting
- Investigating and experimenting
- Testing
- Analysing

Classroom Management
The staff of Derrycreha employ a variety of methods for organising learning and teaching. These include whole class work, group activities and individual work.

Key Methodologies
The methodologies and approaches chosen by the teacher should accommodate the different learning styles of the children and should:

- Allow the children the excitement of finding out for themselves
- Enable the pupils to work on their own problems as far as possible
- Encourage children to pose their own questions
- Use children's ideas as a basis for activities. Children should be encouraged to use their own ideas, test and perhaps change their ideas

Among the approaches that are particularly appropriate for facilitating practical work in science are

- The investigative approach

- The teacher-directed approach

Linkage and Integration

The links between science and other curriculum areas are highlighted in the curriculum. Science has special links with SESE, SPHE, visual arts, mathematics and language. (see Teacher Guidelines p 44 + p 45)

Using Our School Environment

From time to time people/groups within the locality are invited to visit the school to talk about environmental awareness, etc.

Balance between Knowledge and Skills

Children use a variety of skills in the different class levels. These include:

- Questioning
- Predicting
- Investigating and experimenting
- Estimating and measuring
- Analysing
    - Sorting and classifying
    - Recognising patterns
    - Interpreting
- Recording and communicating

Assessment

The following are among the assessment tools that we find useful in science:

- teacher observation
- teacher – designed tasks and tests
- concept – mapping

- work samples

Children with Different Needs

Science lessons are organised in such a way that all children can participate as fully as possible.

Equality of Participation and Access

Equal opportunities are given to boys and girls to participate in all activities in our school.

Organisational Planning

Timetable

Junior/Senior Infants	40 minutes per week
First-Sixth Class	1 hour per week

Each class teacher has the option to teach science on a weekly basis or as a block period per month/term.

Resources and Equipment

The following is a list of the resources and equipment within the school:

- Primary Science – Prim – Ed
- Discover Primary Science
- In-Class Educational kit
  - Light
  - Electricity
  - Sound
  - Forces and Motion
  - Magnets
  - Air
- Various CD roms

- Various equipment – posters, bug boxes, charts, etc
- Text books – Junior Classes – All Around Me (Ed Co) – Middle and Senior Classes – Earthlink (Folens)

- Large selection of reference books in class room libraries.

Homework

Depending on the topic being covered, science may or may not be part of the assigned homework.

Individual Teachers' Planning and Reporting

Individual teachers plan using the strand units and content objectives of the science curriculum.

Staff Development

Teachers are encouraged to attend courses in relation to the teaching of science.

Parental Involvement

Where appropriate parents are involved in the science curriculum in our school.

Implementation of Plan

We hope the implementation of this plan will benefit all the pupils in our school.
The plan will be monitored and evaluated as staff become familiar with it.