SN Tulach Uí Chadhain
School Curriculum Plan
Science

Introductory Statement

This policy has been drawn up:

- To provide guidelines for Teachers' and to benefit the teaching and learning of Science in our school.
- To conform to principles outlined in the 1999 Curriculum.
- To provide a coherent approach to the teaching of Science across the whole school.

Vision and Aims

a) Vision

We believe that children of all abilities and all backgrounds will benefit from the study of Science. Science should help the children to develop a broad range of skills of enquiry, cultivate important attitudes and encourage the acquisition of scientific knowledge and concepts about the biological and physical world. The school will promote a shared understanding of the purpose and nature of science and promote a coordinated approach to the planning and teaching of Science throughout the school so as to ensure development and continuity and this will also facilitate the evaluation of teaching resources and methodologies.

b) 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 develop a scientific approach to problem-solving which emphasizes understanding and constructive thinking
- 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 cultivate an appreciation and respect for the diversity of living and nonliving things, their interdependence and interactions
- 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 so promote sustainable development

- To enable the child to communicate ideas, present work and report findings using a variety of media

Content of Plan
Curriculum Planning

1. Science Programme: Junior — Second Classes

Skills development	
Working scientifically	• Questioning • Observing • Predicting • Investigating and experimenting • Estimating and measuring • Analyzing
Designing and making	• Recording and communicating • Exploring • Planning • Making • Evaluating

The science skills above will be developed as work is completed on the strands and strand units of the curriculum outlined below.

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

2. Science Programme: Third — Sixth Classes

Skills development	
Working scientifically	• Questioning • Observing • Predicting • Investigating and experimenting • Estimating and measuring • Analyzing *Sorting and classifying* *Recognizing patterns* *Interpreting* • Recording and communicating
Designing and making	• Exploring • Planning • Making • Evaluating

The science skills above will be developed as work is completed on the strands and strand units of the curriculum outlined below.

Strands	***Strand units***
Living things	• Human Life • 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 and care • Science and the environment • Caring for the environment

Children's ideas:

Children's ideas may be the starting point for scientific activities. Children will be given opportunities to test these ideas through practical investigations.

A wide range of strategies will be used to explore the children's ideas. These strategies may include discussion, questioning, annotated drawings, concept maps, teacher designed tests and tasks.

Practical Investigations:

Science investigations provide children with opportunities to use and apply concepts while solving problems. A combination of open-ended and closed activities will be used. To encourage children to suggest their own investigations, opportunities will be provided for the free exploration of materials.

Practical investigations will require the children to have an understanding of the concept of a `fair test'. Fair testing involves the identification of the conditions that make a difference in an experiment. Pupils will be encouraged to ask:

What is being tested?
What will be changed?
What will be kept the same?
What will be measured or compared?

Classroom Management:

The use of a variety of approaches and methods will facilitate the efficient implementation of the science curriculum. A combination of approaches will be used to meet the needs of pupils and the nature of the topic.
Methods used will include whole class, group and individual work.
The language used will be age appropriate and teachers will identify the vocabulary the children will acquire during the activities in each strand unit.

Key Methodologies:

The teaching methods used in science activities will reflect the key methodologies of the Primary School Curriculum

a) Using the environment
b) Active learning
c) Guided and discovery learning
d) Free exploration of materials.
e) collaborative/co-operative learning.
f) Learning through language.
g) Skills development through content

Activities will be amended as necessary to ensure that all pupils can participate.

Linkage and Integration:

Opportunity for the use of an integrated approach exists in all levels in the science curriculum within the school. The strands and units of the science curriculum are not

discrete — work on a topic or investigation may incorporate strands from other curriculum areas. Teachers will make provision for this linkage in their short-term planning.

Assessment & Record Keeping — Looking at Children's Work:

Children's progress in Science is assessed through:

- Teacher observation
- Teacher designed tasks and tests
- Pupils work samples, projects, portfolios, concept maps and annotated drawings
- Self-assessment
- Conferencing
- Questioning

Information gathered by this assessment will

- Identify areas of difficulty in order to respond to the needs of the pupils
- Establish learning outcomes
- Assist the teachers in assessing their own practice and methodologies
- Assist the teacher with short term planning
- Will form part of the report given to parents in the end of the year reports

Children with Different Needs:

This Science programme aims to meet the needs of all the children in the school. This will be achieved by teachers varying the pace, content and methodologies to insure learning for all pupils and will be recorded in the teacher's yearly notes. The requirements of children with special needs will be taken into account when planning class lessons and related activities. The Special Needs Assistant supports particular children and groups as directed by the class teacher.

Equality of Participation and Access:

We view the Science programme as playing a key role in ensuring equality of opportunity for all children. The programme at each class level will be flexible so that the learning requirements of all children may be addressed. Children with special needs will be included in all activities where possible.

Organizational Planning:

Timetable

As per curriculum guidelines.

Science:3 hours per week/ 1st — 6th Class

2 hours 15 minutes per week/ Junior — Senior Infants

Resources and Equipment:

Science resources and equipment will be stored in a designated area in the school and will be updated and maintained on a regular basis.

Safety:

During practical work teachers should be aware of the safety implications of any work being undertaken. Children should be encouraged to observe safety procedures during all tasks.
The following is a summary of safety issues in the different strands of the curriculum:
Outdoor work should be based in areas that are accessible and safe. Preliminary visit by teachers should be used to identify any possible hazards. When working with plants and animals pupils should wear gloves to protect from allergic reactions. Children should wash their hands after handling animals, plants or soil. Cuts, grazes and skin infections should be covered.
Prior to engaging in any outdoor work the children and teacher should discuss how they will care for the animals and plants they may collect. Children should draw up their own conservation code before working in the outdoor environment.
When engaged in work in the strand unit *Light* the pupils should use plastic mirrors, should not look directly at the sun or very bright beams of light.
When working in the strand unit *Electricity and Magnetism* the children should be reminded of the importance of not using mains current, disposing of batteries properly. *Magnets* should be stored properly to preserve their magnetism. They should be stored with their keepers. Hammering, dropping or heating magnets will cause them to lose their magnetic properties.
When working in the strand unit *Heat* teachers should be careful in organizing activities involving hot water.
During *Designing and Making* activities, teachers should demonstrate and ensure that pupils are able to safely use any tools needed.

Individual Teachers' Planning and Reporting:

Teachers will base their yearly and short-term plans on the approaches set out in the whole school plan for Science. Teachers will report via cúntas míosúil, parent teacher meetings, school reports etc.

Staff Development:

Teachers will be made aware of any opportunities for further professional development through participation in courses available in education centres or other venues.

Parental Involvement:

Parents and other adult members of the school community may be invited to assist with certain activities e.g. outdoor work, Science Day.
Parents and others who have particular knowledge and expertise may be invited to support the class teacher in implementing the science curriculum.

Community Links:

Local specialists may be invited in to share their knowledge with the class.

Implementation:

Class teachers are responsible for the implementation of the Science programme in their own class. Teachers should return equipment to the designated Science area as soon as they have finished using it.

Ratification and Review

This policy was adopted by the Board of Management in April 2023 and will be reviewed every 3 years. The policy has been made available to school personnel, published on the school website and provided to the Parent's Association.

Signed _____ **Date: 19/4/2023**

Chairperson, Board of Management

Signed _____ **Date: 19/4/2023**

School Principal