

Science Policy

Introductory Statement:

This policy was formulated following a consultative process which took place over a period of months after staff attended a Summer Course as part of Professional Development. The Principal and teachers were involved in drafting this policy.

Rationale:

This policy was devised:

- To provide clear guidelines for teachers
- To insure consistency throughout the school
- To conform with legislation
- To Update and Review of existing Policy
- To improve Learning Outcomes and Experiences for Teachers and Pupils.
- To Foster Discovery Learning through Science

Vision and Aims:

Through our school's Science program, we aim to help pupils to come to an understanding of and take an interest in the physical and biological world and environments around them.

We seek to assist the children in our school in achieving their potential, by fostering an inquiry of learning through Science within the school and for use in Real Life situations. To this end we will consciously develop the children's scientific skills as well as their scientific knowledge.

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 emphasises 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 non-living 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
- To promote Gender Equality in the study and practice of Science.
- To become aware of the Skills of working as a Scientist and using these Skill Sets in the wider world, Real Life Science.

Content of Plan

Curriculum:

1. Science Programme: Junior – Second Class

Skills Development	
Working scientifically	<ul style="list-style-type: none"> • Questioning • Observing • Predicting • Investigating and experimenting • Estimating and measuring • Analysing - Sorting and classifying • Recording and communicating
Designing and making	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Myself • Plants and animals
Energy and forces	<ul style="list-style-type: none"> • Light • Sound • Heat • Magnetism and electricity • Forces
Materials	<ul style="list-style-type: none"> • Properties and characteristics of materials • Materials and change
Environmental awareness and care	<ul style="list-style-type: none"> • Caring for my locality

2. Science Programme: Third – Sixth Class

Skills Development	
Working scientifically	<ul style="list-style-type: none"> • Questioning • Observing • Predicting • Investigating and experimenting • Estimating and measuring • Analysing <li style="padding-left: 20px;"><i>Sorting and classifying</i> <li style="padding-left: 20px;"><i>Recognising patterns</i> <li style="padding-left: 20px;"><i>Interpreting</i> • Recording and communicating
Designing and making	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Human life • Plants and animals
Energy and forces	<ul style="list-style-type: none"> • Light • Sound • Heat • Magnetism and electricity • Forces
Materials	<ul style="list-style-type: none"> • Properties and characteristics of materials • Materials and change
Environmental awareness and care	<ul style="list-style-type: none"> • Environmental awareness and care • Science and the environment • Caring for the environment

Children's Ideas:

Work on each topic will draw on experience and knowledge of the class as appropriate.

Practical Investigations:

These will be used as appropriate at each class level. Recording of investigation will be through Photographs/Video, Drawings, Investigation Sheets (Senior Room).

Classroom Management:

Teachers will organise the class as appropriate.

Key Methodologies:

We adapt and modify activities so that they meet the needs of all children in the class;

- Using the Local environment, leading to the Wider World.
- Active learning
- Guided and discovery learning
- Free exploration of materials
- Spiral nature of the curriculum – opportunities to return to earlier learning and to extend and enhance it
- Learning through language, literacy
- Observations

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. Integrate Science Inquiry across the curriculum such as Language, maths, history, art and craft, geography, sport and health education etc.... Reference 'The Fibonacci Project'.

Assessment – Looking at Children's Work:

Children's progress in Science is assessed through;

- Teacher observation
- Teacher designed tasks and tests
- Portfolios and projects copy books or worksheets, Science Log
- Using the Various Assessment Models as outlined on p13 of Assessment Guidelines for Schools .(See Appendix 3)
- ICT – Photos, Video, Scanning.
- S.A.L.F folders

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. This 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 SNA supports particular children and groups as directed by the class teacher. Children who experience bereavement and loss, serious illness or other major personal loss, serious illness or other major personal situations are supported and consideration is given to meeting their individual needs in the most appropriate manner.

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. We provide an equal educational experience for both boys and girls as we recognise that stereotyped expectations of gender roles can inhibit children's educational achievements. Children with special needs will be included in all activities.

Organisation

Timetable:

As per curriculum guidelines;

S.E.S.E 3 hours/ 1st – 6th Class
 2 hours 15 minutes/ Junior – Senior Infants

Resources and Equipment

Science Equipment;

- Magnifier Glasses (Big)
- Box on light
- Box on Electricity
- Box on Energy and Forces
- Box on Magnetism
- Box on Electrical Safety Programme
- Bug Collectors
- Thermometers
- Magnetic set
- Electricity set

Books;

- Earthlinks
- Science Quest Books
- Switch on Science Books
- Science Experiments
- Encyclopaedias for Science
- Real Science for Young Scientists
- Integrating Science Inquiry across the Curriculum
- Discover Primary Science Manual
- Active Assessment-Thinking Learning and Assessment in Science
- QTS Teaching Science in Primary School
- Collins Nature Guides: Garden Wildlife, Birds of Britain and Europe, Wild Flowers of Britain and Europe.
- Science Magic
- Hands on Science-Light and Sound

- Intouch Magazine Folder
- Schofield and Sims: Using Materials; Light Sound and Space, Forces and Electricity, Our Bodies, Changing Materials, Animals and Plants.
- Concept Cartoons in Science Education
- Use of Children's Books with science related topics, eg. The Hungry Caterpillar, looking at the Stars, History Topics relating to Inventions, Discoveries, Planets, Solar System etc.

ICT

- Sci-Spy
- SESE Interactive
- Beir Bua 1 and 2
- Internet site Discover Primary Science and Maths
- Scoilnet
- www.EEEROie (European Space Ed Resource Office)
- www.primaryscience.ie
- www.seai.ie
- www.kscience.co.uk
- 10 best experiments for kids You Tube
- www.verywellfamily.com/top-scienc-websites-for-kids-1259286

See Appendix 1 for further Resources/ Equipment Resources

See Appendix 2 for Teaching Resources/ Planning Resources

Safety:

As per school Health & Safety Policy

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.

See Appendix 2 for Examples of Approaches

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 with special relevant knowledge may be invited into school to speak to children.

Community Links:

Local specialist may be invited in to share their knowledge with the class e.g. heritage in school.

Success Criteria

The success of this plan will be measured using the following criteria;

- Implementation of the Science curriculum will be evident in the teacher work
- Continuity of content and methodology will be evident in teacher's preparation
- Ongoing assessment will show that pupils are acquiring concepts through and an ability to engage with others in a manner appropriate to their age and personality
- Attitude towards Science as Gender Balanced and Equality for Male and Female
- That the Skills of Science are evident in their Science Practices.

Implementation

Roles and Responsibilities:

Class teachers are responsible for the implementation of the science programme in their own class. Science equipment is located in PE/Aistear room.

Review:

2021

Ratification and Communication:

This plan is to be communicated to the BoM and will be ratified before the end of Term 2 2019.

Signed: __Mary Harrington _____ (Chairperson)

Date: ____30th. April 2019_____