

Whole School Plan Science

for

Lurga N.S.
Gort
Co. Galway

Science Plan for Lurga National School

■ Introductory Statement and Rationale

(a) Introductory Statement

This plan was formulated by the staff of Lurga National School after a process of staff consultation and curriculum research.

(b) Rationale

We focussed on this area of planning to ensure that the guidelines for Science continue to be used in our school in an organised, coherent and accountable manner. This plan will benefit the teachers by informing class planning and teaching and will provide the pupils with adequate opportunities to develop skills and understanding of concepts as envisaged by the Science curriculum.

■ Vision and Aims

(a) Vision:

Through our school's science programme, 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 believe that science should be a practical subject with opportunities to engage in hands on investigative work. To this end we will consciously develop children's scientific skills as well as their scientific knowledge. Environmental activities will foster a positive attitude and a sense of responsibility among our pupils for the natural and human environments.

(b) Aims: (Page 11 of Curriculum Statement)

The aims of social, environmental and scientific education are:

- To enable the child to acquire knowledge, skills and attitudes so as to develop an informed and critical understanding of social, environmental and scientific issues.
- To reinforce and stimulate curiosity and imagination about local and wider environments.
- To enable the child to play a responsible role as an individual, as a family member and as a member of local, regional, national, European and global communities.
- To foster an understanding of, and concern for, the total interdependence of all humans, all living things and the Earth on which they live.
- To foster a sense of responsibility for the long-term care of the environment and a commitment to promote the sustainable use of the Earth's resources through personal life-style and participation in collective environmental decision-making.
- To cultivate humane and responsible attitudes and an appreciation of the world in accordance with beliefs and values.

(c) In addition we aim to:

- Maintain a school garden and flower pots as appropriate.
- Integrate other specially designated days and weeks into our school calendar e.g. national tree week, national spring clean week, energy awareness week etc...
- Purchase additional science equipment as required.

Curriculum Planning:

1 Science Programme:

1.1 Strands and Strand Units:

Class teachers prepare a one year plan for each room. We include work from each strand unit for each year. We select a range of content objectives from each strand unit to ensure breadth and balance in Science throughout the class levels. In our planning we include a range of habitat studies based on our immediate environment for each grouping. We use a balanced mix of theme-based approaches to SESE, cross-curricular work and subject-centre focus.

1.2 Children's Ideas:

We use children's ideas as a starting point for all scientific activity
Strategies we use to elicit children's ideas include:

- Talk and discussion
- Open and closed questioning
- Annotated drawings
- Concept maps
- Brainstorming
- Free play with materials

1.3 Practical Investigations:

When planning practical investigations we use

- Open investigations: Pupils are given or may suggest an open question for which they have to design their own investigation.
- Closed investigations: Pupils will engage in activities where the end result is obvious and there are not many variables.
- Fair testing: Pupils develop a sense of what should be kept the same and what should be variable to ensure that an investigation is fair.

We consult the Teacher Guidelines pg 54 in this regard.

1.4 Classroom Management:

- A combined approach of whole class work, small group work and individual work on chosen topics and projects are used in each class.
- Each room has a science display as appropriate.
- We encourage both the investigative approach and the teacher-directed approach.
- Teachers use their professional judgement to decide which methods and approaches are best suited to the needs of their pupils.

1.5 Key Methodologies:

We use the key methodologies of the Primary Curriculum in the teaching of Science:

- Active learning
- Problem solving
- Developing skills through content
- Talk and discussion
- Co-operative learning
- Use of the environment

We have also identified the following as methodologies particular to Science and will employ them where possible

- Free exploration of materials
- Use of everyday objects and materials in the environment
- Outdoor investigation and fieldwork

A methodology we have identified for development is developing skills through content.

1.6 Linkage and Integration:

We encourage the linkage of strands within the science curriculum and the integration of science with other subject areas.

- Human life units on growth and reproduction will integrate with SPHE
- Environmental awareness and care is closely integrated with the SPHE and Geography curricula.
- Design and Make activities will also form part of the Visual Arts content.
- Links with the Maths curriculum are many e.g. graphing results of investigations,
- The strand unit on sound is an integral part of the music curriculum e.g. Sounds in the environment and the designing of musical instruments.
- Various “line of Development” studies in History will lend themselves meaningfully to scientific investigation. E.g. Clothes over the years and materials

1.7 Using the Environment:

We have an environmental audit of the school grounds. Each room will engage in designated habitat studies. Examples may include:

- Wall
- Grass area
- Spring/Summer flowers in grounds
- Seasonal study of a tree in the school grounds
- Minibeasts on concrete surface area
- Study of a logpile/stonepile in school grounds
- Birds in our school grounds
- Vegetable patch in school garden
- Study of field behind school
- Freshwater lake habitat (Lough Bunny)

1.8 Balance between Knowledge and Skills:

Science is not only concerned with the acquisition of knowledge but the understanding of concepts. We nurture this understanding by developing skills of, questioning, observing, predicting, investigating, analysing and recording and therefore acquiring knowledge. Children explore, plan and analyse materials through Design and Make activities.

2 Assessment – Looking at Childrens’ Work:

In Science we assess

- Knowledge
- Understanding
- Skills
- Attitudes
- Ability to work collaboratively & co-operatively

Assessment will be in the form of

- Teacher observation
- Annotated drawings
- Teacher-designed tasks and tests
- Project work

There is opportunity for the pupils to engage in self assessment as they analyse the success of Design and Make activities and get an opportunity to view their own work. Information from assessments will be communicated to parents in the school report at the end of the year and at the parent/teacher meetings.

3 *Children with Different Needs*

It is important that all children experience a rounded environmental education. Science plays a pivotal role in this education and so we do our best to ensure that every child will have opportunities to engage in learning activities appropriate to their abilities.

- Teachers use a mixture of whole-class teaching and group work, with different groups set tasks of various complexities.
- Teachers develop their questioning techniques spanning from simple recall to more complex and analytical skills so that all pupils have opportunities for success.
- Different ways of recording and communicating findings are encouraged: drawing, written records, oral reports and models.
- All children benefit from active involvement in the environment so all are encouraged to participate in fieldwork.
- The exceptional ability child is encouraged to undertake additional research.
- SNA support for children with special needs.

4 *Equality of Participation and Access:*

- All children have equal opportunities to participate in Science lessons and activities.
- Equal opportunity is given to all children to experience all Strands.

Science is for all children regardless of gender, age or ability.

Organisation Planning:

5 *Timetable:*

In keeping with the recommendations in the Primary School Curriculum Introduction (pg 70) a minimum of two and quarter hours per week is devoted to SESE in infant classes and a minimum of three hours per week for classes from First to Sixth. One hour of this time will be spent on Science.

On occasion, time is blocked as appropriate. This might occur when

- Working on a integrated project
- Exploring local environment

Teachers use discretionary curriculum time (2 hours per week) for SESE as appropriate.

6 *Resources and Equipment:*

- We have attached a list of our current resources for science to this plan.
- Equipment and resource materials have been allocated to appropriate boxes for the strands. A list of the contents of the box is attached to the lid.
- The equipment is checked and updated at the end of each year.
- Any equipment purchases are organised by the staff as needed.
- Science boxes are stored in each room. Boxes are returned to storage area immediately after use.
- The school encourages the use of Science websites providing this is within the safe use of the internet guidelines.
- We use textbooks as a resource
- We make use of packs to enhance our teaching of Science
- Environmentalists in the community are asked to talk to the children and share their knowledge with them e.g. Dr. Brendan Dunford, Mr. Zackary Silke, Áine, Nick and Hilda from Coole Park Nature Reserve.

7 Safety:

We have a Health and Safety policy in place in our school which covers safety concerning the handling of equipment and out of school activities such as field work. Teachers are aware of the safety implications of any exploratory or investigative work to be undertaken. Successful and enjoyable investigations require sensible planning, good supervision and adherence to safety rules. Outdoor work is based in areas that are accessible for children, teachers and helpers and that are safe. Preliminary visits by teachers to the site are necessary to identify potential hazards. If there are apparent dangers then a more suitable habitat is selected for study. Habitat studies involve children in working with plants and animals, and teachers are aware that some children may be allergic to some animals and plants.

8 Individual Teachers' Planning and Reporting:

Teachers consult this Whole School Plan and the curriculum documents for Science when they are drawing up their long and short term plans.

Teachers include all the Stands and Strand units every year and select objectives within the strand units each year.

Where it is meaningful and suitable Science is taught in a thematic way to integrate with the other SESE subjects of History and Geography.

Cúntas Míósúil assist in recording work covered, in evaluating progress in Science and in informing future teaching.

9 Staff Development:

- Teachers have access to reference books, resource materials and websites dealing with Science.
- Staff are encouraged to research and try out new approaches and methodologies.
- Teachers are responsible for keeping resource material up to date and arrange for opportunities for resources to be assessed for purchase and for new approaches to be piloted in the school.
- Teachers are encouraged to attend inservice workshops and courses on Science in order to enhance their understanding and teaching of the subject. They upskill other staff in what they have learned by sharing the expertise acquired at these courses.
- The culture in our school is one that encourages the sharing of experience and good practice.

10 Parental Involvement:

Parents are encouraged to come to the school to help out in the delivery of this programme by helping out in supervision of fieldwork when/if needed or taking part in whole school Science activities. Parents are invited to celebrate and view results of projects, surveys, investigations in the school or read about them on the school website.

11 Community Links:

- People in the local community who have an interest and knowledge in the environment are invited to speak to the children.
- The local library and mobile County Council Library a source of knowledge for the children.
- The work of some national agencies relates to aspects of the Science programme. As well as accessing materials produced by these agencies for schools, we welcome visits by speakers from these organisations – Tree Council, Sustain Energy Ireland, Green Schools, Bird Watch Ireland etc...

■ Success Criteria

We shall review this Whole School Plan in the future under the following headings:

- How individual teacher preparation, planning and teaching reflects this plan.
- Are procedures outlined in this plan consistently followed? i.e. procedures for fieldwork, assessment.
- How methodologies listed in this whole school plan are working in the classroom
- Science Resources?
- How well are Scientific concepts being learnt by the children?
- How well are the children's scientific investigation skills progressing?
- Evidence of practical activities in classrooms.
- Evidence of indoor and outdoor work.

Means of assessing the outcomes of the plan will include:

- Revisiting the aims of this plan as a staff
- Teacher/parent feedback
- Children's feedback
- Inspectors reports/suggestions

■ Implementation

(a) Roles and Responsibilities:

The plan will be supported, developed and implemented by all staff members. e.g.

- Scientific audit of school grounds and immediate locality
- Fieldwork trails and packs
- Purchase, maintenance and storage of resources
- Leading the development of new methodologies identified
- Liaising with community organisations and relevant agencies
- The development of ICT as a learning tool in Science and the vetting of websites
- Attendance at upskilling workshops and courses, providing feedback to staff

(b) Timeframe: Reviewed in 2023

■ Review

It will be necessary to review this plan on a regular basis to ensure optimum implementation of the Science curriculum. We aim to review this plan in 2026.


At this time we will refer to the tasks in our action plan and check that they have been completed in accordance with the agreed time frame.

Those involved in the review will be:

Principal
Class teachers
Parents
BOM/DES

■ Ratification and Communication

This plan was ratified by the Board of Management on March 21st 2023.

Signed 

(Chairperson)