

# Whole School Plan for Maths

For  
Lurga N.S.  
Gort  
Co. Galway

## **Maths Plan**

### **Introductory Statement and Rationale**

#### **(a) Introductory Statement**

This plan was first formulated in the year 2011-2012 and revised in 2015 and again in 2022. The Principal and teaching staff of Lurga N.S. worked together to review the existing policy to benefit the teaching and learning of maths in our school and to provide a coherent approach across the whole school in line with the 1999 School Curriculum.

#### **(b) Rationale**

As a staff it is our vision to provide a comprehensive, inclusive and accessible education for all.

- To benefit teaching and learning in our school.
- To conform to principles of learning outlined in the Primary School Curriculum 1999.
- To review the existing plan for mathematics.

### **Vision and Aims**

#### **(a) Vision**

Our school cherishes all pupils equally and, to aid them in achieving their true potential we endeavour in Lurga NS to give each and every child every opportunity to do so. We encourage an inclusive approach to education where diversity is catered for within the school and class setting differentiation is used by the class teacher to foster inclusivity.

#### **(b) Aims**

*We in Lurga NS strive to reach the aims of the Primary School Curriculum for mathematics*

- *To develop a positive attitude towards mathematics and an appreciation of both its practical and its aesthetic aspects.*
- *To develop problem-solving abilities and a facility for the application of mathematics to everyday life.*
- *To enable the child to use mathematical language effectively and accurately*
- *To enable the child to acquire an understanding of mathematical concepts and processes to his/her appropriate level of development and ability.*
- *To enable the child to acquire proficiency in fundamental mathematical skills and in recalling basic number facts.*

**This Mathematics plan will be addressed under the following headings:**

**Curriculum planning**

1. Strands and strand units
2. Approaches and methodologies
3. Assessment and record keeping
4. Children with different needs
5. Equality of participation and access

**Organisational planning**

1. Timetable
2. Homework
3. Resources and ICT
4. Individual teachers' planning and reporting
5. Staff development
6. Parental involvement – home school links
7. Community links

**1. Strands and strand units**

- All teachers are familiar with the curriculum for their class levels. At staff meeting teachers will get the opportunity to study, discuss and share ideas relating to the numeracy as appropriate.
- In order to ensure that this familiarity is maintained if teachers change classes or if new teachers join the staff, we will meet regularly to discuss and share ideas relating to numeracy.
- We will address specific issues relating to multi-class situations on a continuous basis. This will be done during Croke Park meetings as appropriate which are of a whole school and group nature. These meetings will give us ideal opportunities to discuss and enhance our multi-class/split-class approach.

**2. Approaches and methodologies**

*In the mathematics curriculum the strands and strand units are viewed through the lens of the approaches and methodologies.*

## 2.1 General

- All children should be provided with the opportunity to access the full range (all strands) of the mathematics curriculum. *It is important that teachers individual planning reflect the objectives as outlined in the curriculum and not follow a text and that there be consultation between class teachers and LS teachers for those pupils who attend LS.*
- We need to ensure that there is less emphasis and reliance on textbooks and workbooks and more on active learning strategies
- We ensure that the textbooks in use are in line with content objectives for the class level
- Appropriate use of concrete materials is encouraged in all classes. Teachers in the middle and senior classes are reminded of the importance of same.
- Opportunities are provided for all children in fifth to sixth class to use calculators, *e.g. to check answers, to explore the number system, to remove computational barriers for weaker children or to focus on problem solving*
- We ensure that the number limits are being adhered to, particularly at first and second classes where the emphasis is on the development of the concept of place value, *e.g. more work within the hundred square without going past 100* There is an emphasis on simple fraction families in the senior classes
- Pupils will be collecting real data in other areas of the curriculum and using it to represent their findings i.e. using data from other subjects such as geography, history or science to find the answer to a question, gathering data to answer their own questions such as 'Do more/less children walk to school this year than five years ago?' 'What are the three favourite vegetables eaten by children in our class?'
- Estimation skills will be developed and refined with the emphasis on using estimation in all areas of mathematics, *e.g. using estimation in measures, shape and space and not just in number?*
- Estimation skills are encouraged to aid accuracy in problem-solving and computation.

## 2.2 Talk and discussion

### Guided discussion and discussion skills

- Talk and discussion in mathematics is taken seriously and seen as an integral part of the learning process, *e.g. teacher/pupil, pupil/pupil, pupil/teacher.*

- Opportunities are provided for pupils to explain how they got the answer to a problem, discuss alternative ways of approaching a problem or give oral descriptions of group solutions.

### **Scaffolding**

- The teacher actively models the language to be used, particularly when talking through the problem-solving process.

### **Integration**

- Areas in other subjects will be identified where mathematical processes are appropriate and useful, *e.g. gathering data in history and geography, measuring temperatures in science.*
- Opportunities where a thematic approach could be used across a number of subjects are identified.

### **Linkage**

- Opportunities where a thematic approach might be used for linkage are identified, *e.g. when dealing with decimals are we also aware of their use in data – pie charts; measures – all areas but particularly money for introducing decimals.*

### **Mathematical language/symbols**

- **There is an agreed emphasis on the language of mathematics i.e. we do have a list of terminology, language appropriate for each class level**
- There is a conscious effort made to use the children's own ideas and environment as a basis for reinforcing mathematical language, *e.g. you are taller than he is, teacher's table is longer/wider than yours.*
- Teachers will identify common approaches to the language used in
  - Addition – total, sum of, add, and ...
  - Subtraction – minus, subtraction, take-away, difference, less than ...
  - Multiplication – times, product of, multiply, groups of ...
  - Division – divide, share, split, groups of ...
  - Equals – same as, is, will be, answer is, means ...

**Note:** Although the whole-school plan may have identified particular terms to be used at different *class levels*, *care must be taken that children, during their school career, are exposed to the different terms used in relation to the symbols e.g. +, add, plus etc.*

## Number facts

- Children are made aware of the commutative properties of addition, subtraction, multiplication tables and of their relationship with division.
- We teach subtraction and division tables separately to addition and multiplication but we then lead the children to make the connection between them.

### 2.3 Active learning and guided discovery

- There are agreed strategies for teaching:
  - Addition – top to bottom or bottom to top ...
  - Subtraction – use of materials and decomposition (transition boards ...)
  - Multiplication – vertical/horizontal presentation, skip counting, using mental strategies such as identifying doubles, near doubles, multiplying by 5 and 10, using games to reinforce facts, developing and honing estimation skills.
  - Division – concept of sharing, understanding division as repeated subtraction, developing and honing estimation skills.
  - How do we add and subtract fractions?
  - How do we add and subtract time?
- The children are encouraged to develop personal benchmarks, particularly in the measures strand, *e.g. noting their height in relation to a metre, the width of their finger as close to a centimetre, 4 carpet tiles or equivalent covering a square metre.*
- Mathematical games are in use at each level, *e.g. dice, cards, dominoes, spinner games, games devised by the children themselves (middle and senior levels). Children are familiar with how to play them and clear about when they have access to them.*

### 2.4 Collaborative and co-operative learning

- We take steps to ensure that children learn the skills needed to work as a group rather than just *in* a group, *e.g. listening to others, turn-taking, appreciating that others' opinions are important.* These provide opportunities for children to learn from their peers, *e.g. older children supporting younger ones?*
- Each class uses a variety of organisational styles, *e.g. pair work, group work and whole class work.*

## 2.5 Problem-solving

- Children are encouraged to use their own ideas as a context for problem-solving, *e.g. my mammy bought a 2 litre bottle of orange for the party yesterday – was it cheaper than two 1 litre bottles?*
- There is agreement on using strategies such as RUCSAC or equivalent to support children's problem-solving strategies.

*(Alternatives, explanations and examples, including a problem-solving bookmark, are available on the PCSP website [www.pcsp.ie](http://www.pcsp.ie))*

- In making problem-solving more accessible and realistic for children teachers use checkable answers or use a calculator for larger numbers as part of their programme.
- We are providing opportunities for all children, Infants to Sixth class and including those with special needs, to have the opportunity to experience problem-solving activities, *e.g. by giving oral problems; by having them use objects to solve the problem; by using smaller numbers; by using items in the environment, e.g. how many beads can I hold in one hand – a little, a lot, more than teacher?*

## 2.6 Using the environment

- We are using the school environment to provide opportunities for mathematical problem-solving *e.g. putting numbers on doors; marking heights on doors or cupboards which can be used for comparison; having a mathematics displays in our classroom to which children can contribute; using large dice in PE to pick teams; set number of laps to run; using hula hoops for sorting children in the PE hall?*
- Mathematical trails are being developed within or outside of the school building.

## 2.7 Skills through content

- Teachers are making sure that skills are being actively developed through the content. There is evidence to be seen that transfer of those skills is taking place in other areas:
  - **Applying and problem solving**, *e.g. selecting appropriate materials and processes in science.*
  - **Communicating and expressing**, *e.g. discussing and explaining the processes used to map an area in geography.*

- **Integrating and connecting**, e.g. *recognising mathematics in the environment.*
- **Reasoning**, e.g. *exploring and investigating patterns and relationships in music.*
- **Implementing**, e.g. *using mathematics as an everyday life skill.*
- **Understanding and recalling**, e.g. *understanding and recalling terminology, facts, definitions, and formulae.*
- All classes 1<sup>st</sup> to 6<sup>th</sup> encourage the use of mental mathematics (See PCSP website [www.pcsp.ie](http://www.pcsp.ie))

## 2.8 Presentation of work

- There is an agreed approach to numeral formation in the junior classes.
- We provide a variety of options for recording work, e.g. *drawing a picture to show the result; using ICT; using concrete materials to demonstrate how the result was obtained; using a diagram; telling/explaining.*

## 3. Assessment and record keeping

- *The staff looks at results on both a class and school basis to see if there are areas of mathematics that can be improved?*
- There is an agreed whole-school approach to assessment in mathematics. We have agreement on:
  - Ensuring there is continuity and progression from class to class
  - How often tests are given and to which classes?
  - Teacher observation
  - Teacher-designed tests and tasks
  - Work samples, projects etc.
  - Diagnostic tests (mainly resource/learning-support)
  - Standardised tests
- We ensure that a broad range of assessment tools are being used and the information gathered during assessment is used for future planning.
- Standardised Assessment information is shared with parents. They are also informed in times that a child needs additional help in school (learning support) and they are given information on how to support at home (See Parental involvement).
- Children are given feedback and encouraged to see assessment as a positive experience which helps them to attain progress and identify the steps that need to be taken.



- Information is shared with other teachers and with other professionals if necessary.
- The children are involved in the setting of personal targets, *e.g. number facts targets*
- Records are managed and stored in line with the school's policy on record keeping.

#### **4. Children with different needs**

##### **4.1 Children with learning difficulties**

The strategies used by teachers to ensure the participation of children with special needs in relation to mathematics are as follows:

- Children with special needs are provided with access to all strands of the mathematics curriculum insofar as that is possible.
- Teachers in mainstream classes provide a differentiated programme to cater for children with learning difficulties.
- Supplementary teaching is available for children with learning difficulties in mathematics under the general allocation model.
- There are regular meetings to ensure a collaborative approach between the class teacher and the learning-support teacher.
- ICT is used to support teaching and learning.

##### **4.2 Children with exceptional ability**

The strategies used in the school/class to provide challenges for children of exceptional ability are as follows:

- A differentiated programme.
- Independent research projects.
- Use of ICT to support their work.
- Facilitation to work with older/other pupils.
- Arrangements are in place to liaise with their parents.

#### **5. Equality of participation and access**

- Equal opportunities are given to all children to participate in discussions, use of manipulatives, presentations etc.
- All children have access to services, facilities and amenities in the school environment.

#### **6. Timetable**

- All teachers are aware of the time allocation at each level for mathematics.

- When drafting timetables for withdrawal of pupils for supplementary teaching, teachers are including these pupils for as much of the mainstream mathematics programme as possible.
- Timetabling issues are addressed in a multi-class situation in the teacher's individual planning.

## **7. Homework**

- The staff has discussed the purpose of assigning mathematics homework to reinforce work done at school.
- There is a balance in what we assign between written work and active concrete work.
- Homework is differentiated taking into account the range of abilities within the class.
- We ensure that children attending learning-support are not going home with two sets of mathematics homework.
- Mathematics homework reflects, where possible, the active learning approach as described in the curriculum.

## **8. Resources**

### Equipment, textbooks, supplementary materials, calculators

- Mathematics resources/materials are stored in individual classrooms and shared as appropriate.
- Materials, equipment, games, textbooks, supplementary books are selected when funds are available and if teachers identify a need for a particular item or book.
- Specific resources required by the teachers and learning-support teacher are collected and added to their store of materials over the years.

### ICT

- The internet is widely used to support the teaching of Maths. Teachers share expertise as appropriate.
- There is a code of practice to ensure safe Internet usage

## **9. Individual teachers' planning and reporting**

- It is the individual class teacher's duty to ensure that he/she be prepared for the year ahead with their long term schemes and also prepared for their short term planning. Teachers are supported by colleagues in the planning process.
- Cuntais Míosúla are stored in individual teachers folders.

### **Review**

It will be necessary to review this plan on a regular basis to ensure optimum implementation of the mathematics curriculum and SIP in the school.

#### **(a) Roles and Responsibilities**

Those involved in the review will be:

- *Teachers*
- *Pupils*
- *Parents*
- *Post holder*

#### **(b) Timeframe**

### **Ratification and Communication**

Signed   
(Chairperson)

Date: 21/03/2023