



**Whole School Plan
for
Mathematics**

Whole School Plan for Mathematics

■ Title:

*Whole School Plan for Mathematics.
Lucan Educate Together National School.*

■ Introductory Statement and Rationale:

(a) Introductory Statement

The original Maths plan was formulated over a period of months by the teaching staff of Lucan Educate Together N.S. A focus group was appointed in 2008 to work on the details of this plan and subsequently it was revised and reviewed by all teaching staff. A further review took place in September 2013 to address the Numeracy Strategy and our School Improvement Plan for numeracy. This review took place in November 2018.

(b) Rationale

- To review, clarify and up-date the existing plan for Mathematics.
- To re-affirm and promote a thorough, balanced and relevant approach to the teaching and learning of Mathematics in our school.
- To implement the principles of learning, with regard to mathematics, as outlined in the primary school curriculum.
- To incorporate and continue to develop the goals identified and laid out in our School Improvement Plan.

■ Vision and Aims:

(a) Vision

As a child centred, equality-based, co-educational and democratically run school we strive to enable each child to fulfill their potential in the area of mathematics. Central to this belief is our commitment to support each child in using and applying the skills of mathematics in his or her everyday life.

(b) Aims

We endorse 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 each child to use mathematical language effectively and accurately.
- To enable each child to acquire an understanding of mathematical concepts and processes to his/her appropriate level of development and ability.
- To enable each child to acquire proficiency in fundamental mathematical skills and in recalling basic number facts.
- To ensure the use of a variety of approaches and methodologies so that children of every ability can be challenged and stimulated.

Content of Plan:

Curriculum:

Strands and Strand Units:

In order to ensure that all teachers are familiar with the curriculum for their class level this plan is accessible to all staff on the school's computer network.

Curriculum overview. For details of strands and strand units please refer to the Mathematics curriculum document.

CLASSES	PAGE NUMBERS
Junior & Senior Infants	18 – 35
1 st & 2 nd Classes	38 – 58
3 rd & 4 th Classes	62 – 83
5 th & 6 th Classes	86 - 111

School Self Evaluation (SSE):

Improvement targets were identified as follows:

Mathematical Language

- More consistent use of mathematical language in the school
- All children will be aware of the different vocabulary associated with mathematical concepts at each class level.

Problem Solving

- To increase the percentage of pupils reporting that they find maths problems easy by 8% over the next 3 years.
- To increase the percentage of pupils who score above the 85th percentile in problem solving by 5%.

In order to achieve the targets we will:

- Explicitly teach problem solving strategies and encourage the students to use them.
- Increase opportunities for the use of concrete materials to help the pupils make links between concrete work and abstract thinking.

These targets will be consistently monitored, reviewed and adjusted as necessary.

Approaches and Methodologies:

We aim to provide all the children in our school with the opportunity to access the full range and content of the Mathematics curriculum. In order to do this, we make use of the following approaches and methodologies:

1. Talk and discuss

- Guided discussion and discussion skills:

As with all other curricular areas, discussion is an integral part of the learning process of mathematics.

Our teachers will model and encourage use of the following skills:

- turn-taking
 - active listening
 - positive response to the opinions of others
 - confidence in putting forward an opinion
 - ability to explain clearly their point of view
- Scaffolding:
Teachers will model the language and processes used in mathematics. (*e.g. Clue sheets*)
 - Integration and Linkage:
Where it is appropriate, mathematical language and processes will be integrated into other curricular areas. (*e.g. Data*)

collection and interpretation in geography and history.)

Mathematics will also be linked into themed weeks during the school year, where appropriate. *(e.g. Using measuring techniques during science week.)*

Where it is appropriate, mathematical language and concepts should be linked across different areas of mathematics. *(e.g. Using decimals in measures – money, length and weight. Also see Teacher Guidelines pg. 56 for using linkage in the context of a themed approach.)*

- **Mathematical language:**

The use of accurate and appropriate mathematical language will be taught at each class level.

To aid the consistent use of mathematical terms at each class level there are permanent wall displays of mathematical terms in each classroom.

Although particular terms have been identified to be used at different class levels during their time at school, the children will be exposed to all the different terms used in relation to various mathematical symbols and number facts. Children will also be made aware of the commutative properties of addition and multiplication tables and their relationships with subtraction and division.

2. Strategies for collaborative and co-operative learning

- Children will be encouraged to use concrete materials at all class levels
- Teachers will guide the children to explore a variety of paths to an answer / solution
- Investigative work
- Maths trails
- Practical application of maths eg timetables, shopping, tessellations.
- Games – children will play games at every level to develop problem solving strategies.
- Maths displays – there are differentiated Maths displays around the school for group problem solving.
- Estimation - emphasis will be placed on the development of estimation strategies.

Estimation procedure will be taught:

- estimate first
- write down your estimate
- solve the problem
- compare your estimate with the actual result

Estimation Strategies in the Teacher Guidelines Pgs:32/33 include:

- Front-end strategy
- Clustering strategy
- Rounding strategy
- Special numbers strategy

3. Using the environment

- Discussing and interpreting symbols in the environment will be used as a starting-point for introducing mathematical symbols as well as being a learning exercise in itself.
- Maths Trails based on our school environment are available on the school's computer network for all class levels.

4. Problem-solving

- Early problem solving will be taught informally through games.
 - Problem solving will be part of every Maths lesson if possible.
 - Problems will be presented in a variety of different ways to children.
- Word problems
 - Practical tasks
 - Open-ended investigations
 - Puzzles
 - Games

- Projects
- Maths Trails
- Diagrams

- Both open and closed problems will be discussed.
- Children will be taught to analyse and solve problems carefully and systematically using strategies like RUCSAC, RUDE, CLUES and BOMDAS.
- Children will be taught appropriate problem solving strategies to help them solve work problems.
 - Construct a model
 - Draw a diagram to illustrate a problem
 - Make a chart or table of information
 - Looking for patterns in a problem.
 - Make a guess and test it out.
 - Breaking a problem down and solving each part.
 - Writing a number sentence for the problem.
 - Using appropriate equipment to solve the problem e.g. using a balance, measuring instrument, calculator, blocks.
 - Solving a simpler version of the problem e.g. using smaller numbers

5. Maths Trails

Trails will be used to:

- add a sense of fun and adventure to mathematical topics.
- offer an alternative to formal, written work and a challenge to the children.
- include work suitable for all levels of ability. Children who have previously experienced difficulties in Mathematics can be stimulated by this approach, and the abilities of more able children can be challenged.
- provide an integrated approach thus showing the child how Mathematics is useful throughout the curriculum.
- provide opportunities for the children to interact socially, which allows every child to undertake responsibility. Observers and recorders play an equal role in the activity.
- offer an opportunity to revise aspects of many of the strands and to assess progress in an integrated manner.

6. Using technology

- Calculators will be used to
 - help in the development of an understanding of the four rules of arithmetic and their interrelationships.
 - help with problem-solving by focusing on higher-level skills
 - give the child confidence to try more difficult mathematical tasks by removing computational barriers
 - allow the child to explore the number system and to discover facts and relationships
 - create patterns, predict and check results and explore aspects of number structure

Calculators are tools to use when appropriate. Children should be able to ask themselves:

- Can I do it in my head?
- Is it easier to do on paper?
- How reasonable is the answer?
- Do I really need to use the calculator?
- ICT will be used for:
 - drill and practice: an attractive alternative to pen & pencil, useful for weaker pupils
 - adventure programs: require pupils to solve specific mathematical problems to progress
 - databases: a very effective use if ICT, excellent for representing data
 - spreadsheets
 - using the internet to access materials and information.

■ **Assessment and Record Keeping:**

- Teacher observation
- Teacher designed tasks and tests
- Work samples portfolios and projects
- Standardised testing - annual Sigma –T
- Diagnostic testing where appropriate (see Learning Support Policy)
- Pupil profiles

■ **Children with Different Needs:**

School planning and Class planning should consider individual difference in ability attainment and learning style. In our school this applies to children with specific needs, children who find Maths challenging and gifted children.

■ **Equality of Participation and Access:**

- Equal opportunities are given to both boys and girls to participate in discussion and use of manipulatives.
- Equal access will be provided to services, facilities or amenities.

■ **Organisation:**

- **Timetable:**

As prescribed in National Curriculum. Maths is required to be taught every day.

- **Homework:**

Maths homework should reflect and re-iterate work done in school.

As often as possible maths homework will have both a practical and relevant application to the children's lives (involving investigation, discussion and problem solving when appropriate). Homework is given in accordance with the school homework policy.

- **Resources and ICT:**

A wide and varied supply of Maths equipment to support the delivery of the curriculum is available in the school. A core set of Maths equipment will be in class storerooms. A range of other Maths equipment will be on Maths trolleys located near classrooms.

A range of mathematical software is available in the computer room and online. Classes are allocated a period of time in the computer room each week.

- **Individual Teachers' Planning and Reporting:**

- A copy of the whole school plan will be available on the school's computer network.
- Teachers will refer to this plan in their own long term and short term planning.
- When reviewing the whole school plan for maths cúntas miosúils will be used to ensure effective continuity throughout the school.

■ **Staff Development:**

7. Teachers will be encouraged to share current research, reference books, resource material, websites and associations dealing with Maths.
8. Maths post holder will take responsibility for monitoring developments and resources and obtaining materials.
9. Regular curriculum meetings provide opportunities for teachers across a two year band to meet.
10. When possible inservice training in numeracy will be provided for staff.

■ **Parental Involvement - Home School Links:**

11. It is part of our ethos to involve parents as much as possible. Curriculum information meetings and newsletters will inform parents of content and approaches and methodologies used.
12. Information is shared with parents through parent/teacher meetings and end of year reports.

13. More information will be given to parents about how they can help and support their child with Maths.
14. Parents may be invited to participate in a Paired Maths Project which will take place in junior classes over a number of weeks.

■ **Community Links:**

15. If appropriate parents or agencies who could make a particular contribution to a Maths programme will be invited to do so.

■ **Success Criteria:**

- Teachers preparation will be based on this plan.
- Procedures outlined in this plan will be consistently followed.
- Feedback will be obtained from teachers, parents, pupils and the wider community.
- Inspectors suggestions or reports will be taken on board.
- Feedback from second level schools will be obtained and analysed.
- As per the School Self-Evaluation guidelines our School Improvement Plan will continue to be followed and monitored of the next 3 years.

■ **Implementation:**

(a) Roles and Responsibilities:

- Board of Management will support the implementation of this policy by providing ongoing professional development and funding for resources.
- The principal will oversee the day to day implementation of the Maths plan in the classroom.
- The Maths post holder will provide information, materials, resource books and opportunities for sharing ideas on current practice.
- The class teacher will plan for and facilitate the child's learning and progress.
- The learning support team in conjunction with the class teacher will reiterate and support the child's learning.
- Where applicable the SNA will support the child according to guidance from the teacher.
- Parents will be informed, supported and encouraged to help their child at home with Maths.

(b) Timeframe:

- This plan will be implemented in 2018/2019.

■ **Review:**

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

(a) Roles and Responsibilities:

- Principal, Maths post holder and a small focus group will be responsible for reviewing this plan.

(b) Timeframe:

- This plan will be reviewed in the academic year commencing 2021/2022.

■ **Ratification and Communication:**

- This plan will be ratified by the Board of Management in 2019.

Ratified by the Board of Management

Tina Stallard

Date

For and on behalf of the Board of Management Lucan Educate Together N.S.