
Lisnafunchin National School
Castlecomer
Co. Kilkenny
Tel: 0567767076

Mathematics

This document is a statement of the aims and objectives, principles and strategies for teaching and learning Maths at Lisnafunchin National School.

It was developed in the 2001 -2002 school year and is now being fully implemented. The plan was reviewed in 2004, 2007, 2010, 2014 and 2017 to address the development of our School Improvement plan. Our policy has been developed as a response to the Revised Mathematics Curriculum for Primary Schools.

Aims:

The aims of the primary Mathematics curriculum are:

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.

To lay a foundation for further work at post-primary level

Broad objectives

When due account is taken of intrinsic abilities and varying circumstances, the mathematics curriculum should enable the child to:

Skills Development:

Apply mathematical concepts and processes and plan and implement solutions to problems in a variety of concepts

Communicate and express mathematical ideas, processes and results in oral and written form

Make mathematical connections within mathematics itself, throughout other subjects, and in applications of mathematics in practical everyday contexts

Reason, investigate and hypothesise with patterns and relationships in mathematics

Implement suitable standard and non-standard procedures with a variety of tools

Recall and understand mathematical terminology, facts, definitions and formulae

Discuss ideas and collaborate with others in problem-solving.

These skills are developed throughout the following strands of the curriculum: Number, Algebra, Shape and Space, Measures and Data. (Ref pp13,14 of Mathematics Curriculum Teacher Handbook)

Content:

Overview

Infants – 2nd Class

Skills:

Applying and problem-solving
Communicating and expressing
Integrating and connecting
Reasoning
Implementing
Understanding and recalling

Strands	Infant classes Strand Units	First and second classes Strand units
Early mathematical activities	Classifying Matching Comparing Ordering	
Number	Counting Comparing and ordering Analysis of number: <ul style="list-style-type: none">•Combining•Partitioning•Numeration	Counting and numeration Comparing and ordering Place value Operations: <ul style="list-style-type: none">•Addition•Subtraction•Fractions
Algebra	Extending patterns	Exploring and using pattern
Shape and space	Spatial awareness 3-D shapes 2-D shapes	Spatial awareness 2-D shapes 3-D shapes Symmetry Angles
Measures	Length Weight Capacity Time Money	Length Area Weight Capacity Time Money
Data	Recognising and interpreting data	Representing and interpreting data

Maths 3rd - 6th Class Overview

The 3rd to 6th Class Programme is covered using the CJ Fallon 'Busy At Math' Scheme. Whilst each class follows its own programme of work, the teacher teaches new concepts to combinations of classes eg 5th/6th, 3rd/4th as they are covered. Homework is set from the 'Work It Out' and 'Tables Champion' series to give support to pupils in learning tables and re-inforcing concepts encountered in the 'Busy At Maths' programme.

Skills:

Applying and problem-solving
 Communicating and expressing
 Integrating and connecting
 Reasoning
 Implementing
 Understanding and recalling

Strands	Third and fourth classes Strand units	Fifth and sixth classes Strand units
Number	Place value Operations •Addition and subtraction Multiplication •Division Fractions Decimals	Place value Operations •Addition and subtraction Multiplication •Division Fractions Decimals and percentages Number theory
Algebra	Number patterns and sequences Number sentences	Directed numbers Rules and properties Variables Equations
Shape and space	2-D shapes 3-D shapes Symmetry Lines and angles	2-D shapes 3-D shapes Symmetry Lines and angles
Measures	Length Area Weight Capacity Time Money	Length Area Weight Capacity Time Money
Data	Representing and interpreting data Chance	Representing and interpreting data Chance

Aistear Framework

From September 2016, the Aistear framework is being implemented in the Junior Class. This enhances the child's experience of Maths, from their first day in our school. The Junior Class teacher plans lessons carefully to give pupils the opportunity to learn about the world around them through play using Aistear methodology.

Children use language to interpret experiences, to solve problems, and to clarify thinking, ideas and feelings. Pupils are given opportunities to use a variety of mark-making materials and implements in an enjoyable and meaningful way. They develop counting skills, and a growing understanding of the meaning and use of numbers and mathematical language in an enjoyable and meaningful way. The Ready, Set, Go! Maths programme is used to support the teaching of Maths in the classroom through playful activities and games with rules.

Pupils engage, explore and experiment in their environment and use new physical skills including skills to manipulate objects and materials; develop a sense of time, shape, space, and place; come to understand concepts such as matching, comparing, ordering, sorting, size, weight, height, length, capacity, and money in an enjoyable and meaningful way.

Using Technology.

Interactive white boards and ipads are used in both classrooms and have been found to be of great help to teachers in introducing and explaining new concepts eg time, lines and angles, fractions etc.

In 3rd – 6th Class a programme of Mental Maths 'Brain Trainers' is used on the Interactive Whiteboard to help pupils increase speed and accuracy.

Calculators will be used to help in the development of an understanding of the four rules of arithmetic and their interrelationships, to help with problem solving by focusing on higher-level skills, to give the child confidence to try more difficult mathematical tasks by removing computational barriers. It is hoped to use arithmetic logic calculators, and algebraic logic calculators which uses the priority of operations (BOMDAS) to contrast results.

The computer and ipad will be used as a tool, when necessary, to develop a deeper understanding of Maths, by using adventure programmes, databases, spreadsheets, programming using simple code in programs like 'Scratch' and 'Hopscotch'.

Pupils in the senior room use the app 'Numbers' to interpret and graph data.

We also use Drill and Practice programs with children with learning difficulties to re-inforce number facts.

The Maths website 'Manga High' is used in Senior Classes to help pupils re-inforce concepts

Assessment.

Assessment in Lisnafunchin National School will be carried out in a continuous and informal way from day to day. It will range from classroom observation to standardised tests. The following areas will be assessed:

- Conceptual knowledge and understanding of topics
- Problem-solving ability

- Computational proficiency including their ability to compute numbers efficiently both mentally and written work
- Recall skills eg. number facts, terminology, definitions and formulae
- Mastery of specific content areas eg. Number, algebra, space and shape, measures, and data
- The ability to communicate and express mathematical ideas and processes using the correct mathematical language in oral and written form
- Attitude towards Maths
- Success in homework

Assessment Material

Diagnostic tests will be carried out by the Learning Support Teacher.

Standardised Tests: Sigma-T tests are carried out on an annual basis and are used as a basis for selecting pupils who need extra help in Maths.

Use of the Busy at Maths scheme termly assessment tests

Teacher designed tests will be carried out regularly eg on completion of particular topics

Learning Support

Our Learning support service caters for pupils who have particular difficulties in Maths. Pupils are selected following the selection criteria for students to receive Learning Support (see 'Learning Support' policy).

Each year, depending on class size, class group(s) may be withdrawn for Maths. The learning support teacher will deliver the Maths programme for the class level.

Maths Equipment/Resources used in Lisnafunchin NS:

Most of the following equipment is in use in our school.

Maths Programme/Textbooks

Busy at Maths JI-6th Class

Tables books

Work it out!

Tables Champion

Brain Trainers

Problem-solving workbook

Ready, Set, Go!

Number

- number lines, strips, abacus and rubber stamp
- magnetic board strips
- counters, beads, string, buttons,
- Unifix cubes and sorting trays
- pegboards and pegs
- number ladder
- story of 10 boards
- hundred square (with and without numbers)
- fraction, decimal, Percentage walls
- playing-cards and dominoes
- 'Kinder Maths' blocks
- ipad apps e.g. Maths Bingo, Hit the button

Shape and space 2-D and 3-D shapes, tangrams, direction compass, set-squares, clinometer, blackboard compass, set-squares and protractor 360° and 180° protractors gummed paper, paper shapes, construction straws, construction kits

General mathematical equipment Bbooks and games, water or sand tray, scissors (left and right-handed), magnifying glass, magnets, microscope, rain gauge, thermometer, interactive whiteboard, visualiser, overhead projector, television and video programmes, computer programs, calculators, selection of dice,

Measures (standard and non-standard)

Length unmarked sticks, metre stick, half and quarter-metre sticks, trundle-wheel, height chart, tape measures, rulers, ribbon or string, measuring snakes

Weight balance, kitchen scales and bathroom scales, weights, spring balance

Capacity litre, half and quarter-litre containers, varied collection of containers for comparison and date stamps sequencing pictures

Money facsimile money, money stamps

Mathematical Language and Terminology for Signs and Symbols

In general a flexible approach will be adopted in all classes throughout the school.

+: plus, add, add on, sum, sum of, jump on, steps

-: minus, take away, subtract, count back, go back, difference

=: equals to, the same as, altogether

>: greater than, bigger than, more than

<: less than, smaller than

x: times, multiply, product, double, treble etc.

/: divided, shared, into

%: per cent, percentage

+2 -5: positive, negative notation

4²: exponent

.: decimal point, decimal, point

$\sqrt{\quad}$ square root

School Improvement Plan: 2014 onwards

In 2014, we decided to concentrate on problem solving across all strands of the curriculum. It was decided to incorporate a problem-solving period into Maths lessons on at least two days per week. A mix of problem-solving in groups and individual problem-solving will take place. The problems will be based not only on the strands of the curriculum, but also occasionally on reasoning and logic (in Senior Classes) using Brain Training problems (on computer) and Logic puzzles problems.

In 2016-2017, pupils from 4th to 6th Class are given one written problem per night to attempt at home, either on their own or with the help of their parents.

Development, Implementation and Review

The progress of the policy and the review process will be co-ordinated by the teachers annually. A partial review of the policy has taken place in January 2017.. Elements of the policy will be discussed as necessary at staff meetings.

The success criteria by which this policy will be judged include the following:

Teacher observation

Classroom assessment including evaluation of assignments

Standardised tests will be used when those in line with the new curriculum become available

Parent/pupil/community feedback

Inspector's report

Second level feedback

Signed: _____ on behalf of the Board of Management

Date: _____

Date for Review: _____