

# Introductory Statement and Rationale

1. **Introductory Statement**

This whole school plan was prepared and reviewed by the staff of Scoil Seanáin Naofa in response to our need for a co-operative and agreed approach to the teaching of Mathematics throughout the school. This document is a statement of the aims and objectives, principles and strategies for implementing the mathematics programme in our school.

1. **Rationale**

This plan was formulated with the purpose of

* Reviewing, consolidating, clarifying and building upon aspects of the existing mathematic plan
* Conforming to the principles outlined in the Primary Curriculum (1999)
* Organising and co-ordinating the work being carried out already by the teachers in our school
* Establishing and providing a resource for staff members
* Providing a framework within which more specific planning can take place
* Providing information for Teachers, Parents, SNAs, BOM members and all stakeholders interested in the educational process in the school community of St. Senan’s N.S.

# Vision and Aims

1. **Vision**

In St. Senan’s NS we cherish all pupils equally and seek to support them in achieving their full potential. We aim to make the various strands of the Math’s curriculum applicable to each child’s stage of development in as far as is practical within the classroom setting. As in all areas of the curriculum we strive to develop in each child a confidence and acceptance of their varying abilities and levels of progress. We endorse the aims and objectives of the Primary Curriculum.

1. **Aims**

In light of this vision, our aims in mathematics, which are in accordance with the objectives of the Primary Curriculum are as follows:

* To encourage a positive attitude towards mathematics
* To develop the ability to think clearly and logically in mathematics
* To develop imagination, initiative and flexibility of mind and to develop the skills of working systematically, independently and co-operatively
* 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

# Content of Plan

## Curriculum

1. **Strands and Strand Units -**Appendix 1
2. **Approaches and Methodologies**

The approaches and methodologies employed by teachers in facilitating the teaching and learning process in the classroom include one or more of the following:

* **Active Learning**
* **Guided discovery**
* **Talk and Discussion**
* **Problem solving**
* **Collaborative learning**
* Using the environment – *e.g. number games, number line, compass, seeking out shapes in the grounds of the school, maths trails, measuring*
* **Skills through content** – *Text books will be in line with the content objectives for each class level. Teachers for each class grouping will decide which text book best meets the needs of the children and the needs of the school.*
* **Use of ICT**
* **Learning through play**
* **Direct teaching**
* **Use of concrete materials**
* **Modelling – skills, strategies and language**
* **Oral approach to mental maths (Link to Oral Language SSE)**
* **Estimation strategies**
* **Use of calculators** – *5th & 6th class*

*In the mathematics curriculum the strands and strand units are viewed through the lens of the approaches and methodologies. (Teacher Guidelines: Mathematics pp. 30 – 67)*

 • 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 SET teachers for those pupils who attend SET.

• We strive 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 from fifth and 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 ( Teacher Guidelines: Mathematics, p. 70)

• We are in agreement that formulae are being ‘discovered’ by children rather than being taught by rote, e.g. length by breadth (but we also see the need for learning rules by rote after discovery.)

• 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 reflecting the day to day life of the children in the school (How Children get to school / Favourite Programmes…)

• Estimation skills will be developed and refined with the emphasis on using estimation in all areas of mathematics.

**Talk and Discussion** 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.

**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 ( Teacher Guidelines: Mathematics pp. 53 and 57 for examples)

**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 (See Teacher Guidelines: Mathematics pp. 52 & 56)

**Mathematical language in context** 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.

The following outlines the agreed approach and associated language used throughout the school.

**Concepts Approach Language**

**Addition** 3 + 4 = 7 three plus four equals seven

**Addition with Renaming** 25 + 28 T U eight plus five equals thirteen

 2 5 (1 ten and 3 units). Write down

 2 8 the three units at the bottom and

 5 3 carry the one ten on the line with

 a bubble around it. ‘If you do not

 use the bubble it will fly away’

 One plus two is three, plus two

 more equals five.

**Subtraction** 43 – 27 T U Start at the top and say ‘3 take 7’

 4 3 ‘More on the top no need to stop

 2 7 More on the floor, go next door.’

 1 6 Numbers the same, 0 ‘s the game.

 Borrow and pay back

 Renaming taught in 1st & 2nd but

 Borrow and Pay back from 3rd class up.

**Multiplication** 2 4 X 5 T U Start at the bottom on RHS (unit)

 2 4 5 multiplied by 4 equals 20

 X 5 put down the 0 and carry the 2

 (bubble around the 2) 5 multiply

 2 equals 10 plus 2(in bubble) =12

 The‘carries’will always be placed

 on the line with a bubble around

 them.

**Long Multiplication** Extend the method for short

 multiplication. On the second

 Row place a magic 0 (X10)

**Division** 510 ÷ 5 = 5 into 5 goes once (1) 5 into 1

 won’t go put down 0. 5 into 10

 goes 2. (102)

**Adding Time**  hrs min (SIP) Much work is completed at

 3 28 Each class level to ensure that by

 1 45 3rd / 4th class pupils can add on

 Hours. Add minutes. Add hours.

 Regroup then.

**Subtracting Time** hrs min First we need to look at minutes

 43 10 70 More on the top no need to stop,

 1 35 More on the floor, go next door.

 2 35 We borrow an hour (60 Minutes) Numbers the same 0 is the game.

**Addition of Fractions** 31/2 + 41/4 = Change mixed numbers to top

 heavy fractions.

 Find the common denominator.

 Then add the fractions.

 Final step. Change back to mixed

 numbers.

**Subtraction of Fractions** 41/2 – 21/4 = Change mixed numbers to top

 Heavy fractions.

 Find the common denominator

 Then subtract. Change answer to mixed number or simplify fraction.

**Tables Language** **Addition** 5 plus 1 equals 6

 5 plus 2 equals 7

 5 plus 3 equals 8

 **Subtraction** 10 minus 5 equals 5

 10 minus 4 equals 6

 10 minus 3 equals 7

 **Multiplication** 6 multiplied by 1 equals 6

 6 multiplied by 2 equals 12 **Division** 5 divided by 5 equals 1

 10 divided 5 by equals 2

 15 divided by 5 equals 3

**Number Facts:**

Number facts will be taught as follows:

| **Class** | **Introduction to:** | **Mata Sa Rang**Staff trained – Working upon introducing number using approaches and methodologies of Mata |
| --- | --- | --- |
| Junior Infants | Addition to 5 |
| Senior Infants | Addition to 10 |
| 1st Class | Addition within Tens and Units |
| 2nd Class | Subtraction within Tens and Units |
| 3rd Class | To 999 / Multiplication and Short Division |
| 4th Class | Long Multiplication |  |
| 5th Class | Long Division |  |
| 6th Class | Consolidation of all operations (using larger nos.)  |  |

1. **Assessment and Record Keeping**

Assessment is used by teachers to inform their planning, selection and management of

learning activities so that they can make the best possible provision for meeting the varied

mathematical needs of the children.

Teachers select from the following range of assessment approaches:

* Teacher observation of knowledge, skills development and participation in activities
* Teacher designed tests and tasks
* Work-samples, portfolios and projects (Children’s copies / folders)
* Standardised testing
* Children will be encouraged to assess their own work on a continuous basis especially at senior class level.
* Maths tracker
* Maths recovery assessments
* Number Spree

At the end of each school year, all pupils (1st – 6th) complete standardised tests (Dromcondra Maths). The results of the assessments are recorded using the appropriate templates. A detailed printout is filed in each of the class folders and the whole school assessment profile is filed in the Principal’s office. Analysis and review of assessments, scores and pupil performance informs teacher planning for the academic year ahead. Further diagnostic testing may be required in certain individual cases.

Dromcondra early numeracy screening test is used in 1st class on all children who do not meet the criterion to source the specific areas of difficulty for the children.

Upon analysis of the standardised testing scores for the academic year 22/23, measures were noted as an area of difficulty for the children. Thus, a whole school approach to teaching measures will be implemented for the 23/24 school year. Each class will run 6 weeks of parallel teaching alongside SET. All children will be pre and post tested in the area of measures. Measures will be taught using a hands on approach, with lots of concrete materials, ICT, written work and problem solving.

1. **Children with Special Educational Needs**

A balanced mathematics programme at each class level will cover concepts, skills and problem solving. Due consideration must be made, at each class level, of the strengths and weaknesses of individual children. The introduction and development of each topic will be structured in a graded and sequential manner to allow for the individual child to develop and participate at their own level and pace.

1. **Equality of Access and Participation**

All children are provided with equal access to all aspects of the Maths curriculum regardless of race, colour or gender.

## Organisation

1. **Timetable**

 As a minimum, Infant Classes will receive 3 hours and 25 minutes formal instruction per week. From 1st – 6th class pupils will receive a minimum of 4 hours and 10 mins in line with Revised Numeracy & Literacy Strategy.

1. **Homework**

Iin line with the Homework Policy of the school. From 1st – 6th class children work independently on completing **New Wave Mental Maths** and table toppers 1st- 4th . They complete a designated piece of work for each night Monday to Thursday. In summary homework will: - Reinforce work completed in the classroom during the school day - Be achievable and therefore differentiated according to children’s needs - Foster independent work skills - Foster home school links - Increase in quantity in accordance with class groupings

1. **Resources and ICT**

Resources particular to the needs of each class level are available in individual classrooms. A wide range of maths resources are stored in the Learning Support room. All such resources are readily available to each class teacher as required. It is encouraged that all children are given access to a range of mathematical resources for manipulation during discrete lessons and also during free time. At the end of the academic year an inventory of resources is revised and updated in accordance with the school budget.

Every classroom is equipped with an **Interactive White Board** and Internet connections are upgraded to the highest possible standards. Teachers share good practice in the use of ICT (websites / games) that enhance the teaching and learning experience for all.

**I – pad Technology** has been introduced to the school this current year 2016/17 and an action plan is in place to decide upon and upload suitable apps to support teaching and learning in Maths throughout the school.

1. **Individual Teachers’ Planning and Reporting**

Individual teachers plan according to the needs and abilities of the children in their class and with a clear understanding of the aims and objectives of the maths curriculum. This whole school plan will inform fortnightly planning while the Cúntas Míosúil acts a means of recording and reporting the content covered and progress made at each class level.

1. **Staff Development**
* Resource material including websites and reference books will be provided for staff
* Teachers with similar class groupings will make every effort to collaborate regularly in order to plan and discuss content and progress
* In line with other aspects of staff development provision will be made for access to courses and workshops on mathematics.
* Time will be allocated for teachers to explore, discuss and demonstrate skills and issues in the teaching of Mathematics in Scoil Seanáin Naofa.
* Staff have been afforded the opportunity to participate in Mata sa Rang training in Clare Education Centre. All such courses have been certified by Maths Recovery Ireland.
1. **Parental Involvement – Home-School Links**

In Scoil Seanáin Naofa we encourage and welcome the involvement of parents in their children’s education. Such partnership is exemplified in:

* Our initial meetings for parents of the incoming Junior Infants at which the importance of Early Mathematical Activity is discussed
* Annual Parent/Teacher meeting which allow for discussion of individual children’s progress in maths
* Informal Parent/Teacher meetings are convened at the request of the teacher or parent to discuss concerns re challenges or difficulties experienced by children
* Parents attention will be drawn to possible strategies and approaches that can support children with homework
* Children’s homework journals are a means of drawing parent’s attention to issues relating to the Maths Curriculum.

## Success Criteria

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

* Ongoing assessment, formal and informal, will demonstrate for pupils are acquiring an understanding of mathematical concepts and a proficiency in maths skills appropriate to their age and ability.
* Implementation of the school plan will be evident ib teacher’s planning and monthly reports.
* Results of Standardised Tests will be analysed annually to ensure that improvements are made to the Whole School Approach
* Recommendations and Suggestions made by DES Inspectors are taken on board
* Feedback from parents, pupils and the wider school community will advise the revision of this plan.

## Implementation

1. **Roles and Responsibilities**

The Principal holds overall responsibility for the teaching and learning of Mathematics in St. Senan’s N.S. Our whole school plan will be monitored and evaluated annually by all members of the teaching staff, both formally and informally at staff meetings at least once a year.

1. **Timeframe**

The policy is currently being implemented as documented. It will be formally reviewed in September 2018.

**Ratified: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Cathaoirleach B.O.M.)**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(**Date)

**Appendix 2**

Textbooks that support the Teaching of Maths in St. Senan’s N/S.

| **Junior Infants** | **Planet Maths (Folens)****Planet Maths Number Practice****Figure It Out** |
| --- | --- |
| **Senior Infants** | **Planet Maths****Planet Maths Number Practice****Figure It Out** |
| **1st Class** | **Maths Mate1****Mental Maths Book** |
| **2nd Class** | **Maths Mate 2****Mental Maths Book** |
| **3rd Class** | **Maths Mate 3****New Wave Mental Maths 3** |
| **4th Class** | **Maths Mate 4****New Wave Mental Maths 4** |
| **5th Class** | **Planet maths 5****New Wave Mental Maths 5** |
| **6th Class** | **Maths Matters 6****New Wave Mental Maths 6** |