Scoil Iosagáin
Whole School Plan for

# Mathematics

# Mathematics

**■ Title:**         Scoil Iosagáin – Mathematics

## ■ Introductory Statement and Rationale

### (a) Introductory Statement

Mathematics education is concerned with the acquisition, understanding and application of mathematical concepts and skills. Mathematical literacy is of essential importance in providing the child with the necessary skills to live a full life, as a child, and later, as an adult. Society needs people who think and communicate quantitatively and who can recognise situations where mathematics can be applied to solve problems.
The Mathematics curriculum, and its application in the classroom, will be a key factor in preparing the child to meet the demands of the twenty-first century.

## ■ Vision and Aims

### (a) Vision:
In our school, we aim to facilitate a maths scheme of work that is developmentally appropriate and socially relevant—thus ensuring that a positive attitude towards maths is instilled in all our pupils.
The scheme will be interesting and will ensure that the teaching of maths is child-centred, activity-based and spiral in approach, in order to provide meaningful Mathematical experiences.

### (b) Aims:

The aims of this primary mathematics curriculum plan 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

# ■ Content of Plan

## Curriculum:

### 1. Strands and Strand Units:

| Strands | Infant classes<br>Strand units | First and second classes<br>Strand units |
|---|---|---|
| Early mathematical activities | • Classifying<br>• Matching<br>• Comparing<br>• Ordering | |
| Number | • Counting<br>• Comparing and ordering<br>• Analysis of number<br>   *Combining*<br>   *Partitioning*<br>   *Numeration* | • Counting and numeration<br>• Comparing and ordering<br>• Place value<br>• Operations<br>   *Addition*<br>   *Subtraction*<br>• Fractions |
| Algebra | • Extending patterns | • Exploring and using patterns |
| Shape and space | • Spatial awareness<br>• 3-D shapes<br>• 2-D shapes | • Spatial awareness<br>• 2-D shapes<br>• 3-D shapes<br>• Symmetry<br>• Angles |
| Measures | • Length<br>• Weight<br>• Capacity<br>• Time<br>• Money | • Length<br>• Area<br>• Weight<br>• Capacity<br>• Time<br>• Money |
| Data | • Recognising and interpreting data | • Representing and interpreting data |

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

## 2. Approaches and Methodologies:

### 2.1 General

- All children should be provided with the opportunity to access the full range of the mathematics curriculum both in the mainstream class and with the learning support/resource teacher where relevant.
- As a staff we encourage the use of concrete materials and active learning strategies while also ensuring that any textbook used is in line with the content objectives for that particular class grouping.
- Opportunities are provided for all children from third to sixth class to use calculators.
- We ensure that number limits are adhered to particularly in the junior classes and up to first and second class and that the emphasis is on the development of the concept of place value.
- We have agreed that formulae should intally be discovered by the children but that there is a need for a certain element of rote learning.
- We ensure pupils use Mathematical language correctly.
- Pupils collect and record data in other subject areas using mathematical skills e.g. Science, Geography, History.
- Pupils use estimation in all strands of the curriculum.
- We encourage a Maths rich environment.
- We use the Busy at Maths programme from Junior Infants to Sixth Class. This programme details innovative and exciting teaching approaches with a particular emphasis on estimation, cooperative learning and learning through problem-solving. The series also endeavours to encourage the use of the other central methodologies that are outlined in the mthematics curriculum. Furthermore, the teachers' resource books illustrate many examples of meaningful linkage and inegration to aid in the transfer of learning within maths and across other curricular areas.
- The staff have implemented various initiatives and methodologies such as
  - 7-10 minutes of oral maths per lesson
  - Team Teaching
  - Mata sa Rang
  - Busy at Maths whole school programme
  - Home/School Link sheets
  - PDST training in oral Maths
  - Aistear – the aims of the Aistear framework are continually alluded to and espoused in the Busy at Maths series.

### 2.2 Classroom Management and Organissation

- A well-planned, well-equipped and easily-accessible mathematical workplace promotes enthusiasm, curiosity and creativity in the child.
- In order to create a meaningful, mathematical environment, ideally, each classroom will provide the following:

  - Specific area in all classrooms designated to maths equipment. This area should include a variety of relevant maths games, equipment, worksheets and word-cards (so children can work independently, if they are early finishers), and calculators (in senior classes, to be used only when specified by teacher).
  - Suitable charts will be displayed around this designated area using relevant mathematical terminology.

- o The Mathematical displays in each Maths Corner should be changed regularly, in accordance to the strand being worked on.
- o ICT may also be used to enhance mathematical concepts through relevant software, programs, displays and activities.
- o Mathematical concepts and language are an integral part of Free Play and Aistear (structured play) in the infant classes. Here, children are encouraged to explore mathematical concepts in an independent and informal way.
- o Collaborative teaching (e.g.Lead and Support, Alternative Teaching, Parallel Teaching, Station Teaching) are used by teachers in the management and organisation of their maths programme throughout the year.

## 2.3 Talk and discussion

- As we generaly operate in a multiclass situation we use talk and discussion as an integral part of the learning process including teacher/pupil and multiclass peer tutoring.
- We provide opportunities for pupils to revoice how answers were reached, alternative approaches and visual presentations of solutions using the interactive whiteboard.
- Each teacher makes every effort to actively model the language to be used especially when discussing the problem solving process
- We endeavour to make children aware of the usefulness of mathematical language and processes in other areas of the curriculum e.g. gathering data, measuring temperatures etc
- Connections within various strands are encouraged.Linkage is developed in all classes across many strands e.g. decimals and data, decimals and money, percentages, decimals and fractions.
- Children must be trained in discussion skills before they can effectively use them in a group. The skills can be informally and formally introduced to the child in the junior classes and built upon and developed at each level throughout the school. They are as follows:
  - o Turn-taking
  - o Active listening
  - o Positive response to the opinions of others
  - o Confidence in putting forward an opinion
  - o Ability to explain clearly a point of view.

## 2.3.1 Mathematical Language

| Junior Infants | Senior Infants |
|---|---|
| 1 and 2 make ☐<br>1 and 2 more make ☐ altogether<br>And/add ☐ makes, altoghether<br>One/two/three…….more<br>Start at, count on, hop on, count on from<br>More than/less than/same as<br>Ordinal number: - first, last<br>Long/short, longer/shorter<br>More than/less than/ same as<br>First/last<br>Over, under, up, down, on, beside, in<br>Shape<br>Square, circle, triangle, rectangle<br>Roll/ do not roll<br>Fit/ do not fit<br>Round/not round, thick, thin<br>Long/short, tall/short, wide/narrow, longer, shorter, wider than<br>Heavy/light, heavier/ lighter, balance, weigh<br>Full/nearly full/empty/holds more /holds less/ holds as much as<br>Morning/evening, night/day, lunchtime, bedtime, early/late, days of the week, schooldays, weekends<br>Buy, sell, spend, coins pence, how much? cent<br>Enough/more/as many as/less | As Junior Infants plus:<br>$$3 + 1 = 4$$<br>And/add/plus    make/is the same as/equals/is equal to/ altoghether<br>Start at, count on, hop on, count on from.<br>Ordinal number – first, second, third, last<br>Above, below, near, far, right, left<br>Cube, cuboid, sphere, cylinder<br>Edge, corner, face, straight, curved, round, flat, side, corner<br>As long as/as wide as/longest/shortest<br>Yesterday/today/tomorrow/seasons/soon/not yet/birthday<br>Cost, price, cheap/expensive, change, too much/too little<br>Cost, price, cheap/expensive, change, too much/too little<br>Pictogram<br>sets |
| First Class | Second Class |

| | |
|---|---|
| As Senior Infants plus:<br>Between, underneath, on top of, around, through, left, right<br>Square, rectangle, triangle, circle, semicircle<br>Half<br>Cube, cuboid, cylinder, sphere<br>Length, width, height, measure, nearly a metre, a bit more than/a bit less than a metre<br>Heavy, heavier, heaviest, light, lighter, lightest, balance<br>Pour, fill, full, empty, holds more, less or the same amount as<br>Reading day, date and month using calendar<br>Hour, half hour<br>Metre, litre, kilogram | As First class plus:<br>Quarter<br>Cone, oval<br>Metre, centimetre<br>Euro<br>Symmetry<br>Area<br>Digital clock/time<br>Block graph<br>Corners |

| Third Class | Fourth Class |
|---|---|
| As Second class plus:<br>Regular/irregular shapes<br>Sphere, triangular sphere, prism, pyramid<br>Sides, angles, parallel and non-parallel lines<br>Tessellate<br>Nets<br>Symmetry<br>Vertical, horizontal and parallel lines<br>Clockwise/anti-clockwise<br>Gramme, kilogram<br>Possible, impossible, might, certain, not sure<br>Roll, toss, spin, chance, random<br>Tenths<br>Minute<br>Equivalent<br>Bar chart | As Third class plus:<br>Equilateral, isosceles, scalene triangle, parallelogram, rhombus, pentagon, octagon<br>Diagonal<br>Oblique, perpendicular lines<br>Acute, obtuse and right angles<br>Perimeter<br>Hundredths<br>Chance, likely, unlikely, never, definitely<br>Bar line graph<br>scale |
| Fifth Class | Sixth Class |

| As Fourth class plus: | As Fifth class plus: | |
|---|---|---|
| Thousandths | Square roots | |
| Prime and composite numbers | Quotients | |
| Square and rectangular numbers | Octahedron | |
| Factors, multiples | Scale | |
| Positive and negative numbers | Ares/hectares | |
| Equations | Trend graph | |
| Quadrilaterals | | |
| Diameter, radius, chord, circumference, arc, sector, tangent | | |
| Tetrahedron | | |
| Vertices | | |
| Reflex angle, degrees | | |
| Millimetre | | |
| Square metres/centimetres | | |
| Millilitres | | |
| Pie chart, multiple bar chart | | |
| Statistics | | |
| likelihood | | |
| rotation | | |

- While 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.

### 2.4 Active Learning and Guided Discovery

- Children are given opportunities to use a variety of concrete materials/manipulatives and be offered the freedom to choose from these when exploring a mathematical task in order to help develop their mathematical thinking.
- There are numerous examples of active learning/guided discovery methods outlines in the Busy at Maths teacher's resource book(s) to promote the constructivist philosophy from Infants to sixth class.
- A list of suitable teaching resources that are readily available in classrooms is attached.
- We have agreed on the following strategies for teaching

### 2.4.1 Addition Algorithims

Always add the units first

a) Top to bottom    24        4 and 2 is 6
            . +12        2 and 1 is 3
            ------

b) From 2$^{nd}$: Encourage children to use strategies to increase pace, e.g. Doubles, Near Doubles; Facts of Ten; Adding to 9; Bridging to Ten.

⟹ May go top to bottom or bottom to top depending on strategy being used.

c)   T U

   2 6

 + 1₁8

  ----

  4 4            Regroup and Rename

d)   Progress to Hundred; Thousands, Ten Thousands, Hundred Thousands

## 2.4.2   *Subtraction Algorithim*

a)   Read a horizontal number sentence from left to right

    8 – 6 ⊐–   e.g. 8 <u>take</u> 6 is

b)   Always subtract the units first in vertical subtraction

     T U         4 take 9, I cannot do.

    2 ̶3̶ 4             Regroup/rename

 –   1 9      Left with 2 Tens & 14 units

   ------       Now 14 take 9 is 5

    1 5         2 take 1 is 1

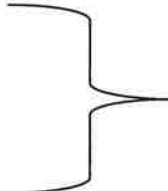                 Answer 15

c)   Hundreds, Tens, Units

   I.

      5            7 take 8, I cannot do.

   9 ̶6̶ 7       Regroup/rename one ten as ten units

 –  2 2 8     Left with 5 tens and 17 units

  -----------   Now 17 take 8 is 9

   7 3 9       5 take 2 is 3

                9 take 2 is 7

  II.   2 9       7 take 9, I cannot do.

    3̶ ̶0̶ ₁7     Regroup/rename one ten as ten units

 –  1 3 9     That leaves 29 tens

  -------     Now that leaves 17 units

   1 6 8       17 – 9 = 8

                9 – 3 = 6

                2 -1 =1

III.   3 9 9                    5 take 9, I cannot do.

       4̶ 0̶ 0̶ ₁5                 Regroup/rename a ten

   -   1 2 3 9                  That leaves 399 tens

       ----------              That leaves 15 units.

       2 7 6 6                 $15 - 9 = 6$

                               $9 - 3 = 6$

                               $9 - 2 = 7$

                               $3 - 1 = 2$

The two strategies will be used here in conjunction with exploration of concrete materials to aid comprehension and understanding.


## 2.4.3 Multiplication

1) Rang 1 – Skip Counting 2's, 3's, 4's, 5's, 10's

2) Rang 2 – Skip Counting 2's, 3's, 4's, 5's, 6's, 8's 10's

3) Rang 3 – Skip Counting 2's, 3's, 4's, 5's etc

   ( including identification on hundred square)

   -   "Groups of"; using multilink cubes, concept boards,

       Addition sentence + multiplication sentences based on visual groupings (i.e. repeated addition)

   -   Multiplication of a two digit number s by 0-10

          1 5                  a) 7 multiplied by 5 is 35

       x  ₃7                   b) put down your 5 and carry/put up 3

          ------               c) 7 multiplied by 1 is 7 and 3 is 10

          1 0 5                d) Put down your 10

                               e) Language changes once proficiency is achieved

                               i.e. 7 5's is 35 put down your 5 and carry 3

                               7 1's is 7 and 3 is 10.

4) Rang 4 – 2 digit by 1 digit i.e. short Multiplication

-   Multiplying by 10 by adding a zero

-   Multiplying by 20, 30, 40 etc. by adding a zero and multiplying by the ten

-   3 digit by 1 digit

-   3 digit by multiples of 10

-   Long multiplication/Estimation Strategies

Step 1

```
        95              95
      x 6 3            x 60
      --------        -------
                       5700
                        95
                       x 3
                      --------
                        285
```

```
5700
+ 285
--------
5985
```

Step 2 (a)    95          a) 3 5's is 15 put down the 5 and carry the 1
              x 63        b) 3 9's is 27 and the 1 is 28 put down the 28
            -------

(b)

a) Put down a zero as now multiplying by 10's
b) 6 5's is 30, put down the 0 and carry the 3
   6 9's 54 and 3 is 57 place the nos in the correct position
d) Add to get final answer.

## 2.4.4 Division

1. **Rang 3** – Dividing using concrete materials
2. Repeated Subtraction - equal grouping/equal sharing
3. Relating multiplication to division – recognise that division is the inverse of multiplication
   e.g. 3x4=12
        12÷3=4
        12÷4=3

4. Introducing the division symbols and remainders
   e.g. 8⌐72 (a) how many groups of 8 are in 72, 72 shared by 8, 72 shared into 8's, 72 divided by 8, 72 divided into 8's, how many 8's in 72.
        4⌐13 (a) as above…. Left over
Initally check answers using multiplication. This is no longer necessary when skills are consolidated. ⌐ shape is also inversed

6. **Rang 4** –

5. Division of tens and units, sometimes there is a remainder and sometimes not.
        e.g. 2⌐32    (a) how many 2's in 3 = 1 and 1 left over…… how many 2's in 12 = 6

16      (b) My answer is 16

e.g. 2 ∟39    (a) as above…. Left over,
19

7. Introduce language of remainders using the symbol 'r'
    e.g. $15 \div 6 = 2r3$

8. 2 digit ÷ by a one digit
    e.g. 3∟39
        13
      2∟29
      14r1

9. 3 digit by a 1 digit
    e.g. 5∟675 or 5 ⌐675
       135

10. O times is emphasised and examples shown (division with renaming)
    4∟83³2
     208

12. **Rang 5** – 3 digit ÷ by a 1 digit
13. 4 digit ÷ by a 1 digit
14. 5 digit ÷ by a 1 digit
15. Estimation – rounding up and down
16. Long division placing emphasis on workings and using multiples
17. Long Division 3 digit divided by a two digit
    e.g. 18⌐774 – see below

18. **Dont Miss School = Division Multiplication Subtraction**

19. 
     043
  18⌐774
    -72 ↓.
      54
     -54
      00

| Workings | Estimation |
|---|---|
| 18¹ | $800 \div 20 = 40$ |
| 36² | The nearest but lower |
| 54³ | Discuss Answer |
| 72⁴ | |
| 90⁵ | |
| 108⁶ | |

20. **Rang 6** – Revision of three/four digits divided by one digit

21. Long division revision –a three and four digit number divided by a 2 digit number
    e.g. 24⌐4164

22. Dividing by decimals – when dividing by a decimal the divisor must be converted to a whole number
    e.g. €30.21÷€0.57
      30.21 ÷0.57
  (a) convert 0.57 to a whole number – multiply $0.57 \times 100 = 57$
  (b) keep equivalance – multiply $30.21 \times 100$ also $= 30.21 \times 100 = 3021$
  (c) multiples

    57 ¹
   +57 ²
   114

$$+ \underline{57}^{3}$$
$$171$$
$$+ \underline{57}^{4}$$
$$171$$

22. Do the sum 57–3021

## 2.4.5 Addition and subtraction of mixed number fractions

$3_{3/8} + 1_{¾}$   add whole number first
$4[_{3/8} + _{3/4}]$
$4[_{3/8} + _{6/8}]$
$4[_{9/8}]$
$4[1_{1/8}]$
$5_{1/8}$

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Also show top heavy method
$3^{3/8} + 1_{¾}$
$27/8 + 7/4$
$27/8 + 14/8$
$41/8$

$5^{1/8}$

</div>

$3_{1/10} - 2_{1/5}$
$1_{1/10} - _{1/5}$
$11/10 - 2/10 = 9/10$

## 2.4.5 Multiplication of Fractions

$¾ \times 3 = ¾ \times 3/1 = 9/4 = 2_{1/4}$

Language – numerator, denominator, multiply across

## 2.4.6 Addition of Time

**Rang 4**

| Hrs | mins |
|-----|------|
| 2 | 40 |
| + 3 | 50 |
| 5 | 90 |
| 6 | 30 |

<div style="border:1px solid">

Workings
90
−60
30

</div>

**Rang 5**

| Hrs | mins |
|-----|------|
| 3 | 25 |
| 5 | 52 |
| + 2 | 49 |
| 10 | 126 |
| 12 | 06 |

<div style="border:1px solid">

Workings
$126 \qquad 126$
$\underline{-120} \qquad -\ 60_{1}$
$06 \qquad 66$
$\qquad\qquad -\ 60_{2}$
$\qquad\qquad 06$

</div>

### 2.4.7 Subtraction of Time

**Rang 4**

| Hrs | mins |
|-----|------|
| 5 | 50 |
| - 2 | 23 |
| 3 | 27 |

**Rang 5**

| Hrs | mins |
|-----|------|

$$\begin{array}{cc} {}^6\!\!\not{7} & {}^{60}23 \\ -2 & 47 \end{array}$$

> Cross out the 7 hours
> Goes down to 6 hours
> Bring across the 60 minutes
> And add to the 23 minutes

| Hrs | mins |
|-----|------|
| 6 | ⁷8̷¹3 |
| -2 | 47 |
| 4 | 36 |

### 2.4.8

It is essential that teachers employ a variety of teching methods and formats to allow each child expolore the mathematical world in various ways

### 2.5 Collaborative and co-operative learning

- In order to develop the above skills children are presented with various opportunites to work with groups, pairs and in the whole class situation with the emphasis on working as a group rather than in a group.
- The following are also used to motivate children to learn and develop social skills e.g.
  - Measuring and recording.
  - Maths games.
  - Sharing resources.
  - ICT and calculator work.
  - Pair work
  - Buddy teaching
  - Group work
  - Station teaching

### 2.6 Problem-solving

- Practical situations will be used as a basis for some problem solving.
- Children at all class levels will be provided with opportunities to experience problem solving activities, e.g.
  - Oral problems
  - Using objects
  - Using smaller numbers
  - Referring to items in the environment

- Children will be made aware of different strategies to solve problems, such as

- o Personalise story/problem.
- o Visualise – draw it out.
- o Act it out.
- o Estimation.
- o Solve simpler version.
- o READ UNDERLINE DRAW/DECIDE ESTIMATE/EVALUATE
- The solutions to problem solving questions could be checked by children themselves or by calculator.
- The Busy at Maths series aims to teach children through the use of problem solving. It exposes children to a wide variety of problem solving strategies in order to assist them in problem solving tasks. It encourages children to work collaboratively when solving problems and to share and discuss the process they used when attempting to solve a particular problem. When listening to other children discussing how they approached a problem, it exposes children to a variety of strategies which they themselves may utilise in the future.
- Children are exposed to different types of problems such as word problems, practical tasks, open-ended investigations, maths trails, games, puzzles, challenges and projects as recommended in the Mathematics Teacher Guidelines.

## 2.7 Using the environment

- The teachers use the school environment to provide opportunities for Mathematical problem solving and mathematical experiences
- We also endeavour to use the school and classroom environment to make maths more real and interesting.
- When using mathematical trails within or outside of the school building they are developed in line with the school's Health and Safety policy.
- Teachers give the children opportunities to present/display their mathematical work in the class/corridor.
- Some other maths activities which involve use of our environment include:
  - o Numbers on doors, car registration numbers
  - o How many rooms/windows,
  - o Observe shapes, angles.
  - o Maths trails – all classes will endeavour to complete a maths trail each term
  - o Measuring - drawing 1 metre on playground with chalk,
  - o In our Green Schools Project we endeavour to integrate maths with many of our activities e.g. surveys, data representation
  - o Aistear incorporates all strands of the maths curriculum

## 2.8 Skills through content

- The following skills will be acquired by the children through the study of the various strands in the Curriculum:

  - o Applying and Problem Solving
  - o Communicating and Expressing
  - o Integrating and Connecting
  - o Reasoning
  - o Implementing
  - o Understanding and Recalling

o Estimation

- Every strand studied must provide opportunities for acquiring skills. Opportunities will also be provided for the transfer of these skills to other areas e.g. Science, Geography, and Music.

## 2.9 Presentation of work

There is an agreed approach to numeral formation in the junior classes. Rhymes or stories may be used to aid formation.

In all classes Maths work is presented using a number of formats namely:

- o Oral Presentation
- o Teacher designed work sheets based on strand unit being taught.
- o Work in class Maths Book which is an activity book
- o Recording work.
- o Response boards
- o Number fans
- o Using concrete materials to draw a picture, pictogram
- o Number stories, Number rhymes (Junior classes)
- o Birthday chart/ graph of favourite fruit/ colour etc.

- A pencil only is used for writing numbers, and problems in Maths right up until the end of 6th class. Children are allowed to use erasers. A red biro is introduced in 3rd class for correction purposes only.

## 3 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 in our school.
- The following assessment tools are used by teachers:

- o Teacher Observation
- o Work samples, portfolios, projects, copybooks
- o Diagnostic tests
- o Teacher designed tasks and tests
- o Curriculum profiles
- o Standardised tests
- o Assessment games
- o Busy at Maths Termly Assessments
- o Extension and enrichment activities based on the strand unit being taught.
- o Ongoing teacher-designed tests. Children will bring the tests and the results of such tests home for signing. Test results are kept by the class teacher.
- o Oral tests (tables, continuation of number patterns, …)
- o Problem solving exercises that use a variety of mathematical skills
- o The Sigma T standardised test is administered every year at the end of May from 1st - 6th class while teacher designed tests are used througout the year. The results of each child's tests will be kept in their school file.

o Results of the standardised test are communicated to parents at the parent-teacher meetings from second class up to sixth

- Following assessment teachers may do the following:

  o Give extra help to individuals who need it
  o Decide to increase time spent using concrete materials
  o Discuss the situation with forwarding teacher at the end of the school year and beginning of new school year
  o Discuss concerns with parents and encourage parents to help children informally e.g. Give me 3 spoons, Help me set the table, How many doors etc.
  o Consult with the Special Needs team who will provide support when needed using available resources within the school.

## 4    *Children with Special Educational Needs:*

- Our Maths policy aims to meet the needs of all children in the school. This will be achieved by differentation to ensure learning for all children.i.e vary pace, outcome, etc
- Those children who receive low scores on the standardised tests will have priority in attending the SEN team for Maths, however, depends on the case load of the SEN team.
- The SEN team have access to and make use of many resources to assist children with special needs.
- ICT is used regularly to support teaching and learning for children with special needs.
- With regard to pupils receiving supplementary mathematics learning support, as much of the mainstream programme is to be taught as possible.
- Continuous observation by the teachers is essential in order to recognise children with difficulties in mathematics. If pupils are displaying difficulties, they may attend the SEN team for supplementary teaching in Maths.
- In class support – As part of our team teaching approach memebers of the SEN team often come into the classrrom to assist the teacher and the pupils with various topics been covered.
- Children with exceptional ability in Maths may be given extra work based on the concept being taught in class. ICT allows children to work at their own level and challenges children of all abilities. Parents will be consulted and opportunities for further development will be explored i.e. contact Centre for Talented Youth Teachers should keep a record of the differentiated approach adopted for these children.

## 5    *Equality of Participation and Access:*
- All children in Scoil Iosagáin irrespective of background or ability have access to services, facilities and amenities in our school.

# Organisation:

## 6    *Timetable:*

- Two hours and 15 minutes for Mathematics is allocated for Infant classes and a minimum of 3 hours is to be allocated for mathematics each week in the other classes.
- All classes have implemented the additional time for Mathematics instruction as instructed

by the Department of Education in their Literacy and Numeracy plan
- When drafting timetables for withdrawal of pupils for supplementary teaching, teachers include these pupils for as much of the mainstream mathematics programme as possible

## 7 Homework:
- Home school Link sheets are used to encourage and inform parents of the topics been covered in school and to provide ideas and methodologies to help their child
- Maths homework is to be asssigned every night
- Mathematics homework aims to regularly reflect an active learning approach.
- Teachers aim to ensure that children attending resource/learning support do not go home with two sets of maths homework.
- Concepts are well established in class prior to homework

## Resources and ICT:
- Each class has resources to be used in conjunction with the maths curriculum.
- There is an informal agreement among teachers that resources are shared when possible.
- Each class teacher will decide on the proposed textbooks for their own classroom in consultation with other class teachers at the end of each school year. We aim to have a similiar publisher in use in each class grouping i.e junior, middle and senior classes.
- Currently all classes use Busy at Maths
- Each classroom has an interactive whiteboard and visualiser and there is an emphasis on using ICT in the development of mathematical skills with the mathematical programmes being used throughout the school.
- The internet is a tremendous resource also and each teacher uses various websites which have been filtered by the schools broadband provider.
- As part of the Busy at Maths scheme there are online tutorials provided to deepen understanding and visually represent various topics and methodologies.

## 8 Individual Teachers' Planning and Reporting:
- The whole school maths plan is to be available to each class teacher to be used to guide their own individual short and long term planning.
- Team teaching – any class group that are employing the team teaching strategy meet regularly with the two/three teachers involved. Planning, teaching and assessing are all undertaken collaboratively and recorded on a team teaching template.
- All teachers use the curriculum strands and strand units as the basis of their planning.

## 9 Staff Development:
- Teachers are made aware of any opportunities for further professional development through participation in courses available in Education Centres or other venues.
- Skills and expertise within the school are shared and developed through inputs at staff meetings.
- PDST facilitators visit the school at various stages to advice on planning, methodologies and initiatives.

## 10 Parental Involvement - Home School Links:
- Homework provides a strong link between home and school. It is re-enforcement and

revision of concepts taught in class.

- Junior Infant teacher holds information evening with parents of incoming Infants, in June. One of the aims of this meeting is to encourage parents to talk about everyday maths at home i.e. how many plates do we need on the table? Too few, too many, enough.
- At parent/teacher meetings we advise parents of approaches and language used in maths.
- Parents and teachers also have opportunities to make individual arrangements to discuss matters of relevance at other times throughout the school year.
- An advisory note regarding our methodology of teaching may, be sent to parents as the need arises. e.g. subtraction
- Home/School Link sheets as part of the Busy at Maths scheme can be sent home to parents with suggestions that can help their child in partnership with and under the guidance of the class teacher.

## 11 Community Links:

- Members of the local community may be invited to assist the school's Maths programme if it is deemed suitable.

# ■ Success Criteria

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

- Ongoing assessment, formal and informal, to evaluate if 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 in teachers' preparation and monthly reports.
- Teachers will know from their new classes in September that work/approaches as outlined in the plan have been covered by the previous teacher

# ■ Review

### (a) Roles and Responsibilities:

- The principal in conjunction with the staff will be responsible for the review of the maths policy .

### (b) Timeframe:

- This plan will be reviewed in March 2019.

# ■ Ratification and Communication

This plan was ratified by the Board of Management in June 2017

- Each teacher has received a copy and it is also available in the School Plan folder.
- Parents have been informed via newsletter that they can access the plan by making a written request for a copy to the school

Signed _____P.J. Harrington_____  Date: - 6th June 2017
**Chairperson, Board of Management.**

Signed _____Alma Quinn_____  Date: - 6th June 2017
**Principal.**