St. Augustine's National School

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Mathematics Policy 2021

Introduction
The principal and teaching staff of St. Augustine's National School formulated this policy in 2012. It has been updated in 2020 in line with Department of Education changes in relation to the teaching of maths and due to ongoing staff professional development.

Rationale
Mathematics encompasses a body of knowledge, skills and procedures that can be used in a rich variety of ways: to describe, illustrate and interpret; to predict; and to explain patterns and relationships in Number, Algebra, Shape and Space, Measures and Data.

In St. Augustine's National School, Mathematics is seen as the science of magnitude, number, shape and space and their relationships and also as a universal language based on symbols and diagrams. Mathematics involves the handling (arrangement, analysis, manipulation and communication) of information, the making of predictions and the solving of problems through the use of language that is both concise and accurate.

Mathematics is an essential tool for all children. The application of Mathematics in a variety of contexts gives children the ability to explain, predict and record aspects of their physical environments and social interactions. This policy was formulated to cater for the wide range of ability, attainment and learning styles within our school. Emphasis has been placed on building on the child's previously acquired knowledge and of having frequent periods of revision. It aims to conform to the principles outlined in the Mathematics (Curaclam na Bunscoile, D.E.S., 1999) and assist all involved refocus on any changes they will need to implement.

<u>Vision:</u>

In St. Augustine's N.S, we envisage that each child will be given the opportunity to develop their mathematical skills and competencies to their full potential and with the relevant supports in place. We aspire to create an enjoyable mathematical experience for the children where mathematics is seen in everyday life and not just in the classroom.

<u>Aims:</u>

We endorse the aims of the Primary School Curriculum for Mathematics which are:

 • To develop a positive attitude towards Mathematics and an appreciation of both its practical and aesthetics 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 proficiency in fundamental mathematical skills and in recalling basic number facts.

• To enable the child to acquire an understanding of mathematical concepts and processes to his/her appropriate level of development and ability.

2. The Curriculum

Objectives of the Primary School Curriculum for Maths:
Skill development:
- Apply mathematical concepts and processes, and plan and implement solutions to problems, in a variety of contexts .
- 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 and manipulatives.
- Recall and understand mathematical terminology, facts, definitions and formulae.

Number
- Understand, develop and apply place value in the denary system (including decimals)
- Understand and use the properties of number
- Understand the nature of the four number operations and apply them appropriately
- Approximate, estimate, calculate mentally and recall basis number facts
- Understand the links between fractions, percentages and decimals and state equivalent forms
- Use acquired concepts, skills and processes in problem-solving

Algebra
- Explore, perceive, use and appreciate patterns and relationships in numbers
- Identify positive and negative integers on the number line
- Understand the concept of a variable and substitute values for variables in simple formulae, expressions and equations
- Translate verbal problems into algebraic expressions
- Acquire an understanding of properties and rules concerning algebraic expressions
- Solve simple linear equations
- Use acquired concepts, skills and process in problem-solving

Shape and space
- Develop a sense of spatial awareness
- Investigate, recognise, classify and describe the properties of lines, angles and two-dimensional and **three**-dimensional shapes
- Deduce informally relationships and rules about shape
- Combine, tessellate and partition two-dimensional shapes and combine and partition three-dimensional shapes
- Draw, construct and manipulate two-dimensional and three- dimensional shapes
- Identify symmetry in shapes and identify shape and symmetry in the environment
- Describe direction and location using body-centred (left/right, forward/back) and simple co-ordinate geometry
- Use acquired concepts, skills and processes in problem-solving

Measures
- Know, select and use appropriate instruments of measurement
- Estimate, measure and calculate angles, time, money and scale using non-standard and appropriate units in measurement
- Estimate, measure and calculate length, area, weight, capacity and average speed using non-standard and appropriate metric units of measurements
- Recognise and appreciate measures in everyday use

Data
- Use acquired concepts, skills and processes in problem-solving Data
- Collect, classify, organise and represent data using concrete materials and diagrammatic, graphical and pictorial representation
- Read, interpret and analyse tables, diagrams, bar charts, pictograms, line graphs and pie-charts
- Appreciate, recognise and express the outcomes of simple random processes
- Estimate and calculate using examples of chance

Problem Solving
Use acquired concepts, skills and processes in problem-solving

Strands and Strand Units

Strands	Infants		1st & 2nd	3rd & 4th		5th & 6th
Early mathematical Activity	Classifying Matching Comparing Ordering					
Number	Counting Comparing and Ordering Analysis of Number		Counting and Numeration Comparing and Ordering Place Value Operations Addition Subtraction Fractions	Place Value Operations Addition Subtraction Multiplication Division Fractions Decimals		Place Value Operations Addition Subtraction Multiplication Division Fractions Decimals Percentages Number Theory
Algebra	Extending Patterns		Exploring and Using Patterns	Number Patterns and Sequences Number Sentences		Directed Numbers Rules and Properties Variables Equations
Shape and Space	Spatial Awareness 2D Shapes 3D Shapes		Spatial Awareness 2D Shapes	2D Shapes 3D Shapes Symmetry Lines and Angles		2D Shapes 3D Shapes Symmetry Lines and Angles

		3D Shapes Symmetry Angles					
Measures	Length Weight Capacity Time Money	Length Area Weight Capacity Time Money		Length Area Weight Capacity Time Money		Length Area Weight Capacity Time Money	
Data	Recognising and Interpreting Data	Representing and Interpreting Data		Representing and Interpreting Data Chance		Representing and Interpreting Data Chance	

Maths Skills

Spanning the content of the curriculum are the skills that the child should develop while engaging with the maths curriculum. These skills are:

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

Timetabling

In line with the requirements as set out by Circular (0056/2011), the time spent on Mathematics shall be **3hours and 25 minutes per week for Infants** and **4 hours and 10 minutes per week for students with a full day**.
Where possible the Special Education Teacher and principal will facilitate team-teaching in both the Junior and Senior Room. Team Teaching will be planned collaboratively by the class teacher and SET. Maths Team teaching will be for a set block of time and related to a specific maths strand.

Text Books.

The Busy at Maths programme has been rolled out through out all classes in St. Augustine's N.S. Each class group follows the book prescribed for their class level. Though we use textbooks, teachers endeavour to use a wide variety of materials and alternative worksheets and activities.

3. Methodologies and Approaches

In St. Augustine's N.S. we endeavour that all children should be provided with the opportunity to access the full range of the mathematics curriculum. Each teacher individually plans for their class grouping. We place emphasis on active learning strategies and rely less on textbooks and workbooks, using them in line with content objectives for the class level. Concrete materials are used where possible.

The approaches and methodologies that teachers will use in their delivery of the maths curriculum will include:

The use of Manipulatives – Where practical and possible, children should have access to and use a broad range of mathematical equipment during lessons.

Talk and Discussion: will be used as an integral part of the learning process. Opportunities should be provided during maths class for children to discuss problems with the teacher, in pairs or in groups.

Active Learning and Guided Discovery: As part of the Maths programme for each class, children are provided with structured opportunities to engage in exploratory activities under the guidance of the teacher: to construct meaning, to develop mathematical strategies for solving problems and to develop self motivation in mathematical activities.

Scaffolding: Teachers actively model the language to be used, particularly when new concepts are being introduced and when talking through the problem- solving process.

Integration: We feel that identifying other areas in the curriculum where mathematical processes are appropriate and useful highlights the profile of mathematics and promotes its uses to the children in their lives both inside and outside the classroom. Where possible a thematic approach is used across a number of subjects.

Linkage: Linkage is integration within a subject area. In mathematics, it is not necessary to complete one strand before proceeding to another strand. Skills established in one strand area can be applied within the content of the other strands. Like building a jigsaw, all the pieces of the mathematics curriculum are necessary and are parts of the entire picture. Linkage provides balance in the teaching of all the strands.

Collaborative and Cooperative Learning: Collaborative and co-operative learning is promoted using the following strategies:
- Encouraging children to listen.
- Encouraging children to take turns.
- Seeing that others' opinions are important.
- Children working in pairs/small groups while playing mathematical games.

Use of ICT: ICT very important in the teaching of maths as it provides opportunities for the pupils to engage in interactive activities, programmes and games developing understanding of mathematical concepts, problem solving skills and self-motivation in mathematical activities. The Busy at Maths

programme has interactive resources which can be used on the interactive to use with each class level. Children will also have opportunities to use school iPads and appropriate mathematical apps.

Using the environment/community as a learning resource:
The school building and grounds are used as a resource to support the Maths programme. Teachers use the school environment to provide opportunities for mathematical problem solving e.g. numbers on doors, using hula hoops to sort children in PE, games on the playground, count trees in the garden, count windows, observe shapes of windows, doors etc. Mathematical Trails are used outdoors to help teach mathematical concepts to children and make them aware of mathematics in their environment. Children will have opportunity to display their mathematical work in their classrooms, in the school hall or in the corridor.

Problem solving
Children are encouraged to use their own ideas as a context for problem solving. Problem Solving skills will be promoted and encouraged throughout the school in both a formal and informal way.

Language – Concepts/ Skills
There is a strong link between language and concept acquisition. We feel it is important to have a common approach to the terms used and the correct use of symbol names. This is in order to ensure consistency from one class to the next and to help avoid confusion for children having difficulties with Mathematics. A list of terms can be found in Appendix A. #

Mathematical language in context
For each class level there is a list of terminology/language relevant to the subject area outlined in the content section of this plan. There is a conscious effort made throughout the school to use the children's own ideas and environment as a basis for reinforcing mathematical language. Teachers identify common approaches to the language used in mathematics. Particular terms are to be used at different class levels. However, it has been agreed that during the children's primary school career that they are exposed to the different terms used in relation to the symbols.

Number facts
The staff of St. Augustine's have agreed a common approach to the teaching of number facts. The children are made aware of the commutative properties of multiplication tables and of their relationship with division. Subtraction tables are taught as part of addition and division tables are taught as part of multiplication. Repeated addition is used to facilitate learning the multiplication process as is repeated subtraction used to learn and understand the division process.

Collaborative learning and co-operative learning
Opportunities are provided throughout the school to ensure that the children learn the skills to work as an individual as well as in a group, e.g. listening to others, turn-taking, appreciating that others' opinions are important. Each class uses a variety of organisational styles, e.g. pair work, group work, individual study and whole class work.

Skills through content

The teachers in St. Augustine's N.S. actively develop the children's skills through the content taught. (Teacher Guidelines pg 68-69) Teachers are vigilant that the transfer of these skills also takes place in other curriculum areas. Much preparatory oral work is completed in the infant classes and continued throughout the school to assist understanding, prior to pencil and paper activities. Informal mental maths is encouraged throughout the school.

Presentation of work

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

Estimation

Estimation is essential for real-life mathematics, e.g. shopping, measuring, time, etc.' We encourage the development and refinement of estimation skills in all areas of mathematics. The estimation procedure we utilise is

I)   estimate,

II)   record the estimate,

III)   solve the problem

IV)   compare your estimate with the actual result.

We explore many strategies with the children, e.g. front-end strategy, clustering strategy, rounding strategy and special numbers strategy. To assist children with the concept of estimating we call it 'clever guessing' and 'guesstimate'.

Problem solving

We attach great importance to the development of the child's ability to solve problems. Problems include tasks ranging from relatively routine application of concepts and skills to non-routine, open-ended questions, puzzles and investigations. Problems are opportunities to practice and consolidate the skills and concepts taught. A wide variety of activities are directed towards enabling the child to connect the different aspects of a problem, to ask relevant questions, to make predictions, and to identify solutions. In the Junior section of the school, the foundation is set in place by giving oral problems and encouraging the use of the problem-solving strategies outlined below. As the children move from class to class, this foundation is built on. Emphasis is placed on presenting children with real problems related to their own experience and on encouraging them to develop strategies 'for solving them imaginatively.

Problem-solving strategies

1. Read the problem at least three times.

2. Act out or use objects or the children's own ideas as a context for problem-solving.

3. Make a picture/diagram.

4. Use or make a table.

5. Make an organised list.

6. Guess and check.

7. Use or look for a pattern.

8. Work backwards.

9. Use logical reasoning.

10. Make it simpler.

11. Brainstorm.

12. Identify operation needed using mathematical language as prompts. e.g. altogether

4. Language and Agreed Methods

There is a strong link between language and concept acquisition. It is important to have a common approach to the terms used and the correct use of symbol names. Our school has agreed the following vocabulary for Mathematics.

Quick Reference:

Class	Symbol	Term Used
Junior Infants	**+**	And, make, more, altogether
	=	Equals, same as
Senior Infants	**+**	Add, plus
	-	take away, left, less than
First Class	**+**	Addition, total, more than, sum of
	=	Equals, answer is
	-	subtract
		place value – the word units will be used instead of 'ones'
		Swap/regroup will be used when regrouping
Second Class	**-**	Subtraction, from, less than, difference minus

Multiplication and Division:

Class	Symbol	Term Used
Third Class	**x**	multiplication times multiply
	÷	divide division split group share divided by shared between how many
Fourth Class		increase decrease product of
Fifth & Sixth Classes		Quotient square power of represents means

Place Value: In place value the word units will be used instead of ones. The words swap and

regrouping will be used when regrouping.

Decimal Point: The number is the only component which moves. The decimal point should not have a box to itself in copybooks as it does not itself have place value.

Language for Maths Concepts:

JUNIOR INFANTS:
Addition:
Language: and, makes, add, is the same as, altogether makes
SENIOR INFANTS:
Introduction of signs: +, =
Vocabulary to match this: plus, equals (and, makes initially used as in junior infants)
2
+ 1
3
Top down:
2 plus 1 equals 3
2 + 1 equals 3
2+1 =3 reads 2 plus 1 equals 3 or 2 and 1 makes 3
FIRST CLASS
Subtraction:
- is introduced as a symbol in First class
Language: take away, less than, left
16
- 4
Vertical: start from the top using the words 'take away'
16 take away four equals
5 – 1= Horizontal: Read from left to right using the words 'take away'
5 take away 1 equals

PLACE VALUE: The word units will be used rather than 'ones'.

Renaming/ Grouping: will be the method used throughout the school.

SECOND CLASS
Addition:
7+3+8= 18 7 plus 3 plus 8 equals 18 (7plus 3 equals 10 plus 8 equals 18)
6
3
+6
6 plus 3 plus 6
encourage 6 + 6 + 3
Subtraction Language: subtraction, decrease, subtract, take away, from, less than, minus, difference
27
-18
7 take away 8 I cannot do so I change a 'ten' to ten units, 7+10=
17. 17 take 8 equals 9. 1 take away 1 leaves O.

THIRD CLASS/ FOURTH CLASS
Rounding:
1, 2, 3 and 4 hey, ho, down we go
5, 6, 7 8 and 9 hey, ho up we go
Half way there which way do we go?
Round me up hey, ho, ho.
Multiplication/
Division
Short
multiplication
Long
multiplication
÷ and x are introduced as symbols in Third Class. The following
vocabulary will be used:
÷ division, divide, divided by, split, share, shared between, group,
how many in …
X multiplication, multiply, times, of
Start with 4 groups of 3 move onto…
4 threes
4 times 3
4 multiplied by 3
from bottom
from bottom
Units first. Language as above.
Multiply by 10
Multiply by
100
Add a zero
Add two zeros
Division Language: Divisable by/ not divisable by, share among
12 ÷ 4
÷,
, ,
all used
12 shared among 4
12 divided by 4
Fractions
¼ of 32
7/2
Share 32 among 4 and/or 32 divided by 4
7 divided by 2
½ is equivalent to 2/4 (4th class)
½ is the same as 2/4
½ is equal to 2/4
Decimals 1/10 is equal to 0.1 1/100 is equal to 0.01
Include zero before decimal point

Tessellation Fit together with no spaces

FIFTH/SIXTH CLASSES
Number:
Multiplication/Division
Language: square, prime, composite, rectangular numbers.
Finding common multiples by listing numbers
Finding common factors by listing factors
The words 'product' and 'quotient' are introduced. Problems
involving sum, difference, products, quotients
Fractions: All children are taught to MEMORISE TABLE OF
EQUIVALENT FRACTIONS, DECIMALS AND PERCENTAGES
(see attached)
Numerator, denominator
½ + ¼ = __ + __ __
4 4 = 4
½ - ¼ __ _ __ __
4 4 = 4
Mixed numbers
+ and –
3 ½ - 1 ¾ =
Multiplication
1 X 1
3 5
Multiply top number by top number
Bottom number by bottom number
Simplify/ break down
Division of whole
number by fraction
5 ÷ ¼ =
Change your whole number into a fraction and turn your second
Interactive board very
valuable resource in
teaching fractions
fraction upside down and multiply.
How many quarters in 5 units 5 X 4 = 20
Visual aids used by teacher 1 1
Decimals 1/10, 1/100, 1/1000 – tenths, hundredths, thousandths
Addition
Subtraction
Rounding decimals
Multiplication of
decimals
Division by decimals
Converting a fraction to
a decimal
to 3 decimal places (with/without calculator)
to 3 decimal places (with. without calculator)
to the nearest whole number
to 1 decimal place
to 2 decimal places.
Multiplying a decimal by a whole number
Multiplying a decimal by a decimal

Count the numbers behind the decimal points in the question and make sure that there are the same amount of numbers behind the decimal point in the answer.

Multiply the divisor by 10/100 to change to whole number. If you multiply the divisor by 10/100 you must multiply the quotient by 10/100.

You divide the numerator by the denominator (divide the top by the bottom)

or

if possible, you change the number to tenths/ hundredths and then convert to decimal. Look out for ½, ¼, 1/5, 1/10, 1/100

Percentages

Converting a fraction to

a percentage

You multiply by a 100/1 or if possible, you change the fraction to hundredths.

Time

Addition

Subtraction

Add minutes to minutes

Hours to hours and simplify (changing minutes to hours)

hrs. mins. hrs. mins.

3 15 2 75

-2 33- 2 33

If minutes number is bigger on the bottom line, convert… Take hour and change to 60 minutes. Add to other minutes and rewrite sum.

Co-ordination Introduce (x, y) axis

Explain **x** comes before **y** in the alphabet. This will help them remember which comes first.

Area *Rectangle/ square*

Length x width (l x w). breadth = width

Ares (1 Are = 100m, 1 hectare = 10,000m)

Relationship of sq.m to sq.cm.

Area of room from scale plan

Surface area

Find the area of one face. Count the faces and multiply by no. of faces.

Cube and Cuboid

Circle Radius, diameter, circumference, arc, sector,

Relate the diameter of a circle to its circumference by measurement. Measure the circumference of a circle using a piece of string.

Construct a circle of given radius/diameter

Examine area by counting squares.

Length

Irregular Shapes

Look for regular shapes. Divide the shape and draw diagrams.

Add areas a, b and c.

Lines and Angles Right angle, acute, obtuse, reflex, straight, degrees, protractor, ruler

2D shapes

3D shapes
Sum of the angles in a triangle = 180
Sum of the angles in a quadrilateral = 360
Sum of angles in a circle = 360
Identify regular tetrahedrons, nets, construct

Tables
Number facts up to 10 will be memorised. Addition facts up to 10 will be memorised by the end of Second Class and multiplication facts up to 12 by the end of Third Class. Children will engage in skip counting activities from senior infants which will help when teaching the concept of multiplication.
Both will be revised up to the end of Sixth Class. Multiplication is a natural progression from extended addition e.g. 3 groups of 3, 4 groups of 3, 5 groups of 3 etc. Thus tables are recited throughout the school as follows: 3x 3 = 9 (three threes nine), 4x3=12 (four threes 12), 5x3=15 (five threes fifteen). All teachers are expected to teach tables this way in order to ensure consistency and avoid confusion as children mover from one class to the next.
A variety of methods will be used including counting 2s, 3s, 4s …, reciting, using music tapes etc. Subtraction and division tables will be learned as the inverse of addition and multiplication.
Children from 2nd – 6th classes recite their tables regularly and tables are reinforced everyday either formally or informally. Children are encouraged to memorise tables/ learn the number patterns and tables are given for homework. Class teachers identify children having difficulties with tables and with them set realistic targets ensuring steady progression. These children will have their tables discretely asked.

Written Methods:
To ensure a common approach to the teaching of addition/subtraction with regrouping, addition/subtraction of fractions, long multiplication/division, we have agreed the following:

• **Addition:** top to bottom. Write the carried over numbers above the bottom line.
• **Subtraction:** Vertical - use of transition boards and Dienes blocks. Start at the top using the words take away/subtract/minus Horizontal - read from left to right using the words take away/subtract/minus. When subtracting, start at the units and work to the left.
• **Long Multiplication:** when multiplying by the tens the small carried number will be written above the top row of numbers with the circle around them and then added in.
• **Fractions:** in addition and subtraction of fractions the fraction part is changed into equivalent fractions (by finding the common denominator). Add/subtract the equivalent fractions and then the whole number.
• **Long Division:** in long division the steps of round, estimate, multiply, subtract and bring down will be followed where appropriate.

Pupils are provided with opportunities to verbalise and use manipulatives to represent each of these activities before using written symbols.

Tables
• Number facts up to twelve will be memorised.
• Addition and subtraction facts will be covered by the end of Term 2 in Second Class.
• Multiplication and division facts will be covered by the end of Third Class.
• Both will be revised up to the end of Sixth Class. Subtraction and division tables will be learned as the inverse of addition and multiplication. Memory techniques Addition- + 0, + 1, + 2, doubles, near doubles and ten facts. Multiplication- x 5, x 10, x 2, doubles, use of fingers for x 9 and counting in 2s, 3s, and 4s. Different methods will be used in different classes including drill, reciting tables, clock, interactive whiteboard etc.

Skills
The following skills will be acquired by the pupils through the study of the various strands in the curriculum:
• Applying and Problem Solving
• Communicating and Expressing
• Integrating and Connecting
• Reasoning
• Implementing
• Understanding and Recalling (number facts and formulae)
• Estimation Every strand must provide opportunities for acquiring these skills. Opportunities are also given for the transfer of these skills to other curricular areas e.g. Geography, Music, Physical Education and Science. Problem-Solving In recognising that Mathematics is most useful when it can be applied to particular situations and put to a meaningful use, problem solving skills are developed from Infants to Sixth Class and incorporated in all strands of the Mathematics programme. Pupils are encouraged to use their own ideas as a context for problem solving. Where possible we will use the local environment to develop these skills, e.g. Mathematics trails, measuring the yard etc.

Problem-solving Strategies
With regard to problem solving pupils may use the following strategies:
 • Look for a pattern • Guess and check
 • Write a number sentence
 • Break the problem down and solve each part
 • Draw a picture • Make a chart or table of the information
 • Use concrete materials 7 • Use easier numbers • Work backwards
 • Use a calculator • Work with a partner/small group Answering the problem
 • Use all the important information
 • Check your work
 • Decide if the answer makes sense
 • Write the answer
 • Key Strategies
 • Estimate
 • Discuss or consider
 • Measure or do

• Record or report

Estimation: Estimation will form part of most Mathematics lessons.

Strategies:
Pupils will be encouraged to use each of the following strategies selecting the most appropriate for the task in hand.

> • Front-ended strategy – used best in addition. The left-most digits are the most significant in forming an initial estimate and can be used on their own to establish a rough estimate.
>
> • Clustering strategy - best suited to groups of numbers that 'cluster' around a common value, (e.g. 425, 506, 498, 468, 600 – 500). • Rounding strategy - round up/down. Used with the four operations but best in division • Special numbers strategy - looks for numbers that make patterns, 3 + 5 + 7 + 4 + 6 3 and 7 = 10, 6 + 4 = 10 that is 20 + 5 = 25 Please see pages 32 – 34 of the Teacher Guidelines for Mathematics. Staff members are also committed to the ongoing use of peer tutoring/cooperative learning as well as team/station teaching in both mathematics and other curricular areas.

Assessment and Record Keeping

The teachers in St. Augustine's N.S. believe children should be encouraged to play an active part in their assessment and to view it as a positive experience to help them in future work. The staff looks at results on both a class and school basis to see if there are areas of the mathematics programme that can be improved on. A whole-school approach to assessment is taken to ensure continuity and progression from class to class. The following assessment tools are utilised: -

- ***Teacher observation***

Observation is an especially important part of assessment. Teachers take note on how children approach a problem or maths question and how they respond. A teacher might ask a child to talk through the question and how they are going to work it out. This gives a teacher an insight into the child's knowledge and prior knowledge and understanding of the maths topic. This helps to pinpoint exactly where a child is struggling.

- ***Teacher-designed tasks and tests***

These are used to assess prior knowledge and/or evaluate whether a child has acquired a concept. Examples of this include end of term/ half term assessments, end of topic tests or assignments.

- ***Work samples, portfolios and projects***

Samples of completed worksheets, workbooks and copies can be displayed in the classroom.

- ***Standardised testing***

Each class teacher administers Sigma- T tests annually in May/June. When possible, the tests are administered to' each class at the same time. The teachers are aware of the importance of administering the tests in accordance with the instructions specified in the test booklets. Teachers

monitor the results on both a class and school basis to see if there are areas of mathematics that can be improved on. This information is then used to feed into the School Self Evaluation Plan.

Diagnostic testing

Pupil profiles
Each child has a folder (held in the office) containing a compilation of results gathered from the administration of different assessment tools. Informal assessments are retained in the teacher's classroom. They provide useful information for reporting to parents or other teachers.

Mastery record
Each teacher has a copy of a Mastery record sheet pertaining to his/her class level, outlining the objectives of the Mathematics programme. The teacher records on this sheet whether individual children have achieved objectives.

Resources
Mathematic resources/materials are stored in the classrooms or in the storage boxes in the hall. Resources are clearly labelled. Items that are needed on a daily or weekly basis may be stored in each classroom, e.g. metre stick, large clock, hundreds, tens and units. Each teacher has an inventory of the resources listed below. The selection of textbooks, materials, equipment, games and supplementary books are discussed at meetings.

Mathematical Resources St. Augustine's N.S. Kilshanny staff
- *Calculators and computer software are detailed under Technology heading.*
- *Books - Table Talk - addition, subtraction, multiplication, division workbooks*
- *Maths Homework Assignments (level 3)*
- *Maths Speed Tests - Book 2*
- *Problem Solving with Mathematics - (series 2)*
- *Teaching clocks*
- *Measuring jugs*
- *Floor dominoes*
- Tangrams
- H.T.U. Boards
- Thermometer
- Magnetic Board & No's
- *Weights and Balance*
- *3-D shapes and 2-D shapes*
- *Dice*
- *Counters - unifi~bes, thousand cubes, hundred squares, tens and units-etc.*
- *Protractor and compasses*
- *Metre stick and Trundle wheel*
- *Calendars*
- *Number line*
- *Large hundred square*

- *Geo board*
- *Polydron*
- *Anglegs*
- K'nex
- *Loop games - addition, subtraction, multiplication, division*
- *Money - coins and large magnetic coin? for whiteboard*
- *Maths Games*
- *Isaac 9 x 2 boxes*

Homework

As outlined in our homework policy, teachers assign homework to reinforce concepts taught in class, to widen experiences begun in the classroom and to encourage organisational skills and the ability to work independently. Mathematics homework should reflect the active learning approach that is advocated in the curriculum. Individual teachers have the freedom to assign homework in mathematics when it is beneficial to the children. The homework assigned should consider the range of abilities within the class. Children attending Learning Support or Resource should not receive two sets of mathematics homework. It is important that parents re aware of the correct terminology and methods being used by the children.

Children with Different Needs

The teachers attach great importance to catering for the different needs of the individuals in their classes. As professionals, we endeavour to identify children that are struggling with maths concepts. Through teacher observation and results from assessment and standardised tests or diagnostic tests, children that might need extra help are identified.

Any child achieving on or under the tenth percentile will automatically qualify for additional support, with parental consent.

Team teaching will be provided where possible in all classes.

Additional support and assistance are available for the children individually, in small groups or whole class interventions from the Special Education Needs Teacher. A range of materials including alternative textbooks, computer software and apps are available to enrich the learning of pupils and to help them advance in Mathematics and to challenge them appropriately.

Implementation and Review

This Policy will be reviewed, as deemed necessary, by the Board of Management.

Policy Ratification

The policy was ratified by the Board of Management of St. Augustine's N.S, Kilshanny on _____
_____ .

Signed: _____   **Date:** _____
    (Chairperson, Board of Management)

    (Principal)