

Greenmount Monastery National School

Mathematics Policy



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Section One: Introduction

This plan has been drawn up by the DEIS numeracy group of Scoil Mhuire na nGrás, Greenmount NS in consultation with all staff.

1.1 Rationale

To update the school's mathematics policy in line with the Primary Mathematics Curriculum 2023...

- Modern Educational Needs: Emphasis on skills such as problem-solving, creativity, reasoning, and real-life application of mathematical concepts.
- Holistic Development: To foster a deeper understanding and enjoyment of mathematics through playful and engaging learning experiences; to encourage risk-taking, collaboration, and the use of mathematically challenging tasks, which are intended to develop both cognitive and socio-emotional skills
- Inclusivity and Differentiation: To recognise the diverse needs of learners, to support inclusive practices and to ensure that all students, regardless of their background or abilities, can engage meaningfully with mathematics.
- Educational Environment: To create a more dynamic and responsive educational environment that better prepares students for future challenges and opportunities.

1.2 Vision

This policy on mathematics will reinforce our school mission statement and ethos by allowing each child to achieve his/her full potential. This should enable each child to confidently face the demands of further education and of the rapidly changing society in which we now live.

1.3 Aims

The aims of our mathematics policy include fostering each child's ability to:

- Develop a positive attitude towards maths and an understanding of the application of maths skills to real life.
- Enable the child to acquire an understanding of mathematical concepts and processes to his/her appropriate level of development and ability.
- Develop mathematical sophistication in the area of number, using Maths Recovery strategies, which permeates the entire mathematics curriculum.
- Enrich the child's problem-solving strategies supported by the whole school Maths Recovery programme. To realise that maths problems may be solved in many different ways through class exploration.
- Enable the child to use mathematical language effectively and accurately.

Our mathematics policy supports our staff with the following:

- The formation and implementation of our DEIS 3 year Plan for Numeracy
- The use of Maths Recovery strategies and terminology throughout the school due to ongoing CPD in Maths Recovery
- Revision and assessment of pupils' learning.
- The allocation and sharing of a bank of resources to allow all classes full access to the Primary Mathematics Curriculum.

Our school mathematics policy is guided by the Primary Mathematics Curriculum and its supporting Toolkit.

Primary Mathematics Curriculum	Primary Mathematics Toolkit
• Strands and strand units • Elements • Pedagogical Practices • Learning Outcomes	• Mathematical Concepts • Progression Continua • Support Materials • Examples of children's learning

Section Two: Content... Outline of the Primary Mathematics Curriculum

2.1 Strands and strand units

Algebra	Data and Chance	Measures	Number	Shape and Space
Patterns, rules and relationships	Data	Measuring	Uses of Number	Spatial awareness and location
Expressions and Equations	Chance	Time	Numeration and Counting	Shape
		Money	Place Value and Base Ten	Transformation
			Sets and Operations	
			Fractions	

Elements of the New Curriculum

Elements describe the main categories of processes that children engage in as they learn mathematics. In other words, it is how children learn. There are four elements detailed in the primary mathematics curriculum. They are central to the development of children's mathematical proficiency.

Element	Description
Understanding and Connecting	Building a deep understanding of mathematical concepts and seeing the connections between different mathematical ideas, strands and the real world.
Communicating	Using appropriate mathematical language, symbols, and representations to express ideas clearly and effectively.
Reasoning	Developing and applying reasoning to make, assess and justify ideas using skills such as analysing, proving, inferring and generalising.
Applying and Problem-Solving	Applying mathematical knowledge and skills in flexible, efficient and creative ways to solve problems, conduct investigations, develop and share computational thinking.

The Five Key Pedagogical Practices

<i>Key Pedagogical Practices</i>	<i>Practice in Greenmount N.S.</i>
Promoting Maths Talk	In our school, Maths Recovery permeates the development of children's mathematical sophistication through the sharing and explaining of ideas and the facilitation of both children's informal and formal strategies. We promote a collaborative process, where children's thinking, strategies and ideas are discussed, shared and exchanged. This is

	achieved in the classroom through a range of pedagogical approaches, where estimation and problem solving are encouraged in settings which include whole class, station teaching, group work and pair work.
Emphasising Mathematical Modelling	In Greenmount, we place a strong emphasis on allowing children to represent their mathematical thinking through the use of words, objects, pictures, symbols and diagrams. Maths Recovery is at the heart of our pedagogical methods. This promotes thinking time, and helps children understand that there are many different ways to represent mathematical information and problem solve.
Using Cognitively Challenging Tasks	In Greenmount, we aim to appropriately stretch and challenge each child's conceptual understanding, giving the opportunity to freely explore different ways of solving problems. This is heavily influenced by the philosophy of Maths Recovery and Vygotsky, where the zone of proximal development is keenly observed and facilitated by our teachers. See Appendix 7.1 Problem Solving Pack
Encouraging Playfulness with Mathematics	Playful learning is integral to our mathematics programme in Greenmount. It provides opportunities for exploration, investigation, estimation, challenge, creativity, choice and independence. During our maths sessions, playfulness provides opportunities for our pupils to make connections and share ideas.
Fostering Productive Disposition	We endeavour to foster a positive attitude towards maths in our school. We encourage the children to see the practical, useful and worthwhile value of maths in real life, thus developing a positive outlook towards the learning of mathematics.

Learning Outcomes

Learning outcomes articulate big mathematical ideas, across different stages, and encompass the knowledge, skills and dispositions that children are expected to develop over each two year cycle. Learning outcomes, when shared with children, can support them to have clear expectations and be active agents in their own learning. See pages 19 to 23 of the Primary Mathematics Curriculum for the breakdown of the learning outcomes for each stage and strand.

Primary Mathematics Toolkit

The delivery of the Primary Mathematics Curriculum in Greenmount is guided by the Primary Mathematics Toolkit, which provides practical support for teachers in building rich mathematical learning experiences for children. The components of the toolkit are:

- Mathematical Concepts
- Progression continua
- Support Materials
- Examples of children's learning

For further details on the Primary Mathematics Toolkit, please refer to the following url...
<https://www.curriculumonline.ie/primary/curriculum-areas/mathematics/toolkit/>
See Appendix 7.2 Class Maths Resources and Appendix 7.4 In-Class Maths Support

Maths Recovery and the Primary Mathematics Curriculum in Greenmount N.S.

Maths Recovery was established in Greenmount N.S. in 2008. Since then, the vision to train up a large team of Maths Recovery teachers in our staff has resulted in Maths Recovery being embedded throughout the school and it now permeates our entire maths programme. Maths Recovery embodies the five key pedagogical practices of the Primary Mathematics Curriculum and so plays an integral part in the mathematical development of our pupils.

We deliver a range of learning experiences for our pupils, which support each child's learning needs:

- Whole class exploration with group/ pair/ individual extension
- Team teaching - heterogeneous groups
- Team teaching - stations - ability groups
- Withdrawal - small groups and one-to-one

The teaching approach in Maths Recovery is problem-based. Children are routinely engaged in thinking hard to solve numerical problems that are just beyond the "cutting edge" of the child's current knowledge. Teaching supports and builds on the child's intuitive, verbally based strategies that are used as a basis for the development of written forms of arithmetic. The teacher provides the child with sufficient time to solve a given problem, thus the child is involved in sustained thinking, reflection on his/ her thinking and reflecting on the results of his/her thinking. Children gain intrinsic satisfaction from their problem solving and their realisation that they are making progress.

Our approach to the teaching of basic facts (addition and subtraction tables as well as multiplication and division tables) follows the philosophy of Maths Recovery where the child's

understanding, experience and practice of number operations is fully developed before facts become formally learned and automatised.

Assessment and Record Keeping

As teachers in Greenmount N.S., decisions that we make about maths learning and teaching are informed and shaped by:

- Knowledge of the child and his/ her prior learning
- Knowledge of the curriculum
- Knowledge of pedagogy

Assessment is shaped by:

- Intuitive Assessment... unplanned, unrecorded teacher observation
- Planned Interactions... related to learning outcomes, e.g. maths reflective journals
- Assessment Events... distinct, visible recorded events

Assessment events include a range of teacher designed class tests/ quizzes, externally constructed standardised assessments and diagnostic assessments. Our Maths Recovery recorded assessments are diagnostic in nature. The nature of Maths Recovery teaching methodologies cover intuitive assessments, planned interactions and assessment events.

As part of our DEIS numeracy targets, we have developed a model of assessment for learning and of learning. This involves half termly and termly assessment events which help us prioritise the students for short, intensive, diagnostic support in a particular strand/ strand unit.

See Appendix 7.3 DEIS Numeracy Action Plan

Record Keeping

Assessment results are recorded on Aladdin including:

- Annual standardised test results
- Half-termly classroom assessments
- Senior Infant end of year screener
- First Class post Maths Factor overview

Children with Different Needs

Greenmount N.S. is fortunate to have a diverse community of learners. These include children who:

- need to work at a mathematical level other than their class level
- need extra support to work at class level
- need specific support in particular areas of maths

- demonstrate exceptional mathematical attainment and require further challenges
- are learning English as an additional language
- are in the DLD Classes and the Autism class.

Our approach to differentiating and including children with different needs involves teaching mathematics in the following ways.

- *Whole class exploration with group/ pair/ individual extension*

This is led by the five key pedagogical practices of the Primary Mathematics Curriculum. See Appendix 7 Problem Solving Pack.

Depending on the needs of a class, sometimes the link support teacher will give extra support during whole-class instruction of maths to help children with additional educational needs.

- *Team teaching - heterogeneous groups*

We developed a model called Maths Blast, where we explore a topic as a whole class. Then the children are split up into groups, of mixed ability, to reinforce the learning through playful activities. Using mathematical modelling, the children are able to develop their maths talk by peer learning and sharing. The teacher facilitates this approach.

- *Team teaching - stations - ability groups*

We use a station teaching approach called “Maths Factor”. Across the school, we pretest the children and organise them into small groups according to ability. Then we deliver a short, intensive programme of instruction, primarily in the number strand, with a team of teachers. This benefits all children of every ability and need and works in tandem with Maths Blast to suit different children’s learning styles.

- *Withdrawal - small groups and one-to-one*

As part of our DEIS initiatives, we have a strong emphasis on early intervention strategies in our school. This includes one-to-one withdrawal for Maths Recovery. This follows early in-class Maths Blast and Maths Factor in Junior and Senior Infants. Following whole-class screening at the end of Senior Infants, parents of children, who are presenting with specific difficulties in number, are offered a block of one-to-one intensive maths instruction, using diagnostic Maths Recovery assessments to design the programme.

From Second Class onwards, children who need additional maths support, as evident from standardised test results, parental consultation, an additional educational need or for children whose first language is not English, parents are offered withdrawal support, generally in small

groups, as part of the continuum of support. Those children who receive scores at or below the 20th percentile or have not reached the criterion level on the standardised tests have priority in attending the Special Educational Teacher for supplementary teaching. .

Following half-termly assessments, children whose tests show problems in specific maths areas are given a revision week, in small group settings. This aims to fill the gap of need that may arise due to absence or a specific lack of understanding in a particular topic.

Organisation of Maths Instruction in Greenmount N.S.

Teaching Allocation	• Junior and Senior Infants... 3 hours • First Class to Sixth Class... 4 hours
Whole School Planning	• Whole school in-class support programme... see Appendix 7.4.
Individual Planning and Reporting... see Appendix 7.5 Maths Planning and Instruction	• Termly plans • Fortnightly plans & Cuntais Míosúla
Homework	• Homework in mathematics serves three main purposes in Greenmount School: ◦ Consolidation of work learned in school ◦ Facilitation of learning of mathematical facts ◦ Fostering home-school connections and extending maths knowledge beyond the classroom • The homework set for each child should be at his/her level and differentiated accordingly. This differentiation may take the form of different work or reduced amounts of work.
Parental and Community Links	• Homework involvement • Parent Teacher Meetings • Fostering a positive attitude to maths • Maths Eyes at home and in the Community • Parent and child maths games, including digital format • Real life experiences of using maths, e.g. going to the shop • Maths trails in our local community and its environs

Staff Development	● Maths Recovery one-to-one teacher training ● Maths Recovery Accreditation training ● Maths Recovery Class teacher training at First/ Second/ Third/ Fourth Class level ● Ongoing CPD with Maths Recovery UK and Ireland, C.E.S.C., Oide and other online and face-to-face courses ● In-house CPD, mentoring and modelling
Digital Numeracy	● IWB in all classrooms to facilitate maths instruction and games ● Laptops ● Ipads
Resources	● MR equipment boxes(see Appendix 7.2 Class Maths Resources and Appendix 7.4 In-class Maths Support) ● Class maths boxes (equipment for the teaching of all maths areas, see Appendix 7.2 Class Maths Resources) ● Resource room materials ● Calculators ● Maths books and workbooks ● Whiteboards, markers and copies ● Maths Trails. In the school building and its environs as well as in the local area (new target for DEIS Numeracy Action Plan 2025 – 2028). ● Rules Copy in Fifth and Sixth Class... see Appendix 7.5 Maths Planning and Instruction.
Presentation of children's copy book work... See Appendix 7.5 Maths Planning and Instruction	● Numeral formation ● Copy book layout ● 1 digit per box in boxed copy (large boxed to Rang 1, small boxed Ranganna 2-6) ● Date and title (e.g. Fractions 10/10/2006) from Rang 2 ● The following presentation to be used from Rang 3; Divide the page as follows, Margin to number each sum, Actual Sum, Roughwork ● Biro/pen or pencil can be used from Rang 4 upwards. Biro/pen must be used in Rang 6 ● No Tippex. ● Middle classes to write sum in pen/biro and work it out in pencil. ● Every sum to be numbered. ● Each answer to be written clearly and underlined. ● Examples and rules to be put in teacher's folder from Rang 3 upwards.

Other modes of presentation of children's work and progress	● Mathematical modelling, ● Oral presentation ● Photographing work using digital resources ● Presenting work using technology, e.g. presentations and videos ● Use of whiteboards for skills practice and sharing of information

Implementation and Review:

This policy was updated and developed as part of the Greenmount DEIS Numeracy Action Plan 2022 - 2025 and is implemented by all members of the teaching staff, overseen by the principal. Guidance on particular aspects of the policy can be sought from the DEIS numeracy team. The policy will continue to be regularly reviewed and updated in accordance with our DEIS numeracy action plan.

This plan was ratified by the Board of Management of Greenmount N.S. on 14th May, 2025.

Michael Carey

Chairperson of Board of Management

Introduction to the Appendices

The Maths Recovery programme, developed by Dr. Robert Wright and introduced in Ireland under the leadership of Dr. Noreen O’Loughlin, plays a significant role in shaping our approach to maths instruction at Greenmount N.S. As a result, the resources created by our staff over the years, including assessments and teaching tools, are grounded in Maths Recovery principles.

Appendix 7.1... Problem Solving Pack

The maths problem solving pack provides a structured, whole-school approach to teaching problem-solving

Appendix 7.2... Class Maths Resources

The class maths resources appendix includes photographs of the materials used in classrooms throughout the school.

Appendix 7.3... DEIS Numeracy Action Plan

The DEIS Numeracy Action Plan is a three-year strategy that outlines three key targets, along with corresponding actions, monitoring, evaluation, and review processes.

Appendix 7.4... In-Class Maths Support

The in-class maths support plan includes a tailored plan for each class level and is designed based on implementation models aligned with Maths Recovery practices developed through Mata.

Appendix 7.5... Maths Planning and Instruction

Maths Planning and Instruction includes the preparation for teaching and learning template, as well as the instructional procedures and terminology used in our school for the four mathematical operations, along with guidance on copy layout and numeral formation.