

**REGENT HOUSE SCHOOL
PREPARATORY
DEPARTMENT**



**MATHEMATICS AND
NUMERACY POLICY**

**USING MATHEMATICS
ACROSS
THE CURRICULUM**

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USING MATHEMATICS ACROSS THE CURRICULUM

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INTRODUCTION

This policy will set out the agreed principles and practices that guide the development of Mathematics and Numeracy in our school, drawing on the indicators of effective provision from “Every School a Good School”.

In Regent House Preparatory Department it will be our objective to ensure that the children in all key stages experience a broad and balanced Mathematics and Numeracy programme which is directly guided by the Education Reform Order (N.I.) 1989 and by the Northern Ireland Primary Curriculum. An appropriate range of skills and concepts will be taught, developed and applied in contexts related to the environment and everyday life. Planning will ensure that the tasks will be challenging, taking account of the varying abilities within classes.

The following quotation from ‘Count Read Succeed’ represents the basic philosophy for the teaching and learning of Mathematics and Numeracy throughout the Department.

“When our young people leave school they take their place in a society that is more globally connected and technologically complex than ever before. A solid foundation in numeracy is absolutely essential to ensure they can contribute effectively to the economy and society and live fulfilling lives.”

Objectives of the Mathematics and Numeracy policy

Across the curriculum, at a level appropriate to their ability, pupils should be enabled to:

- **choose the appropriate materials, equipment and mathematics to use in a particular situation**
- **use mathematical knowledge and concepts accurately**
- **work systematically and check their work**
- **use mathematics to solve problems and make decisions**
- **develop methods and strategies, including mental mathematics**
- **explore ideas, make and test predictions and think creatively**

- **identify and collect information**
- **read, interpret, organise and present information in mathematical formats**
- **use mathematical understanding and language to ask and answer questions, talk about and discuss ideas and explain ways of working**
- **develop financial capability**
- **use ICT to solve problems and/or present their work**

Statutory Requirements

The detailed statutory content requirements are documented in the NI curriculum (Primary) and together with the progression exemplified in the revised Lines of Development these inform our scheme of work for Mathematics and Numeracy.

The NI curriculum (Primary) sets out guiding principles, which we endorse and have agreed to include in our policy.

Child Centred Provision

The following ESaGS indicators will be reflected in our provision for Mathematics and Numeracy:

- **Decisions on planning, resources, curriculum and pastoral care reflect at all times the needs and aspirations of the pupils within the school.**
- **A clear commitment exists to promoting equality of opportunity, high quality learning, a concern for individual pupils and a respect for diversity.**
- **A school culture of achievement, improvement and ambition exists with clear expectations that all pupils can and will achieve to the very best of their ability.**
- **Individual pupils are identified as underachieving using PIM data, baseline assessments and teacher observations. The class teacher has the main responsibility to ensure learning and teaching approaches are suitably differentiated to match the level of attainment of those pupils identified.**
- **Effective interventions and support are in place to meet the additional educational needs of under achieving pupils and to help them overcome barriers to learning in Numeracy.**
- **There is a commitment to involve young people in discussions and listen to their views about making decisions regarding maths in real life that directly affect them.**

Inclusion and Equal Opportunities

Every child has an entitlement to a broad, balanced, meaningful and relevant Mathematics and Numeracy curriculum. We recognise that each child is

unique in terms of characteristics, interests, abilities, motivation and learning needs. We recognise that children have different learning styles and preferences and aim to provide learning contexts for all learners.

We incorporate Mathematics and Numeracy into a wide range of cross-curricular subjects and seek to take advantage of multicultural aspects of mathematics. All children have equal access to the curriculum regardless of their gender, race, cultural background or disability. This is monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Strategies

- Collaboration between staff through both formal and informal discussion regarding the specific abilities of individual children.
- Collaboration between staff regarding written evidence of progression in schemes of work and record keeping.
- Maintenance of pupil records in relation to pupil performance, notes of parental consultations, standardised scores and results.
- Liaison with SENCO.
- Liaison with nursery/pre-school groups prior to Prep.1 intake.
- Liaison with post primary schools at Prep.7.

Differentiation

Children learn at different rates and they differ according to ability and maturity. We shall endeavour to match what is taught and how it is taught to the pupils' abilities and aptitudes. A variety of strategies will be pursued to ensure that there is suitable differentiation.

- Whole class involvement
- Group work according to ability
- Individual attention / Teacher support
- Differentiation by task
- Effective use of resources
- Time
- Extension activities

- SENCO support / IEPs

Special Needs

It is the policy of the Department to enable each child to reach his or her full potential.

We recognise that some children will require extra support either individually or in small groups. These children will be identified by the class teacher and an appropriate programme of work (IEP) will be developed in conjunction with the SENCO. Parents will be informed of the child's learning difficulties and of the planned programme of work.

If a child continues to underachieve, the SENCO will inform the Head of Department, and after parental agreement, appropriate agencies will be notified and referrals sought.

It is also recognised that the needs of gifted children should be met. This will be achieved through extension activities which are challenging, stimulating and purposeful.

High Quality Teaching and Learning

The following ESaGS indicators will be reflected in our provision for Mathematics and Numeracy:

- **A broad, relevant and progressive numeracy curriculum is provided for the pupils.**
- **An emphasis on numeracy exists across the curriculum.**
- **Teachers are committed and enthusiastic, enjoying a positive relationship with their pupils and with other school-based staff and dedicated to improving learning.**
- **Teachers provide opportunities for children to apply mathematical knowledge and understanding across the curriculum and in real life situations.**
- **Teachers use adaptable, flexible teaching strategies that respond to the diversity within the classroom.**
- **Assessment and other data are used to effectively inform learning and teaching across the school and in the classroom and to promote improvement. Whole school, class and individual pupil targets are set in relation to PtM data analysed in each academic year.**
- **Self-evaluation is carried out by teachers and the whole school, using objective data and leading to sustained self-improvement.**
- **Teachers reflect on their own work and the outcomes of individual pupils. This is used to inform future planning.**
- **Arrangements for ensuring consistency and accuracy in the statutory assessment of Using Mathematics across the Curriculum Skills will be implemented**
- **Benchmarked educational outcomes reflect positively on the school and compare favourably, when measured against schools of a similar size and circumstance.**

Mathematics and Numeracy teaching and learning at all levels within Regent House Preparatory Department should provide pupils with opportunities for:

- exposition by the teacher
- discussion between teacher and pupils and among pupils themselves
- appropriate practical work
- consolidation and practice of fundamental skills and routines
- problem-solving, including the application of mathematics to everyday activities
- investigative work
- working co-operatively
- developing self-esteem and confidence
- showing initiative
- becoming responsible and independent
- thinking clearly, creatively and critically
- using ICT effectively

Approaches to learning and teaching of Mental Mathematics:

- Interconnections between developing a bank of known number facts, an increasing range of calculations and an increasing range of mental calculation strategies.
- Time allocation for mental mathematics.
- Use of games.
- Use of ICT.
- Assessment of mental mathematics.
- Progression for mental mathematics within and across year groups.

Approaches to learning and teaching in Number:

- Understanding the number system – counting, sequencing, place value, fractions, decimals, percentages.
- Calculations – four operations and their relationships.

- Strategies to encourage understanding of operations, not just ability to compute answers.
- Application of calculation skills in mathematical problem solving, across the curriculum and in real - life situations, especially in selection of operation(s) required.
- Application of financial capability skills.

Approaches to learning and teaching in Measures:

- Progression: direct comparison of two objects, more than two objects, measuring using non-standard units, recognising need for standard units, measuring using standard units.
- Strategies used to enable children to develop accuracy in estimation before measuring.
- Use of practical activities.
- Opportunities for children to select the appropriate measuring tools and units of measurement.

Approaches to learning and teaching in Shape and Space:

- Importance of practical experiences to investigate properties of shapes.
- Emphasis on naming shapes by reference to their particular properties.
- Exploration of position and movement in real life contexts.
- Systematic development of language from informal to formal mathematical definitions.
- Importance of experiencing irregular shapes as well as regular shapes.

Approaches to learning and teaching in Handling Data:

- Emphasis placed on the application of data handling skills to investigate and make decisions: identify a question, decide on information required, decide how to gather information, record and analyse information to answer original question, decide how best to display information.
- Systematic development of understanding of probability: from informal language to describe likelihood of events occurring, through formal language of increasing accuracy to numerical quantification of likelihood.
- Use of ICT packages to process the construction of graphs and charts.

Approaches to learning and teaching in Processes:

- Agreed definition of Processes.
- Progression of Processing skills development within and across year groups.
- Opportunities for children to develop Processing skills e.g. through choosing materials and mathematics required, using a range of problem –solving strategies.
- Opportunities for children to plan their own work and work systematically.
- Use of open ended questions to encourage children to explain their thinking.
- Opportunities for children to work collaboratively and to compare ideas and methods with others.

Teaching and Learning Approaches

Planning and organisation caters for individual, group and class teaching. The teaching approaches are varied, adaptable and complimentary. Pupils are involved in work that is challenging, motivating and which encourages the children to discuss the mathematical activities they have been involved in. The experiences provided aim to ensure that each pupil is engaged in activities best suited to their level and that they are enabled to reach their full potential.

Range of Approaches

- whole-class teaching
- group work
- paired work
- individual work

Children will be given the opportunity to engage in:

- the development of mental strategies
- written methods
- practical work
- investigative work
- problem-solving
- mathematical discussion
- consolidation of basic skills and number facts
- use of ICT
- cross-curricular activities

Assessment/Record Keeping

Informal assessment is ongoing. This involves observing, listening, questioning, discussing and marking through which the child's personal attitude to Mathematics and Numeracy is ascertained and strengths and weaknesses identified.

Formal assessment takes account of written work, practical work, mental skills and problem solving.

For each child the following records are compiled and stored in a class file which is passed from class teacher to class teacher:

- formal school reports

- parental consultation records

- standardised score records

- results of end of Key Stage assessments

- where appropriate, IEPs

At the end of Prep 7 a record of achievement is completed for each child.

The teaching staff assembles work at Levels 1-5 each year for moderation purposes. This is retained by the Mathematics and Numeracy co-ordinator.

Effective Leadership

The following ESaGS indicators will be reflected in our provision for Mathematics and Numeracy:

- **An effective school development plan is in place, providing clear and realistic targets for improvement in numeracy.**
- **The Principal and Governors understand their responsibilities and are informed about the Numeracy Action Plan and the strategies in place to bring about improvement in numeracy.**
- **The Numeracy Co-ordinator demonstrates a commitment to providing professional development opportunities for staff, particularly teachers, and promotes a readiness to share and learn from best practice.**
- **Teachers are given the opportunity to share in the planning, implementation and evaluation of the strategies needed to bring about improvement in numeracy.**
- **Under the guidance of the co-ordinator, teachers identify underachieving pupils and set individual, class and whole school targets to raise achievement in numeracy.**
- **The resources for numeracy are used and managed properly and effectively to support high quality learning and teaching.**
- **The Numeracy co-ordinator monitors and evaluates effectively school numeracy outcomes, policies, practices and procedures within the Numeracy Action Plan.**

The Role of the Mathematics and Numeracy Co-ordinator

- To lead the development of Mathematics and Numeracy throughout the school, in conjunction with the Head of Department, reporting to the Principal and / or Board of Governors.
- To demonstrate expertise, enthusiasm and vision.
- To promote self-evaluation in order to enhance the monitoring, evaluation and review processes.

- To monitor, evaluate and record progress on the Mathematics and Numeracy Action Plan.
- To ensure a regular review and update of the policy with all staff.
- To encourage staff to use a range of learning and teaching strategies to best meet the needs of pupils.
- To assist staff to avail of Mathematics and Numeracy courses to enhance their understanding and teaching.
- To organise school-based INSET as required.
- To provide guidance in the effective use of comparative performance data, including benchmarking.
- To encourage management to offer support for identification, dissemination and implementation of good practice in the learning and teaching of Mathematics and Numeracy.
- To undertake on-going monitoring and evaluation at individual, class and whole school level.
- To report to the Head of Department, Principal and Governors about the school's numeracy development.

The Role of the Governors

- To keep under review the school policy for Mathematics and Numeracy.

The Role of the Principal

- To have oversight of the management of the teaching of Mathematics and Numeracy across the curriculum.

The Role of the Head of Department

- The Head of Department has overall responsibility for ensuring that the Mathematics and Numeracy policy as agreed by all staff is implemented.
- The Head of Department will facilitate the periodic updating of the policy and make it available to any person entitled to consult it.

- The Head of Department will support staff and assign INSET courses to staff as appropriate.
- The Head of Department will work in conjunction with the co-ordinator to monitor and evaluate the quality of teaching and learning of Mathematics and Numeracy.
- In consultation with staff members the Head of Department will utilise funds for the purchase of new resources.

The Role of the Class Teacher

- To ensure progression in the acquisition of mathematical skills with due regard to the statutory requirements.
- To develop and update skills, knowledge and understanding of Mathematics and Numeracy.
- To identify INSET needs in mathematics and avail of training opportunities.
- To keep appropriate on-going records.
- To plan effectively for mathematics across the curriculum.
- To inform parents of pupils' progress, achievements and attainment.

A School Connected to its Local Community

The following ESaGS indicators will be reflected in our provision for Mathematics and Numeracy:

- **Good relationships that facilitate engagement and communication between the school and its parents and the wider community that it serves.**
- **The school and its teachers are held in respect by parents and the local community who in turn actively support the work of the school.**
- **Good relationships and clear lines of communication are in place between the schools and the education agencies that support it.**

We recognise the importance of fostering good teacher / parent relationships and we encourage parents to be actively involved in their children's learning:

- Preparatory Vision events: School Development Plan
- Curriculum evenings Prep 1 - 7
- Bi-annual parent / teacher consultations
- Verbal and written reports on pupil progress
- P7 Bank of Ireland visit (Financial Capabilities)
- Mathematics money week
- Farm to Fork local community initiative
- Homework activities

Consistency with other school policies:

The content of the Mathematics and Numeracy Policy is checked to ensure consistency with other school policies for:

Learning and Teaching, Assessment, Assessment for Learning, Homework, Special Educational Needs, ICT, Positive Behaviour and Pastoral Care.

Homework

Oral, written and practical homework will be set by the teacher in accordance with the school policy.

Evaluation

This is an ongoing gathering of information to assess the effectiveness of our aims. This may result in a change of organisation, method or content as needed. Continuity and progression are reflected throughout the schemes of work.

Mathematics and Numeracy plans are continuously monitored and evaluated by class teachers and the co-ordinator:

- Bi-Monthly plans
- Weekly plans
- Daily lesson notes (daily planning using teaching diaries)

- Pupils participate in self –evaluation and peer evaluation of their mathematical work (when appropriate)

Monitoring and evaluation of the Mathematics and Numeracy policy:

The Mathematics and Numeracy Policy is:

- Agreed with the Board of Governors
- Shared with parents
- Available to the general public via the school website
- Regularly reviewed and updated in consultation with school stakeholders: staff, children, parents and governors