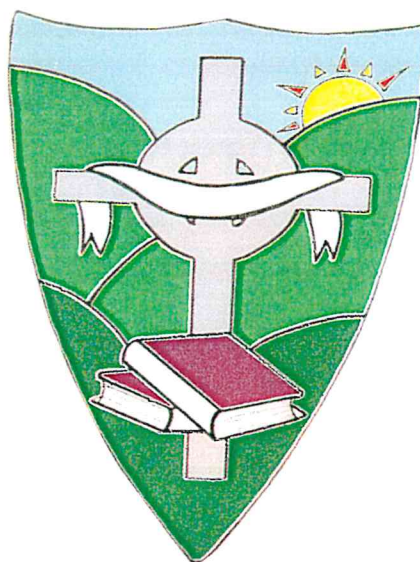


St. Mary's Primary School Rathfriland



Mathematics & Numeracy Policy

Policy Date: April 2022	Review Date: 2025
Signature of Principal see final sheet	Signature of Chairperson of the Board of Governors see final sheet

This Policy is an agreed statement of the intention of all teachers in St. Mary's Primary School in relation to the teaching and learning of Mathematics and Numeracy.

MISSION STATEMENT.

St Mary's P.S is a Catholic school committed to the education of the whole child. We endeavour to create a happy and secure environment, unlocking the full potential of all individuals, thereby developing confident and independent learners.

In our school we aim to:

- Create an ethos that actively promotes Catholic values, with the support of parents and the parish community.
- Embrace diversity and promote respect for all.
- Celebrate our self-worth and understand our individual talents and achievements.
- Develop an environment where children feel secure to express their feelings.
- Provide a curriculum which promotes independent thinkers, creativity and a love for learning.
- Establish positive, friendly relationships with the children in our care, their families, the parish and the wider community.

What is Numeracy?

Numeracy is the confidence and competence to apply mathematical skills in routine and unfamiliar contexts. It involves having the mathematical skills necessary to be a full contributor to society and the economy, including those central to personal financial literacy, and having the disposition to think mathematically in everyday situations, including those arising in future employment. It involves the development of an understanding of key mathematical concepts and interconnectedness, the systematic development of reasoning and problem-solving skills, the proficient and appropriate use of methods and procedures, and active participation in the exploration of mathematical ideas and models.

In the early development of numeracy, children should develop the concepts of number, shape, measurement and data while exploring and manipulating their immediate environments, acquire mental maths strategies in a variety of rich contexts and progress towards being able to problem solve, choosing from a wide variety of strategies, communicating their ideas mathematically and with confidence, and seeing the relevance of what they are doing to everyday life.

(Every School a Good School, June 2008)

Rationale

Numeracy is an integral part of the teaching and learning in St. Mary's Primary School. We recognise the need for our children to be both competent and confident in Mathematics so that they will develop both educationally and develop as effective members of society ready for the workplace. We recognise that number, shape and space, measures, data handling and processes are individual components within mathematics, but we strive to ensure that we offer, in structured activities, in familiar and accessible contexts, the opportunity for children to apply this knowledge and use these skills in cross curricular/real life contexts. We integrate ICT links throughout our teaching and learning. Our staff is fully committed to ensuring effective teaching and learning through good classroom practice. We strive at all times to enable children to become numerically able and confident, ready for the challenges that life may hold. We realise the importance of making the children's mathematical experiences relevant to their real lives.

As a staff we teach Numeracy because:

- It is an essential tool for life.
- It develops children's thinking and problem solving skills.
- It has links with other curricular areas and cross-curricular themes.
- It provides opportunities for stimulation and enjoyment amongst children.
- It is a compulsory part of the Northern Ireland Revised Curriculum at both Primary and at Post-Primary levels.

Child Centred Provision.

The following indicators from ESaGS will be reflected in St. Mary's approaches to teaching Mathematics.

- 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.
- Effective interventions and support are in place to meet the additional education and other needs of pupils and to help them overcome barriers to learning.
- There is a commitment to involve young people in discussions and decisions on school life that directly affect them and to listen to their views.

Aims

These are the Aims which the staff have agreed are realistic and appropriate for our pupils. They represent the benefits which our pupils can expect to gain as a result of learning mathematics in St. Mary's. They form a set of basic principles upon which the teaching of mathematics in our school is based.

- To foster a positive attitude to mathematics as an interesting and attractive part of the curriculum
- To develop the ability to think clearly and logically, with confidence, flexibility and independence of thought
- To develop a deeper understanding of mathematics through a process of enquiry and investigation
- To develop an understanding of the connectivity of patterns and relationships within mathematics
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world
- To develop the ability to use mathematics as a means of communicating ideas
- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems
- To develop personal qualities such as perseverance, independent thinking, cooperation and self confidence through a sense of achievement and success
- To develop an appreciation of the creative aspects of mathematics and an awareness of its aesthetic appeal

Objectives of the Numeracy Policy

At St Mary's Primary School, we intend that, by the end of Key Stage 2 and at a level appropriate to their ability, children will be able to:

- Choose the appropriate materials, equipment and mathematics to use in a particular situation
- Use mathematical knowledge and concepts
- 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 present their work

Teaching and Learning

The content of the mathematics curriculum taught at St. Mary's is guided by our statutory requirement to deliver the Mathematics Programme of Study for Northern Ireland. It divides the mathematics curriculum into Processes, Number, Measures, Shape & Space and Handling Data.

Although the content of this is largely already specified by the NI Programme of Study, the staff of St. Mary's have agreed a set of principles which will inform and guide the nature of the learning experiences of our children.

In mathematics teachers should make the teaching of mathematical concepts as interesting and as relevant as possible and ensure the learning occurs through interactive and collaborative activities.

Opportunities for teaching and learning will include as appropriate:

- Challenging the pupils understanding, through skilful questioning and requiring the pupils to draw conclusions and justify their thinking;
- Using a variety of activities, including ICT and practical equipment, that entails pupils working individually, in pairs, in groups and whole class; Izak9 and Mathletics for example.
- Encouraging the children to make inter-connections within mathematics and relating their work to other areas of the curriculum;
- Providing clear, and when appropriate multiple, explanations;
- Providing opportunities for pupils to solve problems;
- Integrating, when appropriate, mental mathematical strategies;
- Encouraging pupils to think and talk about how they learn and what they have learnt, using plenary sessions as appropriate;
- A greater focus on mathematics in the workplace and identification of real world examples.
- Investigations across Number, Shape and Space, Data Handling and Measures.
- Through observation, teachers will be aware of each child's stage of development and will build on and extend his/her learning experience
- Where Classroom Assistants are available, consultation between the Class Teacher and the Assistant will take place, so that the Assistant will be able to support a child or group of children within the class
- Activities will be differentiated to match the child's needs and abilities.
- Children are made aware of what they have to do through the use of the WALT and WILF boards.
- Teaching staff use various approaches so that individual needs are met through activities to promote learning and understanding.

Forward Planning

Long term planners will identify:

Learning intentions, learning experiences and state explicit links with the curriculum. Shorter term plans are 2 weekly and identify specific learning intentions and differentiation. In years where there are composite classes work will be presented as whole class work with different groupings; not necessarily Primary 1 and Primary 2 work for example. Daily plans are recorded in teachers' diaries. Plans are evaluated by individual teachers and influence future planning.

A typical Lesson

Usually the class will be working on the same unit, allowing the teacher to work with the whole class, with groups of pupils and, at times, to individual pupils. Mostly pupils will work in groups, but at times teachers will group the pupils differently in order to enable different pupils to work together.

Each week every pupil will receive some whole-class or group teaching. We lay great stress on pupils talking about their mathematics to learn by; articulating their thoughts; listening to the views of other people; and from the teacher discussing their thinking.

A typical lesson in Year 1 to 7 will be structured like this:

- Teacher to discuss and share **WALT/WILF** with whole class to determine lesson objectives and success criteria.
- **Oral work and mental calculation** (about 5 to 10 minutes)
This will involve whole-class work to rehearse, sharpen and develop mental and oral skills.
- **The main teaching activity** (about 30 to 45 minutes)
This will include both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work. Revisiting **WALT/WILF** where appropriate.
- **A plenary** (about 10 to 15 minutes)
This will involve work with the whole class to sort out misconceptions, identify progress and to summarise key facts and ideas. This may also take place after a set of lessons not necessarily after every single lesson. (Agreed by staff and Principal)

Out-of-class work and homework

The daily mathematics lessons will provide opportunities for children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning. These will be extended through out-of-class activities or homework. These activities will be short and focused and will be referred to and valued in future lessons. Only topics/content that have been previously taught in class will be sent home for consolidation. Due to the recent Covid 19 pandemic, it has been agreed by staff that pupils will partake in online homework using Mathletics when appropriate.

Using Mathematics

Mathematics contributes to many subjects within the N.I. curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts

Continuity and Progression

This policy recognises that, "Early year's education is both an important phase of learning in its own right and an important building block towards a successful education throughout primary school and beyond." (Count Read and Succeed p24 4.19.) 'High quality early learning experiences, from both home and school environment, 'will help children develop the early skills that will underpin their numerical development.' (C,R,S, p24 4.20) As each child moves from Foundation Stage to Key Stage 1 and 2 the class teacher will become the 'central person responsible for raising standards in Numeracy.'

To ensure continuity and progression the school has formulated a whole school yearly scheme of work, which outlines what it is hoped a class will cover in a year. It is essential that there is a consistency in the mathematical language used throughout the school and an agreed approach should be employed to the teaching of basic concepts.

As a staff at St. Mary's we want to ensure that our children have experiences, both across each of the five broad Numeracy areas and along the different levels throughout their time at school.

Numeracy should be regarded as a core element of the School Curriculum. Within the subject itself, it should be seen that all of the Attainment Targets are inter-related and are not in isolation.

Continuity of experiences will take place by considering the following points:

- Children's learning experiences follow a well planned progression, at a pace suitable for the child
- There is coherence and compatability of approach used by all teachers the child encounters as they progress through the school

In order to achieve these conditions, staff have agreed that:

- The curriculum the children follow is defined by the School Scheme of Work, which is based upon the progression in each of the 5 Attainment Targets for Mathematics contained within the NI Programme of Study
- The School Scheme of Work is planned collaboratively to ensure there are no gaps or unnecessary overlaps in that progression as the children move through the school
- The School Scheme of Work details agreed teaching approaches and methodologies in all areas of maths
- Yearly overviews of the content to be taught in each class are produced, which allow content from each Attainment Target to be taught within each half term
- All new ideas and concepts which the children encounter will be introduced from a starting point within the child's knowledge and understanding
- Activities in mathematics will be differentiated so that children are always working at a pace and level of challenge which matches their ability
- Planning will be regularly monitored by the Numeracy Coordinator to evaluate the levels of continuity and progression achieved. There will be clear evidence of differentiation across Number, Shape and Space, Data Handling and Measures.in the respective classes.
- Assessment is designed to allow the teacher to accurately gauge the child's present level of understanding so as to allow appropriate further work to be planned

Inclusion

In St. Mary's we endeavour to ensure that each child is challenged in Numeracy and their talents stretched. Likewise, we determine to give support and guidance to children who find Numeracy more challenging.

We will strive to identify as early as possible, those pupils or groups of pupils who are experiencing difficulties, using professional judgement and any available data. This information will also help us identify pupils or groups of pupils who are underachieving or have special educational needs, in order to take steps to improve their attainment. Gifted children will be identified and suitable learning challenges provided.

Teaching strategies will include:

- Extended teacher (and classroom assistant, where available) support
- Prolonged use of concrete resource materials and games until such times as the child is ready to move on to the abstract.
- Variation in the level of questioning to suit all abilities.
- Use of extension, interactive and investigative activities to challenge the more able and those who find a particular topic of interest to them.
- Use of a good selection of ICT Programmes at varying levels and used consistently with progression. These can include, **Mathletics, Izak9, Teaching Measures, Teaching Time, Early Years Maths Pack, Maths Pack 1, 2 and 3.*

*All accessible electronically in Maths Folder in Staff

In addition, those children found to have specific learning difficulties in Numeracy will have Numeracy targets set for them in their education plan. Some children will be offered extra assistance through our Maths Recovery Intervention Programme:

Intervention Programme – Maths Recovery

We strive to identify children as early as possible so that early intervention can take place to remediate any problems, before they become a major cause for concern. Children are identified through the use of:

- Data from PTM,
- Data from CAT (P4 AND P6)
- Professional Judgement (particularly in Foundation and Lower Key Stage 1, where data may not be readily available.)

1. Children who are identified as under achieving or experiencing difficulties are monitored within the classroom and follow differentiated activities to try and address their difficulty.
2. Parents will be contacted and concerns discussed. Parental consent will be sought for children who we have identified as underachieving to become involved in the **Maths Recovery Programme**. This programme is carried out by a trained member of staff (currently our Maths Coordinator Mr Donnan). Children are base-lined using a series of 'Diagnostic Interviews' at the beginning of the period of support and then are tested at the end of the programme to monitor progress made.

ICT, Calculators and other resources.

It is the vision of St. Mary's Primary School for all teachers and learners in our school to become confident users of ICT so that they can develop the skills, knowledge and understanding which enables them to use appropriate ICT resources effectively as powerful tools for teaching and learning. Therefore, ICT is an integral part of our Numeracy Policy. The role of ICT is as follows:

- To consolidate the children's learning
- To further develop and expand the children's numeracy skills
- To provide the children with a range of stimuli, therefore developing their use of numerical processes.
- To provide the children with a variety of challenging learning situations.

Pupils use calculators from Primary 5 onwards, where it is appropriate to do so. We teach the pupils how to use them, and set tasks that enable them to learn to choose when to use them.

Most resources are kept in classrooms, accessible to pupils in Foundation and Key Stage One. We teach pupils how to use them and recognise that we need to teach them to make appropriate choices of equipment.

St. Mary's mainly uses the New Heinemann scheme, the Abacus maths scheme, Mathletics Workbooks and other online and teacher generated worksheets. to facilitate the planning and teaching of mathematics along side our own scheme of work. We also have access to 10 Ticks, Problem Solving Toolkit, Teaching Time/Measures, Maths Pack EY, 1, 2 and 3 in our C2K system in the Maths Folder in Staff. The children all have a Mathletics Username and Password to enable them to partake in online classwork and homework.

Centrally Stored Equipment

- Number - Cuisenaire Boxes, Dienes Apparatus, Multi-Link, NUMICON
- Length - Trundle Wheel, Metre Stick, Tape Measure
- Capacity - Bottles, Capacity Measures
- Weight - 5gm-1kg weights, balances, scales (Metric),
- Shapes - 2D 3D shapes, Geo Boards
- Time - Plastic Clocks, Timers, Stop-watches
- ICT - Calculators, Beebots, I Pad's

Parental Involvement

At St. Mary's Primary School we place a very high value on parents as a resource and we endeavour to nurture this resource.

Parents will be involved and updated at all stages of their child's Numeracy progression.

At Curriculum meetings at the beginning of the year, teachers will set out clearly and concisely what will be taught in the coming school year, how it will be taught and how parents can best support their children in their learning. The recent Covid pandemic has meant these meetings have not happened as they would have in normal circumstances.

Parent teacher meetings are also held once per year to discuss progress in Numeracy.

Parents are encouraged to get involved in homework activities including Mathematics tasks.

Progress Tests are completed each half term in classes from Primary 1 to Primary 7 and are sent home for parents to see and return, signed, to school.

Evaluation and Assessment

EVALUATION

It is every teacher's duty to continually evaluate and reflect upon their own classroom teaching on a daily basis, evaluating teaching strategies, styles and classroom management. Teacher evaluations are completed at the end of planners and must be reflected in new planners.

ASSESSMENT FOR LEARNING

Assessment will take place in the general marking of books daily and the reviewing of our 2 weekly planners with any necessary actions carried forward to the next set of 2 weekly plans. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Assessment is an integral part of the Northern Ireland Curriculum. Information gained from assessment has a key role in demonstrating how pupils are performing and in helping schools to improve outcomes.

In St Mary's Primary School all staff use formative & summative assessment strategies effectively to plan an appropriate curriculum for all children.

Diagnostic Assessment –The PTM diagnostic group record sheet is completed and stored electronically. This sheet is used to set overall targets for individual, class and school improvement.

Summative Assessment - Summative data is used to measure a child's progress against his/ her peers and against national norms. We administer Progress Test in Maths 7-11 (PTM) standardised tests from P3-P7 inclusively annually in May.

Short-term assessments will be an informal part of every lesson to check their understanding and give you information, which will help you to adjust day-to-day lesson plans. Assessment for Learning (AFL) strategies are a key component to all teaching and learning in maths lessons and we use this as a continuous dialogue and interaction between adults and pupils. Short summative assessment may also be used on a weekly basis to test Core Competences in Mental Maths in a Friday test. (P2-7)

Long-term assessments will take place towards the end of the school year to assess and review pupils' progress and attainment. These will be made through End of Year mathematics tests (PTM) for Pupils in years 4 to 7.

The **Cognitive Ability Test (CAT)** is used to test P4 and P6 year groups. The standardised results of PTM and CATs testing are recorded in Assessment Manager (SIMS) to enable teachers to track pupil progress and plan for class needs.

Analysis of data is used to:

- Set year on year targets for underachieving children- identify pupils for Maths Recovery.
- Evaluate at the end of each year, how effectively these targets have been met.
- Evaluate the impact of Numeracy development work and its impact on pupil attainment across the Key Stages.
- Identify areas for development within new SDP.
- Identify pupils for whom extension and differentiation are required.

Monitoring and Review

This can be carried out through:

- Teacher observation
- Classroom visits
- Teacher questioning, group and individual discussion
- GL PTM Testing from Year 3
- Test Analysis
- Review of medium term plans and evaluations.

Role of Co-Ordinator

This job description is intended as a guideline to the main aspects of the post. It may be amended from time to time by the Principal in consultation with the Board of Governors, to reflect the changing needs and circumstances of the school.


In addition to carrying out his professional duties as assigned by the Principal, the co-ordinator will:

- Review and update with the staff, when necessary, the school policy for Numeracy
- Review schemes of work with teaching staff in line with new developments in the curriculum
- Attend in-service meetings or courses related to Numeracy and relay relevant information to Principal and staff
- Advise on and coordinate the ordering of resources for Numeracy throughout the school
- Assist with the compiling and updating if a school inventory of Numeracy resources
- Keep up to date with innovations in Numeracy and keep colleagues informed of these changes as appropriate
- Undertake any such reasonable tasks as may be assigned by the Principal
- At the end of the school year report to the Principal and Board of Governors on the various aspects mentioned in the job description

Policy Review:

This policy will be reviewed every 2 years.

Signed:  (Principal)

Signed:  (Chairperson of Board of Governors)

Date: 13/4/22