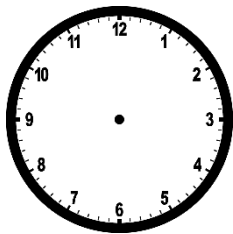


# St. Mary's Primary School



## Mathematics and Numeracy Policy



St. Mary's P.S promotes the United Nations Convention on the Rights of a Child and as a result, our school's Vision Statement is:

***"Childhood is a Unique Experience, Respect it, Enjoy it, Protect it".***

Article 2 underlines our school vision: *"The convention applies to all children whatever their race, religion or abilities"*. Therefore we believe that all children regardless of gender or ability should be given opportunities and experiences necessary to develop Literacy and Numeracy skills to succeed at school, in life and at work. We aim to provide a firm foundation in these skills during their time in our school. We want our children to be competent in reading, writing, talking and listening and in Using Mathematics.

*"Literacy and Numeracy are at the very heart of the Northern Ireland Curriculum. Developing Literacy and Numeracy therefore must be central elements of a school's delivery of the NI curriculum."*

(Count Read: Succeed – A strategy to improve outcomes in Literacy and Numeracy, March 2011.)

Teachers have the central role in raising standards in Literacy and Numeracy to ensure that every child fulfils their potential as stated in Article 29 of the UNCRC. *"Education should develop every child's personality, talents and abilities to the fullest. It should encourage the child's respect for human rights as well as respect for their parents, their own cultures and the environment"*.

### **Context**

Whilst this policy has been agreed by all staff to define our particular principles, practices and provision, it should be noted that our work lies within the wider context of the NI Education system. The following are the main structures in which we operate:

- **The stated vision of the Department of Education for Northern Ireland:**

*"to ensure that every learner fulfils his or her potential at each stage of his or her development."* (DE 2010)

- **The overall aim of the NI Curriculum:**

*"The Northern Ireland curriculum aims to empower young people to achieve their potential and to make informed and responsible decisions throughout their lives."*  
(DE 2008)

● **The characteristics of effective practice, defined in ‘Every School a Good School – A Policy for School Improvement’ (DE 2009), grouped under the four headings:**

- ▶ Child Centred Provision
- ▶ High Quality Teaching and Learning
- ▶ Effective Leadership
- ▶ A School Connected to its Local Community

● **The prominence of Literacy and Numeracy within the NI Curriculum, emphasised in ‘Count, Read: Succeed – A Strategy to Improve Outcomes in Literacy and Numeracy’ (DE 2011)**

*“Literacy and numeracy are at the very heart of the revised curriculum.” (para 2:3)*

*“Developing literacy and numeracy therefore must be central elements of a school’s delivery of the revised curriculum, and of the support and professional development for teachers in implementing the curriculum.” (para 2:5)*

● The characteristics of the most effective practice in numeracy provision in NI primary schools, identified by ETi in ‘Better Numeracy in Primary Schools’ (ETI 2010)

## **Introduction**

This policy will set out the agreed key principles and practices that guide the development in numeracy in our school, drawing on the indicators of effective provision from ‘Every School a Good School’, using the four headings as noted previously.

At St. Mary’s Primary School, Bellaghy, we believe that numeracy skills are the key to future educational successes and to ensuring that each child has the opportunity to develop as an individual, as a contributor to society and as a contributor to the economy and the environment.

We have adopted the definition of numeracy from ‘Count, Read: Succeed’ (para 1:10)

*“The ability to apply appropriate mathematical skills and knowledge in familiar and unfamiliar contexts and in a range of settings throughout life, including the workplace. It involves the development of:*

- a.) *An understanding of key mathematical concepts and their inter-connectedness.*
- b.) *Appropriate reasoning and problem solving.*

- c.) *The proficient and appropriate use of methods and procedures (formal and informal, mental and written).*
- d.) *Active participation in the exploration of mathematical ideas and models.”*

### **Objectives of Numeracy Policy**

At St. Mary’s PS, 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 maths
- 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

From: Requirements for Using Mathematics, NI Primary Curriculum Page 6 (CCEA 2007)

### **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

- 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 listen to their views

### **Teaching Strategies**

Numeracy is taught directly in specific lessons with reinforcement through cross-curricular topics where the mathematical element is outlined. Emphasis is placed on Thinking Skills and Personal Capabilities and draws upon children's numerical skills progression. (See also High Quality Teaching and Learning.)

### **Differentiation**

Numeracy is organised into groups and whole class situations depending on the nature of the task involved. Teachers always ensure children are working at a level that is appropriate for their ability which is challenging but achievable. Differentiation can be by task, by nature of support and by outcome. It is evidenced through teachers planners, classroom work, homework, class tests and resources used. Teachers take into account the information they received from previous teachers in the transition forms completed by class teachers at the end of each academic year. Teachers have access to differentiated levels of books from the Collins scheme and are aware of the differentiated activities in each topic as defined by the different shapes in each section. Teachers are committed to providing equal opportunities for boys and girls, children with disabilities and children from different cultures and they endeavour to build confidence, ensure enjoyment and offer praise and encouragement for all pupils.

### **Special Educational Needs provision**

Having screened pupil data and in conjunction with professional judgement teachers identify and are aware of low and under achievers in their class. Action plans with strategies and activities are in put in place in each class to target underachievers. A commitment from the parents that they too will support their child in reaching their potential is sought and they help support their child at home with extra activities and work provided by the class teacher.

Teachers support low achievers in the class through small group work, practical activities, differentiated work, use of the classroom assistant and ICT programmes.

Early intervention strategies are put in place in P.3 and P.4 where classroom assistants have been upskilled to support the class teacher to target low achievers in class, in small withdrawal groups and on a 1:1 basis.

Children who present with significant difficulty will have IEP's drawn up for them in consultation with SENco.

### **HIGH QUALITY TEACHING AND LEARNING**

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

- A broad and balanced curriculum is provided for the pupils.
- An emphasis on literacy and numeracy exist across the curriculum.
- Teachers are committed and are enthusiastic, enjoying a positive relationship with their pupils and with others school based staff and dedicated to improving learning.
- Teachers use adaptable, flexible teaching strategies that respond to the diversity within the classroom.
- Assessment and other data is used to effectively inform teaching and learning across the school and in the classroom and to promote improvement.
- Rigorous 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.
- Education outcomes reflect positively on the school and compare well, when benchmarked measurement is undertaken, against the performance of similar schools.

### **Cross-Curricular Skills – Using Mathematics**

Using Mathematics is the skill of applying mathematical concepts, processes and understanding - appropriately in a variety of contexts. We endeavour to provide opportunities to develop numeracy skills through its integration with other subjects through relevant real life situations that require a mathematical dimension.

Each half term, samples of marked and levelled cross curricular investigations are collated in the children's pupil portfolios. A total of 5 samples of work will be in each child's folder at

the end of each academic year, this is well in keeping with the statutory requirement of 3 samples. Samples of work are also sent to the Numeracy Co-ordinator for moderation purposes. At whole staff meetings, internal moderation takes place once half termly to review the consistency of teachers' judgements. Following these regular meetings, teachers have expressed the opinion they are now more competent and confident when levelling children's work. It has also proved an invaluable opportunity for the sharing of ideas and good practice and also a good generator of relevant discussions.

### **Time Organisation**

Each class teacher plans for and delivers a daily numeracy lesson which varies in length depending on year group. Maths lessons usually follow the format of a mental maths starter, a main teaching activity and a plenary session.

### **Learning and Teaching**

The content of the Mathematics curriculum taught at St. Mary's PS is guided by our statutory requirement to deliver the statutory curriculum for mathematics as laid out in the Northern Ireland Curriculum (CCEA 2007). It sets out the minimum requirements that must be taught at each key stage, grouped into 5 areas: Processes, Number, Measures, Shape and Space and Handling Data. The maths co-ordinator has worked closely with teaching staff to create and produce a School Scheme of Work for Mathematics for P.1-6. The P.7 scheme will be completed by the end of the first term (2014-2015) See Appendix 1.

Although the content of this scheme of work is already specified by the Revised Lines of Development for Mathematics (CCEA), the staff of St. Mary's PS, have agreed a set of principles which will inform and guide the nature of the learning experiences of our children, designed to achieve the aims detailed previously.

These principles are listed below, grouped under each of the five areas of mathematics:

### **Processes**

The NI Curriculum specifies a progression of Processes skills for children to acquire as they develop their mathematical ability. In order to facilitate this, the teaching staff in St. Mary's PS will ensure:

\*Activities which allow the children to develop and enhance processes skills will be a regular feature of classroom life.

\*Opportunities will be provided for pupils to work collaboratively so that through discussion they can develop their use of mathematical language and organise their thinking.

\*Children will be asked to show an increasing level of independence in their planning and recording of work as they progress through the school.

\*Children will be asked to show an increasing level of independence in their selection of mathematical material as they progress through the school.

\*Opportunities will be provided for children to become familiar with and apply a range of problem solving strategies.

\*Opportunities will be provided for children to search for patterns and use relationships in investigative work, leading to an appreciation of generalisations.

\*Opportunities will be provided for children to use an increasing range of mathematical language to facilitate their ability to communicate their mathematical ideas.

## **Number**

The Ni Curriculum specifies a progression of Number-based skills for children to acquire as they develop their mathematical ability. In order to facilitate this, the teaching staff in St. Mary's PS will ensure:

\*Children will be encouraged to use mathematical calculations where appropriate.

\*Children will have the opportunity to discuss and develop a range of calculations strategies.

\*Teaching will encourage flexibility of thinking and utilisations of connections within mathematics.

\*Children's computational skills will be developed and consolidated using a balance between practice and application in meaningful context, including Financial capability.

\*Opportunities will be provided for children to develop their estimation skills and will be encouraged to estimate answers before completing calculations.



\*Teaching will place a strong emphasis on ensuring children gain a sound understanding of the Place Value basis of the number system.

### **Measures**

\*The NI Curriculum specifies progression of skills in Measures for children to acquire as they develop their mathematical ability. In order to facilitate this, the teaching staff in St. Mary's PS will ensure:

\*Children will use a range of measuring equipment in meaningful contexts and be encouraged to make choices regarding the most suitable equipment.

\*Children will follow a progression beginning with direct comparison, through measuring with non-standard units to measuring with standard units with increasing accuracy. Teachers are committed to making the teaching of mathematical concepts as interesting and as relevant as possible. Teachers also try to ensure that 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.
- Use a variety of activities, including ICT and practical equipment that entail pupils working individually, in pairs, in groups and whole class.
- Ensuring the children make inter connections within mathematics and relating their work to other areas of the curriculum and every day life.
- Provide clear and when appropriate multiple explanations.
- Provide opportunities for children to take part in investigative activities and solve problems.
- Use of mental maths strategies.
- Encourage children to think and talk about how they learn and what they have learnt.
- Use of plenary sessions
- Take into account the various preferred learning styles.

### **Resources**

Maths resources are stored both centrally and in each class. An audit of all maths resources has recently taken place. The co-ordinator is responsible for the ordering and monitoring of all mathematical equipment.

After much research and seeking opinions of all teaching staff a new Maths scheme, Collins Maths, has been bought and introduced and is used from P.1 – P.7 ( May 2013.) P.4-7 use

text books and these are stored in each classroom. This was supplemented with New Heinemann Maths scheme in September 2016. P1-3 use replenishable workbooks whilst P4-7 use text books. These are stored in each classroom.

In addition to these schemes, teachers supplement their teaching and learning with other maths schemes, some include Ginn, Oxford Maths, Nuffield and Heinemann.

As it is good practice, all resources are shared.

### **Monitoring and Evaluating**

Monitoring and evaluating are integral parts of the teaching and learning in our school and it is the responsibility of all members of staff. The co-ordinator will oversee the progress made towards fulfilling our aims.

This will be achieved through

- lesson observations
- book scoops
- informal discussions with staff
- displays
- regular reviews of the maths action plan
- staff meetings
- planners
- Questionnaires
- Analysis of assessment
- listening

The evidence, which we gather through these monitoring procedures, will be evaluated regularly, in order to inform future planning. We will try to ensure that the pupils work is of a high standard and that these standards are evaluated, maintained or in some identified areas, improved.

We do this through:

- The sharing of learning intentions and success criteria (WALT, WILF)
- Class/ topic /end of term tests
- End of key stage assessment results
- formative assessment procedures
- internal standardisation procedures
- formal and informal assessment undertaken as part of normal classroom teacher

- observations of practical activities and during play and activity based learning.
- discussions with children
- discussions with parents
- NFER results
- Quality marking of pupils work in line with Marking Policy
- Regular, detailed and comprehensive information given to parents about a pupils achievement and progress.

Target Setting

Benchmarking

Data Analysis

Ict

### **Individual Pupils who are Underachieving:**

As a result of comparing standardised mathematics scores with reasoning standardised scores; NRIT children are identified who are under-achieving in mathematics.

Analysis of their responses in the mathematics standardised assessment, together with the associated audit of provision will enable detailed intervention programmes to be implemented. The effectiveness of these programmes is monitored and evaluated – to be considered effective they must achieve their objective which is to enhance the pupil's attainment so that they are no longer under-achieving.

Each under-achieving pupil should have a quantitative target where their mathematics standardised score is improved to the point where they are no longer considered to be under-achieving – within 10 points of their NRIT score.

## **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 based on a sound vision for the school.
- Governors understand their responsibilities and provide clear strategic direction as well as support and challenge to the Principal in carrying forward the process of improvement.
- School leaders demonstrate a commitment to providing professional development opportunities for staff, particularly teachers, and promote a readiness to share and learn from best practice.
- Teachers are given the opportunity to share in the leadership of the school.
- The resources at the disposal of the school are managed properly and effectively, with appropriate arrangements in place for financial management, attendance management and working relationships.
- School leaders monitor and evaluate effectively school outcomes, policies, practices and procedures and the School Development Plan itself.

## **Numeracy Co-Ordinator**

### **Responsibilities**

The Numeracy Co-ordinator will:

- Demonstrate expertise, enthusiasm and vision
- Promote self evaluation in order to enhance the monitoring, evaluation and review the process.
- Monitor, evaluate and record progress on the numeracy action plan
- Ensure a regular review and update of the policy with all staff

- Encourage staff to use a range of learning and teaching strategies to best meet the needs of pupils
- Assist teachers to avail of numeracy courses to enhance their understanding and teaching of Numeracy.
- To organise school-based INSET as required.
- Provide guidance in the effective use of comparative performance data, including benchmarking.
- Encourage management to offer support for identification, dissemination and implementation of good practice in the learning and teaching of Numeracy.
- Undertake on-going monitoring and evaluation at individual, class and whole school level.
- Report to Principal and Governors about the school's numeracy development.

### **Staff Development**

Staff will be encouraged to attend in-service courses which are relevant to their year group and any other courses that enhance teaching of Mathematics and Numeracy throughout the school.

Staff questionnaires and audits are used to identify professional needs.

### **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 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.

- The school uses its involvement in particular programmes; Extended Schools effectively in meeting the needs of the community and nearby schools.
- Good relationships and clear lines of communication are in place between the schools and the education agencies that support it.
- The school works closely with other relevant statutory and voluntary agencies whose work impacts on education, especially Health, Social Services and the Library Service and, where appropriate, local Neighbourhood Renewal groups.

### **Links with parents:**

Hollybush ps net

- Reporting to parents through Parents Teacher Meetings
- Information Evenings
- End of year written report
- Feedback via comments in children's books
- Maths open mornings
- Website showcasing examples of good learning and teaching in maths
- Questionnaires
- Maths Pack sent home to parents to help with activities at home
- Keeping parents up to date with what learning is taking place each half term.
- Open door policy where staff are approachable
- Homework
- School Newsletter
- Participation in World Maths Day at home
- Parents of children who are targeted as an underachiever in maths are informed in a letter and asked for a commitment to support their child at home to achieve their target.

### **Links with other Schools:**

- Visits to other primary schools to share and compare effective practice.
- Post primary schools visit our school to ensure cross phase consistency and to manage transition for children.
- We helped St. Pius X to evaluate their own scheme of work in maths by sharing our teaching and learning strategies for number and in particular times tables.

### **Links with the Community:**

- Visits to local business'
- Visits from local trade people, where mathematics is used in their work e.g. – shops, builders, kitchen, and furniture suppliers etc...

### **Links with external education support agencies:**

- Educational Psychology Service
- MAST

### **CONSISTENCY WITH OTHER SCHOOL POLICIES**

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

Learning and Teaching, Assessment, Homework, Special Educational Needs, ICT

Equal Opportunities, Health and Safety

### **MONITORING AND EVALUATION OF POLICY**

The Numeracy Policy is;

Agreed with the Board of Governors

Shared with parents

Available to the general public on request

Regularly reviewed and updated in consultation with school stakeholders; staff, children, parents and governors