



ST MARY'S HIGH SCHOOL, NEWRY

Numeracy Policy

Revised September 2017

Rationale:

In St Mary's, we are committed to raising standards in Numeracy through our learning and teaching styles and strategies designed to help our pupils acquire and develop core numerical skills.

This policy ensures Numeracy remains a priority in the School Development Plan and that all staff play an important part in its promotion **across the curriculum**. While Mathematics is regarded as a subject which is taught in its own right and where there is progression and development, Numeracy embraces all the connotations of real life application and the use of mathematics as a natural tool across the curriculum. As such the promotion of Numeracy is the **responsibility of all teachers** and a clear understanding that skills acquired in the Maths classrooms should be developed across all subject areas. *"...every teacher, regardless of the subject they teach, must promote and model high standards of literacy and numeracy."* (*Count, Read: Succeed* paragraph 4.29). Strengthening pupils' numerical abilities by exercising them in other subject areas offers pupils another means of comprehending these subjects – increasing pupils' opportunities to apply their numerical skills should result in more pupils integrating them into their everyday understanding.

Context:

The stated vision of the Department of Education for Northern Ireland (DENI) is *'To ensure that every learner fulfils his or her potential at each stage of his or her development.'* (DENI 2010)

This has been enunciated in the overall aim of the Northern Ireland Curriculum (DE 2008), which says, *'The N Ireland Curriculum aims to empower young people to achieve their potential and to make informed and responsible decisions throughout their lives.'*

The School Improvement policy document, 'Every School a Good School,' (DENI 2009) has outlined indicators of what will be recognised as effective performance under four headings:

- **Child centred provision**
- **High quality teaching and learning**
- **Effective leadership**
- **A School Connected to its local community.**

Definition:

Count, Read: Succeed (paragraph 1.7) defines Numeracy as:

'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:

- an understanding of key mathematical concepts and their inter-connectedness;
- appropriate reasoning and problem-solving;

- the proficient and appropriate use of methods and procedures (formal and informal, mental and written); and
- active participation in the exploration of mathematical ideas and models’.

‘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 inter-connectedness, the systematic development of reasoning and problem-solving skills, the proficient and appropriate use of methods and procedures (formal, informal, mental and written) and active participation in the explanation of mathematical ideas and models’.

‘Every School a Good School’, DE, June 2009

Attitudes and Expectations:

The promotion of a positive attitude to Numeracy is vital and therefore the expectations of both teachers and pupils should be realistically high. We must continually seek to improve pupils’ understanding of the importance of Numeracy in everyday life.

‘A Strategy for Raising Achievement in Literacy and Numeracy’ (**Every School a Good School, June 2009**) stresses the importance of ‘...promoting more positive attitudes to Literacy and Numeracy’ and aims to ‘...rigorously address under-achievement’. It has been stated that the **1998 ‘Numeracy Strategy’** did contain many of the key elements necessary for the successful implementation of a Literacy and Numeracy Improvement Programme. The Strategy led to improvements, notably by higher-attaining pupils. However it ‘...did not impact sufficiently to raise the overall attainment in Literacy and Numeracy, particularly for the underachieving pupils’.

Aims:

- To promote Numeracy as an essential life skill to enable young people to develop as individuals and contributors to society and the economy;
- To promote positive attitudes towards Mathematics and Numeracy among pupils and staff;
- To ensure the involvement of relevant departments in the promotion of Numeracy across all subjects;
- Numeracy remains a key priority on the School Development Plan and as a result must continue to be a priority at whole school level;
- To enhance the quality of Numeracy teaching through effective use of ICT technologies and resources;
- To increase teachers’ understanding of the contribution which Numeracy can make to each curriculum area;
- To use a range of teaching strategies and styles to meet the needs of all learners;
- To encourage pupils to take responsibility for their own learning;
- Developing Numeracy skills will enhance pupils’ learning in all other areas of the curriculum, their self-esteem and increase their employability opportunities;
- Mathematics is the universal abstract language which underpins much of the understanding in all STEM subjects.

Child Centred Provision:

'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'

(Every School a Good School, June 2009)

In St Mary's, we aim to ensure through effective learning and teaching the needs of all pupils are met and they reach their full potential in Mathematics.

Curriculum Provision:

KS3 Mathematics

- There are four Mathematics classes timetabled together in each KS3 Year Group
- At the beginning of Year 8, MidYIS results, Arithmetic Ages and NFER Progress in Maths 11 test results are analysed by the SENCO and Head of Mathematics to identify pupils who require additional Numeracy support and are taught in a smaller teaching group. Classroom Assistants support to pupils who have additional needs
- At the beginning of Year 9, NFER Progress in Maths 12 test results and the Year 8 Summer Exam results are analysed to identify pupils who require additional Numeracy support and are taught in a smaller teaching group
- At the beginning of Year 10, NFER Progress in Maths 13 test results and the Year 9 Summer Exam results are analysed to identify pupils who require additional Numeracy support and are taught in a smaller teaching group
- A wide range of teaching strategies including effective questioning, group work, individual task completion, extended activities, peer and self assessment are used to ensure pupils are challenged
- Parents are made aware of all Numeracy initiatives and strategies to support their daughter
- Classroom assistants liaise with the SENCO, Numeracy Coordinator and Subject Teachers to support pupils with class work, projects and homework
- Pupils are praised and their achievements acknowledged and celebrated by displaying their work in classrooms, the Maths corridor and the school website

KS4 Mathematics

- There are five GCSE Mathematics classes in Year 11 timetabled together
- There are five GCSE Mathematics classes in Year 12 timetabled together
- All pupils study GCSE Mathematics (Higher or Foundation)
- Classroom Assistants support pupils with Special Educational Needs
- Teachers adopt a wide range of teaching styles and strategies to meet the needs of all learners.
- After school Booster GCSE Mathematics Classes reinforce and support learning

Through our established assessment and monitoring arrangements we identify pupils who are experiencing difficulties in their learning and initiate support strategies to raise pupil attainment. The following support strategies are already established:

Underachieving Pupils:

- A School Mentor is employed to support those pupils who are underachieving in Years 9, 11 and 12, liaises with teachers and parents and monitors pupil attainment;
- Year 13 pupils act as Learning Partners to support Year 8 pupils who are underachieving;
- The Count Read Succeed Programme targets a selection of KS3 pupils to improve their mental mathematics and confidence in using mental Maths strategies.
- Classroom Assistants support pupils who are experiencing difficulties in their learning and employ strategies to promote learning;
- Targeted group of eight pupils from each Year Group are put on a four week Progress Report monitored by Form Teachers and Year Head during Terms 1 and 2.
- Targeted group of fifteen pupils are put on a six week Progress Report monitored by SLT throughout Year 12.

Newcomer Pupils:

- Classroom Assistant (20 hours per week) employed to support Newcomer pupils who are experiencing language difficulties in English;
- Staff complete the CEFR framework to track Newcomer pupil attainment across all subjects;

Special Educational Needs:

- Classroom Assistants support pupils who are experiencing difficulties in their learning and employ strategies to promote learning;
- Staff complete IEP's for all pupils on Stages 2 – 5 on the SEN Code of Practice. Targets are set, reviewed and revised bi-annually;
- Pupils with specific learning difficulties in Numeracy are taught in a smaller class at KS3.

High Quality Teaching and Learning:

'Assessment and other data is used to effectively inform teaching and learning across the school, in the classroom and to promote improvement'

(Every School a Good School, June 2009)

Learning and Teaching Strategies

Class teachers use a wide range of teaching strategies including effective questioning, self and peer assessment, group work, ICT and individual work to challenge pupils' mathematical thinking and understanding.

'Teachers, drawing on their professional expertise, will use a variety of teaching strategies including whole-class teaching, co-operative small group work and individual work, differentiated where appropriate' (Count, Read: Succeed paragraph 5.3).

The following initiatives are implemented to promote Numeracy across the curriculum:

- Relevant departments display key mathematical words in their classrooms
- Numeracy noticeboard on Maths floor
- Annually, the Numeracy Team organise and facilitate a cross curricular Numeracy Project (Mathematics, Home Economics, Science and Technology Departments)
- Year 8 Maths Club (Tuesday 3pm – 4pm)
- Numeracy Quizzes (Years 8 and 9)
- Maths Interact Day (Year 8 pupils, P6 pupils from Feeder Schools)

Effective Use of ICT

ICT is used to support learning and teaching in Numeracy lessons and across the curriculum. Every classroom has an Interactive Whiteboard and ICT Suites are available on request. iPads and Netbooks are available for use in classrooms. The Mathematics Software Package MyMaths (www.mymaths.co.uk) and the C2K online learning environment FRONTER are used to support independent learning.

Assessment and Target Setting:

Annually, SLT set SMART targets, in consultation with the Numeracy Coordinator and Mathematics Department, for KS3 and GCSE Mathematics based on end of year exam statistics, baseline data and annual target setting information.

Key Stage 3:

The school collates a range of Mathematics Assessment Data including Arithmetic Ages, Key Stage 2 Results, MidYis, NFER Progress in Maths Test Results, Christmas and Summer Results.

NFER Testing

All Year 8 - 10 pupils will be tested using the NFER Progress in Maths (PIM) Tests. The tests will occur at the following times throughout the year:

- Year 8: September and June (PIM 11 and PIM 12)
- Year 9: June (PIM 13)
- Year 10: June (PIM 14)

This information will be regularly analysed by the Raising Standards Team which includes the SENCO, Numeracy Coordinator, Transition Coordinator and the Raising Standards Leader and used to identify those pupils who are underachieving and those with Special Educational Needs.

Assessment and Reporting at KS3

Assessment plays a key role in helping schools improve outcomes. Knowing how each pupil is performing allows teachers to implement strategies to help individuals improve. This in turn promotes improvement at class level, then at school level, allowing the school to set meaningful and challenging targets in its School Development Plan. Summative assessment plays an equally important role. It allows schools to monitor the progress of individual pupils, keeping parents and pupils informed about their progress, particularly at important key stage transitions.

From September 2012, statutory assessment of the cross Curricular Skill 'Using Mathematics' at KS3 will take the form of teacher assessment with moderation.

The Mathematics Department will engage in the process of **internal standardisation** which is a collaborative process by which teachers consider work produced by each Year 10 pupil and, using pre-determined criteria, reach a common agreement on standards as being typical of work at a particular level.

A level will be awarded to each pupil for Using Mathematics – this will be the outcome of a holistic assessment of pupil performance in Using Mathematics based on evidence of the two components

‘The Requirements’ and ‘Knowledge and Understanding’. The two components will need to be assessed as at, or above, the level for an overall level to be awarded.

In the first two years of the statutory assessment arrangements for Communication and Using Mathematics, schools will be moderated by CCEA in one skill during the first year (2012/13) and the other skill in the second (2013/14); therefore, after two years, all schools will have been moderated in both these skills. From 2014/15, each school will be moderated in one skill each year, on a rolling programme.

In March each year, the Mathematics Department will submit outcomes to CCEA indicating the awarded levels for **all** pupils in Year 10.

If Using Mathematics is being moderated by CCEA, the Mathematics Department will submit evidence of a stratified sample of pupil work (*pupil portfolios*) for external moderation. Each pupil’s portfolio should contain three samples and should address the two main components of the Cross-Curricular Skill – **‘The Requirements for Using Mathematics and the related Knowledge and Understanding’**. One of the samples **must** be from a **CCEA Assessment Task**.

CCEA will provide feedback to schools in advance of reporting outcomes to parents. After levels have been finalised, parents will receive the annual report indicating the level awarded for Using Mathematics with written comments.

Using Mathematics is the skill of applying mathematical concepts, processes and understanding appropriately in a variety of contexts. Ideally these should be in relevant real life situations that require a mathematical dimension.

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.

Link to Levels of Progression in Using Mathematics:

http://www.nicurriculum.org.uk/docs/skills_and_capabilities/cross_curricular_skills/new_levels/UMaths/UMaths_1-7.pdf

Key Stage 4:

Mathematics is the skill of applying mathematical concepts, processes and understanding appropriately in a variety of contexts. Ideally these should be in relevant real life situations that require a mathematical dimension.

Through effective learning and teaching pupils develop skills in:

- using mathematical language and notation with confidence;
- using mental computation to calculate, estimate and make predictions in a range of simulated and real life contexts;
- selecting and applying mathematical concepts and problem-solving strategies in a range of simulated and real-life contexts;
- interpreting and analysing a wide range of mathematical data;
- assessing probability and risk in a range of simulated and real life contexts;
- presenting mathematical data in a variety of formats which take account of audience and purpose.

External Assessment at KS4

All pupils are entered for either Foundation or Higher GCSE Mathematics. Pupils complete a Mathematics Module (T1, T2, T3 or T4) worth 45% (Year 11 – June) and a Mathematics Completion Paper (T5 or T6) worth 55% (Year 12 – June).

Internal Assessment at KS4

At the beginning of Year 11 each pupil is awarded a target grade in Mathematics and other subjects based on data such as Key Stage 3 Results, previous assessments and teacher professional judgment and this grade will be used as a benchmark to identify pupil attainment and progress. Teachers will use twelve standardised department assessments at identified times throughout the two year GCSE course. Assessment Manager (C2K) will be used by all departments to monitor pupil attainment.

Intervention strategies will be initiated for those pupils who have been identified as underachieving in a number of subject areas. Mrs Morgan (Raising Standards Leader) will liaise with Subject Leaders, Year Tutors and the School Mentor to coordinate the programme.

Key Stage 5:

‘A’ Level subject teachers promote meaningful opportunities for pupils to apply mathematical knowledge and develop Numeracy within their subject area. Pupils who do not achieve a grade ‘C’ or above in their GCSE Mathematics and are studying ‘A’ Levels in St Mary’s must attend timetabled revision Mathematics classes.

Effective Leadership:

‘School Leaders monitor and evaluate effectively school outcomes, policies, practices and procedures and the School Development Plan itself’

(Every School a Good School, June 2009)

The SLT and the Numeracy Curriculum Team are responsible for the management of the Numeracy Strategy in St. Mary’s. Mrs Maria Leonard (Numeracy Coordinator) will lead the Numeracy Team through the implementation of the Numeracy Strategy and Action Plan. The Numeracy Curriculum Team attend a fortnightly timetabled meeting led by Mrs Leonard. Heads of Departments are responsible for ensuring that they embed Numeracy in their subject area Scheme of Work and

encouraging members of the Department to implement the use of Numeracy in their everyday teaching. The Numeracy Coordinator will promote and coordinate Numeracy across the curriculum. Mathematics teachers will continue to be primarily responsible for developing an understanding of mathematical concepts and procedures however Numeracy **must** be supported in all subject areas. All subjects can include some meaningful opportunities for pupils to apply mathematical knowledge. All members of staff, therefore, have a responsibility to develop and promote Numeracy within their subject area.

The Numeracy Coordinator and members of the Mathematics Department will be available to work with departments as necessary to help promote Numeracy.

Roles and Responsibilities:

Senior Leadership Team:

The Senior Leadership Team have overall responsibility for developing effective practices within the school for Numeracy. The Senior Leadership Team will:

- Monitor, evaluate and review the whole school Numeracy and associated policies;
- Identify key priorities in Numeracy as outlined in the School Development Plan which includes relevant professional training;
- Ensure the school meets all statutory requirements in relation to Numeracy across all Key Stages;
- Develop effective procedures to fully utilise relevant assessment data from Primary Schools to allow ease of transition between Key Stages 2 and 3;
- Analyse assessment data e.g. Key Stage 3, GCSE and GCE results to monitor pupil attainment and progress against whole school Numeracy targets;
- Ensure assessment systems are effective and disseminate data throughout the school to facilitate self evaluation and target setting;
- Present assessment data to Governors and External Agencies e.g. DENI, CCMS, SELB;
- Lead whole school Target Setting ensuring effective procedures for the identification of underachievers and initiate support strategies to raise pupil attainment;
- Ensure consistent whole school approach towards assessment, recording and reporting;
- Monitor, evaluate and review the whole school Numeracy Strategy in line with school policy and statutory requirements.

Numeracy Coordinator:

- Consult with Governors, SLT, HOD's, SENCO, ICT Coordinator and External Agencies (including CCEA, DENI, local financial institutions);
- Provide leadership, guidance and direction for the delivery of Numeracy across the curriculum;
- Encourage improved standards, understanding and competence in Numeracy;
- Take a lead in Numeracy Policy development in consultation with SLT;
- Devise the whole school Numeracy Action Plan and ensure the actions are fully implemented in consultation with the Numeracy Team;
- Purchase Numeracy resources and share with relevant departments;
- In consultation with the Mathematics Department organise Educational Visits and Maths Fun Days;

- Coordinate the implementation of Numeracy related projects between relevant departments;
- Organise and plan relevant Staff Development Training.

Head of Mathematics:

- Provide leadership, guidance and direction for the delivery of Mathematics/Using Maths within the department and across the curriculum;
- Devise, implement and monitor department policies in line with the whole school policy;
- Coordinate the introduction and implementation of the Using Maths Assessment and Reporting arrangements in school;
- Effectively use assessment and whole school data, both internal and external, to facilitate target setting and self evaluation within their department;
- Identify relevant training opportunities for department members in relation to aspects of Numeracy/Using Maths;
- Develop effective department Numeracy strategies for those pupils who have Special Educational Needs;
- Collate and analyse relevant formative and summative assessment data within the Mathematics Department and report to the Principal and SLT in relation to all aspects of assessment when required.

Heads of Department:

- Devise, implement and monitor the Departmental Numeracy Policy in line with the whole school policy;
- Ensure Numeracy is embedded in their subject area Scheme of Work and encourage members of the Department to implement the use of Numeracy/Using Maths in their everyday teaching;
- Effectively use assessment and whole school data, both internal and external, to facilitate target setting and self evaluation within their department;
- Identify relevant training opportunities for department members in relation to aspects of Numeracy/Using Maths;
- In consultation with the Mathematics Department, develop effective department Numeracy strategies for those pupils who have Special Educational Needs;
- Collate and analyse relevant formative and summative assessment data within the department and report to the Principal and SLT in relation to all aspects of assessment when required.

Subject Teachers:

- Implement the whole school and department Numeracy Policies;
- Promote meaningful opportunities for pupils to apply mathematical knowledge and develop Numeracy within their subject area;

SENCO:

- Liaising with other staff, identify pupils with Special Educational Needs and assess their specific mathematical needs;
- Working with other staff, develop and support appropriate assessment arrangements for pupils on the SEN register;

- Ensure statutory requirements are met to support pupils on the SEN register during external examinations;
- Monitor and evaluate the performance of pupils on the SEN register, reporting to parents and other stakeholders at set times throughout the year;
- Lead whole staff training in relation to assessment arrangements for special needs pupils.

Raising Standards Leader

- The Raising Standards Leader is responsible for the effective use of Assessment Data within the school to raise pupil attainment;
- The Leader will coordinate whole staff training on the effective use of data to monitor pupil progress across all Key Stages and disseminate data to staff;
- Initiate procedures within the school to identify students who are:
 - ✚ Gifted and Talented
 - ✚ Underachieving
 - ✚ Special Educational Needs
- Lead the Raising Standards Team within the school to co-ordinate and monitor pupil attainment in Literacy and Numeracy;
- Co-ordinate the whole school Mentoring Programme to support pupils who are underachieving;
- Develop communication procedures to inform parents regarding their daughter's progress and areas for improvement. This will include information evenings, study skills programmes, parent and student guides.

Community Links

'Good relationships that facilitate engagement and communication between the school and its parents and the wider community that it serves'

(Every School a Good School, June 2009)

As a result of being awarded Specialist Schools Status in Mathematics and Business and as an Extended School, St Mary's has established quality, sustainable links with our Partner Primary and Post Primary School, local businesses and community groups. These links develop a collaborative learning culture which enhances the curricular and extra curricular opportunities and the learning and teaching experience of pupils in all key stages. We have contributed to the development of an enterprise culture, in line with current government policy exemplified through the CEIAG, STEM and curriculum provisions across all key stages.

Parents:

- Annual Parent Teacher Meetings (Terms 1 and 2);
- Year 11 Transition Seminar (August);
- Mathematics Department Area on school website (www.stmarysnewry.com);
- Numeracy Guide for Year 8 parents;

Primary Schools:

- Year 13 pupils participate in the ' Maths Mentors Programme' in three local Primary Schools (St Clare's, St Malachy's and St Ronan's). The pupils visit their allocated Primary School once or twice per week to support the Classroom Teacher during Numeracy lessons;
- Primary Schools participate in annual Numeracy Fun Morning in St Mary's organised by Mathematics Department;

- Established links between Numeracy Coordinators in St Mary's and St Clare's Primary School to discuss the KS2 and KS3 Numeracy Curriculums and the transition between KS2 and KS3.

Post Primary Schools:

- Head of Mathematics shares good practice with other Mathematics Departments in the SELB area;
- Staff Development: Mathematics Department share good practice with other Mathematics Departments in Area Learning Community.

Local Businesses and Financial Institutions:

- Danske Bank and Year 13 pupils organise and run the 'School Bank' for Year 8 pupils;
- Danske Bank, Ulster Bank and First Trust Bank delivers financial capability and responsibilities lessons to GCSE pupils in Mathematics and Numeracy related subjects.

Extended Curriculum:

- Year 8 After School Maths Club;
- After school KS3 and GCSE Mathematics booster classes;
- Year 8 annual Maths Fun Day;
- Educational Visit to W5.

Related Whole School Policies:

This policy is set within the broader school context of Curriculum and as such should be implemented in conjunction with the following school policies:

- Learning and Teaching Policy
- Assessment Policy
- Homework Policy
- Marking and Presentation Policy
- SEN Policy
- Literacy Policy
- ICT and e Safety Policies

All policies are available from the school website www.stmarysnewry.com.

Monitoring, Evaluation and Review:

As Numeracy Coordinator, Mrs Leonard is responsible for monitoring, evaluating and reviewing the promotion of Numeracy across the curriculum. The whole school Numeracy Policy and Action Plan will be revised on an annual basis in line with statutory requirements. Mrs Leonard will report annually to the Principal and SLT on the development and progress of Numeracy based on the success of the Action Plan and targets set.

- Heads of Departments will ensure that Numeracy is incorporated in schemes of work;
- Heads of Department will ensure that their departments' Numeracy Action Plan has been revised in line with whole school policy;
- The Curriculum Team will monitor and evaluate the implementation of the Numeracy Policy;
- The Numeracy Coordinator will be responsible for evaluating the progress of whole school approaches to Numeracy;
- The Numeracy Coordinator will be responsible for reporting progress under this policy to the SLT on an annual basis.