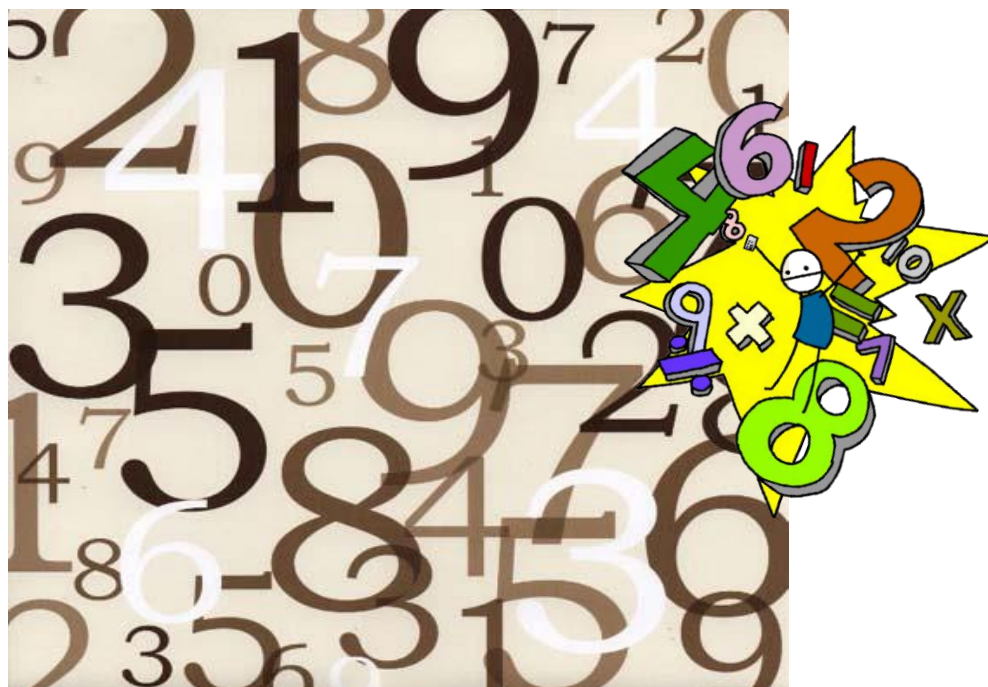




NUMERACY POLICY

COUNT AND SUCCEED RAISING ACHIEVEMENT IN NUMERACY

'Literacy and numeracy is every school's core business. All concerned need to be aware that ensuring their students are literate and numerate is their most important curricular responsibility. A school which is not effective in this respect cannot be judged as an effective school'
(DENI – School Improvement 2008)



MISSION STATEMENT

"In partnership with parents, guardians, governors, staff and students St Louise's promotes excellence in learning and teaching within a Catholic, Vincentian, Comprehensive ethos"

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Raising Achievement in Numeracy

- ✓ Our Numeracy Policy is seen as a key policy within St Louise's reflecting the key elements of Every School a Good School, Count, Read: Succeed and the Joint Report by the Education and Training Inspectorate and the Department of Education and Skills Inspectorate on Promoting and Improving Numeracy in Post Primary Schools (April 2015)
- ✓ Literacy and Numeracy developments are reflected in our Whole School Development Plan and within our Learning and Teaching Action Plan under Driver 3 – Literacy, Numeracy and ICT not only within the Maths and English Departments but across all Departments
- ✓ Targets are shared at Whole School Level and as part of the Whole School and Departmental Action Planning Process
- ✓ The English and Maths Departments work closely to track each learner in line with our 5A* - C including English and Maths targets
- ✓ The STEM Team supported by two members of the Maths Department led by the Curriculum Vice Principal supports the development of Mathematics across the Curriculum. The team involves representatives from:
 - Science
 - Home Economics
 - ICT
 - Geography
 - Technology and Design
 - CEIAG
 - Art

SECTION 1

1.0 OVERVIEW

As a staff we are fully committed to developing numeracy skills in all our students, in the belief that it will support their learning and raise standards across the curriculum because:

- ✓ the development of numeracy skills is a basic entitlement for all;
- ✓ all students should experience a rich numeracy learning environment regardless of perceived 'ability';
- ✓ numeracy involves the application of knowledge, skills and understanding essential for personal and social development and to life long learning. It is an essential skill that enables the young person to develop as an individual, and as a contributor to society and the economy;
- ✓ numeracy will enhance the learning of individuals in all other areas of the curriculum, their self – esteem, their employability and their life chances and help break the cycle of social and economic disadvantage;
- ✓ numeracy/mathematics can be used to describe, illustrate and explain. Above all it can be used to convey meaning and provides a means of communication which is powerful, concise and unambiguous;
- ✓ numeracy must be an experience from which all students derive pleasure and enjoyment; and
- ✓ mathematics is the universal abstract language which underpins much of the understanding in science, engineering and technology and is vital to the success of the 'knowledge economy'.

1.1 Rationale

The information and technological revolution of the late 20th century and the almost limitless access to information on the internet at the beginning of the 21st century, has placed a renewed emphasis upon the importance of transferable skills and the primacy of literacy and numeracy as gateways to learning. In response to this, the revised curriculum placed a renewed emphasis on the cross-curricular development of literacy and numeracy by defining the skills of Communication, and Using Maths as a cross-curricular responsibility (alongside the existing cross-curricular skill of ICT).

Count, Read: Succeed and Every School a Good School leads the way with a strategy to improve Literacy and Numeracy by recognising the importance of 'joined up thinking' in schools.

It is therefore through the revision of our School Numeracy Policy and Strategy that we in St Louise's take account of the Count, Read: Succeed alongside the NI Curriculum which has, at its core, a strong emphasis on the fundamental skills of using mathematics and will be clearly supported by a framework of assessment for and of learning. This builds on the prior knowledge, skills and understanding established in the primary phase of a child's education and developed throughout their post primary schooling at Key Stages 3, 4 and 5.

1.2 Definition of Numeracy

Numeracy is defined as: *'The ability to apply appropriate mathematical skills and knowledge in familiar and unfamiliar*

contexts and in a range of settings throughout life, including in the workplace. It involves the development of:

- ✓ an understanding of key mathematical concepts;
- ✓ 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'.

SECTION 2

2.0 AIMS OF THE POLICY

Students have an entitlement to participate in programmes within the Mathematics classrooms and through the provision of learning opportunities in other areas of the curriculum which offer 'challenge and enjoyment, breadth, progression, depth, personalisation, choice and coherence' in relation to numeracy and the development of Using Mathematics across the curriculum.

The overall aims of our policy are:

"to ensure that every learner fulfils her or his potential at each stage of their development". Fulfilling this vision is underpinned by the emphasis placed in the five pillars identified as priorities by DE:

- a. raising standards for all;
 - b. closing the performance gap, increasing access and equity;
 - c. developing the education workforce;
 - d. improving the learning environment; and
 - e. transforming education management.
- (Count, Read: Succeed)*

In line with Count, Read: Succeed; Every School a Good School and the Northern Ireland Curriculum we aim:

- ✓ to raise numeracy levels across the curriculum by employing a range of strategies that will enable students to access the curriculum with increasing confidence
- ✓ to increase motivation and enthusiasm by providing challenging lessons and opportunities for our students

- ✓ to enable our students to develop as individuals, and as contributors to society and the economy
- ✓ to develop a better co-ordinated and greater cross curricular emphasis on numeracy that supports all teachers in recognising and exploiting opportunities to support the development of numeracy through their teaching
- ✓ to support the development of numeracy through assessment for learning processes
- ✓ to provide a clear framework of accountability, with progress in numeracy much more closely tracked at class and school level to ensure that improvement is achieved and maintained
- ✓ to improve linkages between school and home, with more information for parents and carers about how they can help and support their children to enjoy and do well in numeracy
- ✓ To provide INSET that is relevant, up to date and meaningful
- ✓ To provide continuity across the curriculum

Overall success criteria

Numeracy Targets

Key Stage 3 Targets		GCSE		School Leavers (or equivalent)	
Level 5+	Level 6+	A* - C	A* - E	A* - C	A* - E
70%	30%	55%	95%	80%	100%

2.1 Development of Numeracy – Development of Skills of Using Mathematics in Our Students

Using Mathematics consists of two aspects. Students need to demonstrate competence in both these aspects to progress to the next level.

Coverage/Range	The Requirements
<p>The Mathematics – What students know, understand and can do</p> <p>The coverage/range focuses on mathematics that can be used across the curriculum. It includes a breadth of mathematical knowledge; encompassing Number and Algebra, Shape, Space and Measures; and Handling Data.</p>	<p>The Using –</p> <p>How students are able to use their knowledge and understanding (the coverage/range) across the curriculum (including within the Mathematics classroom) to communicate, manage information, think critically, solve problems and make decisions.</p>
<p>Across the curriculum, at a level appropriate to their ability, students should be enabled to:</p> <ul style="list-style-type: none"> ✓ 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 to present their work 	

SECTION 3

3.0 OUR NUMERACY POLICY AND STRATEGY

Our Numeracy Policy and Strategy are clearly defined under the **three wave approach**:

3.1 Quality Whole Class Teaching

The starting point in raising numeracy levels within St Louise's is through high quality whole class teaching linked to our Learning, Teaching and Assessment policy and the Outstanding Lesson Framework and the implementation of Maths Mastery. Maths Mastery is a curriculum designed on providing students with a deeper understanding of mathematical concepts. The challenges comes from investigating ideas in new and complex way- rather than accelerating through new topics. It focuses on problem solving enabling learners to solve new problems in unfamiliar contexts and developing the ability to identify, apply and connect ideas using apparatus. Maths Mastery also places great emphasis on the development of mathematical language to strengthen conceptual understanding, therefore enabling students to explain and reason. There are opportunities for acquisition and development of planned learning opportunities which offer 'challenge and enjoyment, breadth, progression, depth, personalisation and choice, coherence and relevance' in relation to numeracy and Using Mathematics. This involves planning for numeracy, not only in Mathematics and numeracy within the Mathematics Classroom but across the curriculum. The mapping out of the Northern Ireland Curriculum at Key Stage 3 and the development of high quality learning opportunities through effective assessment

ensures that all students develop the knowledge, understanding and skills specified in the statutory requirements. These developments are also supported by the STEM team with a key focus on the integration of Using Mathematics elements within the following key subjects: Art, Technology and Design, Science, Geography, Home Economics and ICT.

3.2 Quality teaching plus additional support for identified students

Through baseline data (CATS and PTM (Progressing Testing in Maths) and within the well defined framework based on the tracking of progress as defined within our assessment policy, students are identified for additional support. This enhanced provision at Key Stage 3 is delivered through a well developed Numeracy Programme. This numeracy programme is co-ordinated by the Numeracy Co-ordinator.

3.3 Quality teaching plus personalised support to meet the needs of individual students

More personalised support is initiated by the SENCO and Curriculum Vice Principal in liaison with the AEN Team and Numeracy Co-ordinator at Key Stage 3. This involves withdrawal from the Mathematics classroom for one to one support and small group support. These students are identified using PTM data year on year.

SECTION 4

4.0 IMPLEMENTATION OF POLICY AND STRATEGY

4.1 Roles and Responsibilities

Mathematics Department – provide students (and staff) with knowledge, skills and understanding required for the acquisition and development of mathematics;

Numeracy Co-ordinator- develops with teaching colleagues a school wide numeracy skills continuum and builds relationships and network in respect of numeracy. The Numeracy Co-ordinator will also promote the use of Mastery across the curriculum with staff and students at KS3 and work with teachers in order to set targets for students and track and review their progress.

Teachers across the curriculum: contribute to students' development of mathematics through providing students with opportunities to apply mathematical concepts, processes and understanding appropriately in a variety of contexts.

Core Curriculum Team Link Teacher supports departments in the implementation of strategies and encourages departments to learn from each other's practice and to share ideas

SENCO works closely with the Curriculum Vice Principal, the Numeracy Co-ordinator and AEN Team to ensure that intervention is put in place where required.

SLT provides effective leadership focusing on strategic planning for Numeracy Across the Curriculum

4.2 Wave 1 Whole Class Teaching within the Maths Classroom and Across the Curriculum

Setting of Classes at Key Stage 3

In September 2017 St. Louise's moved to a model of mixed attainment setting. This required careful planning in terms of class setting to ensure that all classes had an equal balance across the range of SAS. Using CATS information, PTE, PTM and Primary School Data the classes were set. The classes are set at the beginning of each academic year by the Pastoral Vice Principal and Transition Co-ordinator, supported by the Numeracy Co-Ordinator, Assistant Head of Maths, Literacy Co-ordinator, SENCO and the personnel in charge of the Year Group.

This process allows for the setting of classes based on the key batteries:

- ✓ Thinking with Words – **Verbal Reasoning Battery**
- ✓ Thinking with numbers – **Quantitative Reasoning Battery**
- ✓ Thinking with shapes – **Non Verbal Reasoning Battery**
- ✓ Thinking with shape and space – **Spatial Ability Battery**

The classes are profiled and the Transition Co-ordinator shares this information with all staff. This profiling allows for the identification of strengths in numeracy (and literacy) and areas for development.

Setting of Classes at Key Stage 4

Classes at Key Stage 4 in Mathematics are set based on Key Stage 3 outcomes in Mathematics and through the use of PTM data.

4.2.1 The Mathematics Classroom

In the teaching of Mathematics at Key Stage 3 and Key Stage 4, the main aim is to enable students to acquire and develop the knowledge, skills and understanding linked to the coverage/range identified under the key areas of **Number and Algebra; Shape, Space and Measures and Handling Data**. The Maths Mastery curriculum is based on the principles of developing a deeper understanding mathematical concepts acquired through problem solving and supported through the use of apparatus and language development. Within the mathematics curriculum financial capability is also another key element addressed.

The Mathematics Classroom at Key Stage 3

The schemes of work are written in line the Maths Mastery Programme and the Outstanding Lesson Framework. Alongside the schemes of work there are 3 Year / Seven Year Curriculum Overviews and Planning and Evaluating Mats used by teachers to aid lesson delivery.

These schemes outline the:

- ✓ Learning Intentions
- ✓ Success Criteria
- ✓ Planned teaching and learning opportunities

- ✓ Assessment for Learning Opportunities which are 'stepped' and therefore inform the learning process on an ongoing basis and summative learning opportunities which take place on a monthly basis

All students at Key Stage 3 receive Learning and Assessment Calendars and Topic Models which clearly outline their learning and assessment process.

The Mathematics Classroom at Key Stage 4

At Key Stage 4 and Post 16, schemes of work are written within the same framework. Students receive Learning and Assessment Calendars and Topic Models at GCSE and A' Level.

4.3 Development of Numeracy across the Curriculum/Using Mathematics

As described in section 4.2.1 within the Mathematics classroom, students acquire and develop knowledge, understanding and skills. Using Mathematics is the skill of applying mathematical concepts, processes and understanding appropriately in a variety of contexts. With the introduction of the Maths Mastery curriculum there is a strong focus on the application of knowledge in a range of contexts across the curriculum. Students have opportunities to demonstrate, apply and transfer their knowledge, understanding and skills in a variety of settings across the curriculum.

Acquisition

Students are taught both the 'what' and 'how' of Using Mathematics. This occurs naturally in the Area of Learning of Mathematics with Financial Capability, but is also acquired in other relevant contexts across the curriculum. For example, students learn how to use aspects of Handling Data in Science.

Development

Students are given opportunities to demonstrate, apply and transfer their Mathematical knowledge, understanding and skills in a variety of contexts across the curriculum.

All subjects have a role to play in developing students' Using Mathematics skills by providing opportunities for them to demonstrate, practice, apply and transfer these skills.

All teachers will contribute to the day to day formative assessment of Using Mathematics e.g. through feed back to students (Learning Points) and peer/self assessment.

4.4 Whole School Development of Cross Curricular Skills Classroom Practice – Learning and Teaching

Across the curriculum opportunities are given for the development of mathematical skills and the inclusion of financial capability with a focus on the following key departments: Art, Home Economics, Geography, Science, ICT and Technology and Design.

Departments plan their learning and teaching programmes in order to meet the following requirements. Students are 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 forms
- ✓ 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 to present their work

All departments will ensure that:

- ✓ the glossary of key terms is used as a reference in all subjects
- ✓ Numeracy Boards are displayed
- ✓ Using mathematics and the development of financial capability are clearly mapped out within each Area of Learning throughout Key Stage 3
- ✓ correct and consistent conventions are used in the interpretation and construction of graphs

- ✓ the cross-curricular skills of Using Mathematics, Using Communication and ICT are clearly signposted on all schemes and units of work
- ✓ concepts maps for the connected curriculum at subject level clearly specify the opportunities for the development of using mathematics
- ✓ WALT and success criteria must be displayed for all students taking account of the development of numeracy as a cross curricular skill
- ✓ resources are adapted to accommodate numeracy strategies in liaison with the Mathematics department
- ✓ assessment tasks should take into account the development of knowledge, understanding, thinking skills and using mathematics as stated in the levels of progression at Key Stage 3. Students will be given opportunities to progress throughout Key Stage 3
- ✓ topic models clearly signpost opportunities for the development of using mathematics
- ✓ ICT is used to support learning.

Enrichment Opportunities in Mathematics

- Maths Week Ireland
- Year 8 Problem Solving
- Treasure Hunts
- Manga Maths

- Year 8 and 9 Maths Club
- Range of STEM Activities
- Halloween and Christmas Competitions at KS3

4.5 Wave 2 – Quality teaching plus additional support for identified students

Numeracy Support Programme in Mathematics

In order to identify the students who require additional support, information is collected through end of key stage levels, CATS testing, PTM and qualitative data from the primary school teachers. Students are identified as requiring additional numeracy support. These programmes will provide opportunities for learners of all aptitudes and abilities, at all stages to:

- ✓ experience an appropriate level of challenge to enable each individual to achieve their potential in numeracy
- ✓ be actively involved in applying numerical, mathematical and statistical skills in everyday situations and in more abstract contexts.
- ✓ be given opportunities to understand the relevance and application of numerical skills in a variety of cross curricular contexts
- ✓ experience continuous and coherent progression in developing numerical skills
- ✓ build upon previous skills and understanding of numeracy at each stage of learning, ensuring a smooth progression of skills development and a pace of learning matched to individual needs.
- ✓ understand the value and the relevance of number work in the context of life long learning

Year 8 and Year 9

In the first term of Year 8, students in the class which has been allocated additional support are given a series of diagnostic tests to reveal their competence in the following key areas:

- addition
- subtraction
- multiplication
- division
- place value
- problem solving

An intervention programme based on need is then provided.

A similar process is incorporated into Year 10, with students assessed each year and their needs met accordingly.

Introduction of PTM at Key Stage 3

The introduction of PIM testing at the beginning of the school year offers further opportunities to profile pupil strengths and areas for improvement. Every class teacher will develop a class action plan which identifies key areas of development at class level and at individual pupil level. These standardised tests are used to identify those students...

- who have difficulties
- who are mathematically gifted

Standardised testing is used to monitor progress at..

- individual level..

- class level...
- year group level...

The PTM data is tracked by the HOD and Assistant Head and regularly reviewed with the Principal and Vice Principal

Special Educational Needs

The SENCO, the Numeracy Co-ordinator, Transition Co-ordinator and AEN Team work closely to support the students with SEN. Every pupil on the SEN Register will have an PLP which outlines Literacy, Numeracy and General Targets.

Key Stage 4

Classes in Year 11 are set based on Key Stage 3 Levels and PTM scores at the end of Year 10. Within the KS4 framework the composition and size of the groups are based on the needs of the learners.

4.6 Wave 3 – Quality teaching plus personalized support to meet the specific needs of individual students

Resulting from teacher observation and the assessment procedures, including the use of PTM data, students requiring individual support or smaller group support are identified and a programme of support put in place. This support is monitored by the support teacher, the classroom teacher and Numeracy Co-ordinator.

SECTION 5

5.0 MONITORING AND EVALUATION

A successful outcome is when monitoring and evaluation of progress shows that the pupil is performing at a level consistent with her or his potential. *Count, Read: Succeed.*

Why monitor and evaluate our Numeracy Policy?	What will we monitor and evaluate?
To promote quality learning and teaching To promote an ethos of reflection and self evaluation within the school To clarify why and how we do things? To identify obstacles to progress To check consistency and progression To check that planning is consistent with the requirements of the Northern Ireland Curriculum To check planning is effective within the classroom To check children are learning effectively To assist further planning To keep abreast of current Department of Education policies	Plan Action plan Units of work Topic models Assessment for learning opportunities – quality of S.L.O. and L.O. Classroom Practice Learning Environment Use of Learning Support Staff Student Progress Level of Achievement

5.1 How will we monitor and evaluate?

➤ Achievement Data

Quantitative

1. Internal assessment data related to progress updates
2. Key Stage 3 Assessment Data – use of CATS Data (value added measure) and PTM Data (Progressing in Mathematics) against FSM
3. Levels of progression related to Using Mathematics
4. GSE Results
 - % A* - C in Maths against FSM;
 - % A* - E in Maths against FSM;
 - % A* - G in Maths against FSM; and
 - 5A* - C including English and Mathematics against FSM.

Qualitative

- 5.2.1** The SLT monitor and evaluate the quality of pupil experience and pupil outcome through:
- Attendance at weekly Maths Mastery Meetings
 - Examination of pupil work through Book Looks using well defined success criteria based on assessment for learning criteria for learning opportunities;
 - Whole school audit of Using Mathematics opportunities throughout the curriculum;
 - Monitoring the quality of departmental planning through evaluation of Learning and Assessment Calendars and Topic Models;
 - Engaging in regular classroom visits;

- Monitoring the quality of the learning environment using quality indicators; and
- Monitoring the quality of pupil experience through pupil voice based on classroom strategy.

5.2.2 Heads of Department will monitor and evaluate the quality of pupil experience and pupil outcome through:

- Regular Book Looks;
- Examination of Departmental Documentation and Performance Data;
- Sharing of Good Practice identified in high quality pupil outcomes;
- Surveying the learning environment based on quality indicators;
- Trusted Colleague Networking (TCN);
- Cross moderation of pupil work through portfolio outcomes; and
- Student voice examining pupil experience.

The Head of Department, Numeracy Co-ordinator and SENCO will support the School Improvement Team in areas stated in 5.2.1 above

ADDITIONAL MEASURES TO IMPROVE NUMERACY

Role of Numeracy Co-ordinator and Transition Co –ordinator

- 1. Improve linkages between St. Louise's and feeder primary schools** with the intention of improving communication and planning on numeracy issues between schools when students transfer phase by:
 - improving inter-school communication and planning on numeracy issues
 - improving the transfer of data

- 2. Improve linkages between school and home, by developing**
 - better information for parents and carers about how they can help and support their children to enjoy and do well in numeracy

- 3. Improve staff development and performance review (PRSD) that** reflects the progress of individual teachers in the development of Numeracy

- 4. Provide relevant, up to date and meaningful school-based INSET** for colleagues focused on the improvement of numeracy

- 5. Improve our school self-evaluation and self-assessment, to critically evaluate**
 - the impact of learning and teaching strategies on numeracy development

- numeracy interventions we use particularly in relation to developing the students' numeracy skills, for example, small group intervention, Numeracy Programme and ICT based numeracy development