St Bronagh's

Numeracy

Policy
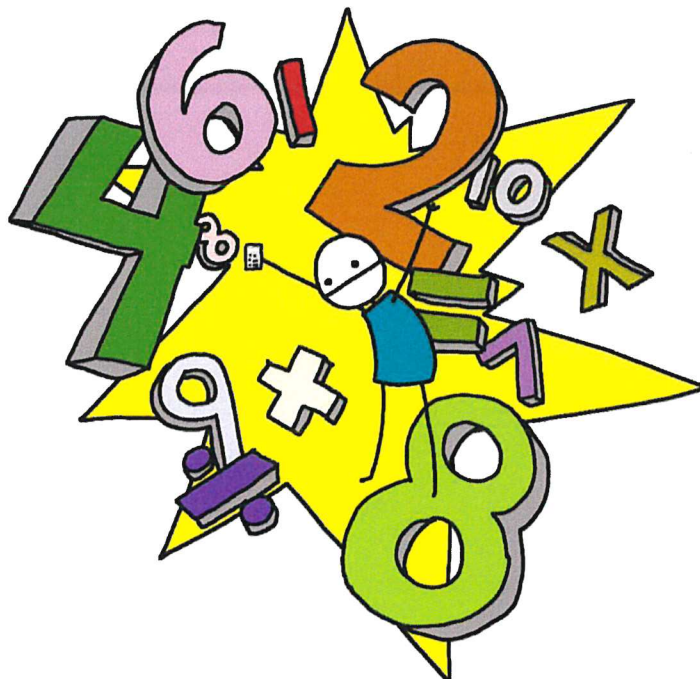
CONTENTS: PAGE

APPENDIX 1 - THE STATUTORY REQUIREMENTS FOR MATHEMATICS AND NUMERACY

APPENDIX 2 – YEARLY OVERVIEWS P1-P7

APPENDIX 3 – MEDIUM TERM PLANNING (TEMPLATE AND SAMPLE)

APPENDIX 4 – MENTAL MATHS PLANNING (TEMPLATE AND SAMPLE)

APPENDIX 5   - ASSESSMENT-**SCHEDULE OF TESTING**

APPENDIX 6 – WHOLE SCHOOL AUDIT OF NUMERACY BOOKS AND EQUIPMENT

APPENDIX 7 – NUMERACY AND ICT

APPENDIX 8 – USEFUL WEBSITES

(These appendices can be accessed online through the staff site. In the staff site, click on the 'POLICIES' folder, then the 'Numeracy Policy' folder)

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 within 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 of numeracy in our school, drawing on the indicators of effective provision from *"Every School a Good School"* using the four headings noted above.

At St Bronagh's PS we believe that numeracy skills are the key to future educational success 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 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:

- 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)
- Active participation in the exploration of mathematical ideas and models

OBJECTIVES OF NUMERACY POLICY:

At St Bronagh'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 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

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

STATUTORY REQUIREMENTS:

The detailed statutory content requirements are set out in the NI Curriculum (primary) document (CCEA 2007) and together with the progression exemplified in the revised Lines of Development document (CCEA), informs our Scheme of Work for Mathematics.

The NI Curriculum (primary) document also sets out guiding principles, which we endorse and have agreed to include in our policy:

Foundation Stage (p.23), including:

- Activities should involve children in playing, exploring and investigating, doing and observing, talking and listening and asking and answering questions
- Through engaging in a wide variety of activities, children should understand mathematical language and then begin to use the language to talk about their work
- Mathematical activities should be presented through contexts that have a real meaning for children and provide opportunities for them to investigate their ideas

Key Stage One and Two (p.57 – 60), including:

- Mathematical ideas should be introduced to children in meaningful contexts
- Activities should be balanced between tasks which develop knowledge, skills and understanding, and those which develop the ability to apply mathematical learning and solve problems
- Children should use their knowledge of mathematical language to talk about their work and explain their findings
- Children should be given regular opportunities to develop their skills in mental mathematics, to estimate and approximate and to investigate and make predictions and decisions:
    - within mathematics
    - across the curriculum
    - in real-life situations

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 to listen to their views

Inclusion:

We aim to provide for all children so that they reach their full potential in numeracy according to their individual abilities. We will identify which pupils or groups of pupils are under-achieving and those with low achievement or special educational needs in order to take steps to improve their attainment.

Underachievement is used to describe a situation where performance is below what is expected based on ability. It can apply at the level of individual children or describe a class or school, or indeed a system. (Count, Read: Succeed 2011)

Low achievement is where a child is achieving to the full extent of her or his ability, but is well below average compared to her or his peers. (Count, Read: Succeed 2011).

Gifted children will be identified and suitable learning challenges provided.

Planning:

Yearly Overviews

Mathematics and Numeracy Yearly overviews are in place for each year group and these form the basis for teachers to plan and deliver the curriculum for their designated class. These overviews provide a line of continuity and progression as identified in 'The Northern Ireland Curriculum (Primary)'; the 'Revised Lines of Development' and the Levels of Progression in 'Using Mathematics' across the curriculum.

Half Term Planning

Teachers write 'Half Term Plans' for Numeracy. These outline what teachers intend to teach and the learning activities they will be using to achieve their intentions. They are written in line with the yearly overviews and are reviewed by the Numeracy Co-ordinator. Evaluation of the previous Half Term Plan is built in which helps to inform future planning. Reference will also be made to

differentiation, ensuring all pupils have the opportunity to be taught a challenging and appropriate curriculum.

Each teacher uses a colour coded system to highlight areas on their planning as follows:

- ICT - blue
- Mental Maths – red
- Processes – green

In Count, Read: Succeed (DENI 2011) the following five steps have been identified:

1. **Provide high quality teaching for all children through:**

- a variety of teaching strategies e.g. practical and written tasks
- a range of learning experiences
- different grouping strategies
- clearly defined differentiation

This is outlined in more detail in the section on High Quality Teaching and Learning

2. **Address underachievement as soon as it emerges**

Pupils will be primarily identified by the class teacher through formative assessment and monitoring arrangements carried out in that class. Data from the summative assessment is analysed anually by the class teacher, Numeracy Co-ordinator, Assessment Co-ordinator, SENCo and Principal. From P.4 standardised scores will have been obtained and using these, each child's performance will be closely analysed. Results will all be put onto Assessment Manager where staff have shared access.

The assessment arrangements in place at St. Bronagh's P.S. complement the curriculum, by attaching priority to progression in numeracy and providing an effective means for assessing children's progress. This will inform teaching, planning and any necessary learning interventions.

We identify underachievement through:
- Observations carried out in the Classroom
- Standardised tests as outlined in Appendix 5
- Formative assessment
- Discussions and liaison between class teachers, support staff, Numeracy Co-ordinator, Assessment Co-ordinator and SENCo.

As soon as any potential or actual underachievement is observed or identified we ensure early intervention to support children with special or additional educational needs. This includes those who do not have the language skills to access the curriculum and we aim to support inclusion for all of our pupils.

In order to improve numeracy all data collected is analysed and used by teachers to forward plan how to meet the needs of each child.

To identify underachievement we use our standardised results (PIM) and compare them with an ability test score (NRIT). Those children that have a difference of more than 10 may receive additional support if deemed appropriate. We carry out NRIT testing in P.4 and P.6.

Summative assessment has an equally important role in our school as it enables us to monitor and evaluate the progress of individual children. It enables us to inform parents and children about their progress, especially at their Key Stage transitions. It also provides us with valuable information into how effectively we are providing children with the appropriate levels of knowledge and skills in numeracy.

When deciding what additional support is necessary the Numeracy Co-ordinator and class teacher will consider the appropriate form of support within each class setting. This could take the form of focused independent work, differentiated resources, support group sessions and/or classroom assistant support.

Children who are able and talented in Numeracy are given the opportunity to develop and add to their skills through differentiated work, the completion of set extension tasks and completing work from extension textbooks such as the Spotlight on Maths series, Heinemann Plus Word Problems and Target Maths.

3. Addressing continuing underachievement with support from other staff in the school

Those children who continue to underachieve despite the in-class support outlined in Step 2 may be set more focused targets on an Individual Education Plan (IEP) or a Record of Concern (ROC). This may be done by the teacher and the SENCo in collaboration with the classroom assistant and with input from the child if appropriate. Parents of the children on IEPs are informed of the targets set and the teaching arrangements being put in place. Teachers will formally meet with these parents during term 1 and 2.

4. Address continuing underachievement with support from outside school

Additional support will be sought where necessary. It may come from a range of sources such as:
- EA – CASS
- Health Professionals
- Other agencies, where appropriate

5. Meet the needs of the children after a non-statutory assessment (Stage 1, 2 and 3) through the SEN framework

Children who are identified as low achieving are monitored and placed on the Code of Practice (Stage 1, 2 and 3). Appropriate advice and guidance is sought from SENCO, Board Advisors and educational psychologists.

Equal Opportunities

All children at St Bronagh's are provided with equal access to the Mathematics Curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

The in-class strategies used to ensure all pupils are being challenged and able to achieve targets set for them are:

Intervention programmes	**SEN**
Support groups	Individual Education Plans
CEFR forms for newcomer pupils	ROCs

HIGH QUALITY TEACHING AND LEARNING:

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

- ~~A broad and relevant curriculum is provided for the pupils.~~

- An emphasis on literacy and numeracy exists across the curriculum.

- Teachers are committed and enthusiastic, enjoying a positive relationship with their pupils and with other school-based staff and dedicated to improving learning.

- Teachers 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.

Subject organisation

The Numeracy Curriculum is delivered using the requirements in the N. Ireland Curriculum for Numeracy. In St. Bronagh's the following practices are in evidence -

- year and class groupings are in place
- work is differentiated by task and outcomes, resources and support time
- Classroom Assistants work with individuals and groups as appropriate
- planning – (see Appendix 2, 3 & 4) is in line with the Revised Lines of Development for Mathematics (CCEA)

Work is reviewed through teachers' evaluations, peer editing, personal target setting, observations, marking strategies, use of IEP reviews and/or Records of Concern where appropriate.

Teaching Strategies

There will be a balanced approach to the teaching of Numeracy at St Bronagh's P.S. This will encompass modelled, group work, paired work and independent work and will allow for a range of learning styles. Children will be encouraged to use a variety of learning strategies and all topics will be applied to a real life context when appropriate. These approaches form part of a numeracy programme that will provide opportunities for learning and development across the curriculum.

Approaches to learning and teaching of mental mathematics:

- Interconnections between developing a bank of known number facts, an increasing range of calculations and an increasing range of mental calculation strategies

- Time allocation for mental mathematics at least 10 minutes per day

- Use of games e.g. show me activities, outdoor numeracy games, last man standing, buzz games etc..

- Use of ICT e.g. interactive whiteboard games, various websites (appendix ???)

- Participation in World Maths Day

- Assessment of mental mathematics.

- Progression for mental mathematics within and across year groups

- Children will be afforded opportunities to apply the mathematical skills and knowledge they have learnt to real life situations.

Approaches to learning and teaching in Number:

- Understanding the number system – counting, sequencing, place value, fractions, decimals, percentages

- Calculations – four operations and their relationships

- Strategies to encourage understanding of operations, not just ability to compute answers

- Application of calculation skills in mathematical problem solving, across the curriculum and in real- life situations, especially in selection of operation(s) required

- Application of financial capability skills

Approaches to learning and teaching in Measures:

- Progression: direct comparison of two objects, more than two objects, measuring using non-standard units, recognising need for standard units, measuring using standard units

- Strategies used to enable children to develop accuracy in estimation before measuring

- Use of practical activities

- Opportunities for children to select the appropriate measuring tools and units of measurement

- Children will be afforded opportunities to apply the mathematical skills and knowledge they have learnt to real life situations.

Approaches to learning and teaching in Shape and Space:

- Importance of practical experiences to investigate properties of shapes

- Emphasis on naming shapes by reference to their particular properties

- Exploration of position and movement in real life contexts

- Systematic development of language from informal to formal mathematical definitions

- Importance of experiencing irregular shapes as well as regular shapes

Approaches to learning and teaching in Handling Data:

- Emphasis placed on the application of data handling skills to investigate and make decisions: Identify a question, decide on information required, decide how to gather information, record and analyse information to answer original question, decide how best to display information

- Systematic development of understanding of probability: from informal language to describe likelihood of events occurring, through formal language of increasing accuracy to numerical quantification of likelihood.

- Use of ICT packages to speed up process of constructing graphs and charts

- Children will be afforded opportunities to apply the mathematical skills and knowledge they have learnt to real life situations.

Approaches to learning and teaching in Processes:

- Agreed definition of Processes

In St Bronagh's Primary School the staff have agreed the following definition of Processes in Mathematics:

"Processes in Mathematics are those skills which children develop as they become more able to:
- apply mathematical learning and solve problems
- use mathematical language to talk about their work and explain their thinking
- organise their own work and work systematically "

- Progression of Processes skills development within and across year groups

- Opportunities for children to develop Processes skills e.g. through choosing materials and mathematics required, using a range of problem – solving strategies

- Opportunities for children to plan their own work and work systematically

- Use of open ended questions to encourage children to explain their thinking

- Opportunities for children to work collaboratively and to compare ideas and methods with others

- Children will be afforded opportunities to apply the mathematical skills and knowledge they have learnt to real life situations.

Evaluations and Reviews:

- Teachers evaluate progress during and at the end of half termly planners and review progress made. This evaluation in turn helps set the learning intentions for future planning.

- Teachers will encourage ongoing improvement and progression in children's learning through monitoring and evaluation. Children's work will be marked positively and constructively in relation to the learning intention and the success criteria, as outlined in the school's marking policy.

Resources

The school uses a wide range of resources for Mathematics/Numeracy teaching including a variety of published schemes and teacher generated resources including games and appropriate ICT software.

The main texts used throughout the school are:

- New Heinemann Maths
- Heinemann Maths
- Spotlight on Maths (for more able learners)
- Ready Set Go
- Target Maths
- Cambridge Apex Maths Processes
- Module Maths
- Mental Arithmetic (Schofield and Simms)
- Collins Basic Skills Maths

Resources belong to the whole school and are not the domain of one particular teacher or class. Each teacher has the necessary equipment for their own class, which is stored in their own classroom. There is also shared resources located in the Numeracy cupboard and in designated areas around the school. It is the policy of the school that teachers should cooperate and share equipment when necessary. It is important that resources are readily available and accessible to children to help develop their process skills.

TS and PCs/Cross curricular opportunities for numeracy development

Teachers will seek to take advantage of opportunities to develop Thinking Skills and Personal Capabilities and to make cross-curricular links. They will plan for pupils to practise and apply the skills, knowledge and understanding acquired through numeracy lessons to other areas of the curriculum.

Thinking skills are developed through:

- Effective questioning
- An awareness of the different styles of learning

- Encouraging children to use visual, auditory and kinaesthetic channels for better learning

- Use of active learning styles

- Use of open ended tasks

The use of ICT

At St Bronagh's P.S. opportunities to use ICT to support teaching and learning in Numeracy will be planned for and used as appropriate. Resources include:

Computers and laptops including router to allow wireless connections

iPads

C2k software

Learning NI

Internet access

Bee-Bots

Pro-bot

All classrooms are equipped with Interactive Whiteboards

Easi-Speak microphones

Digital cameras

Card Readers

School website - games/website links

HUE HD webcam

Printers

Assessment and Target-setting

Assessment for learning is an integral part of the learning and teaching process and assessment evidence is used to modify teaching to meet the needs of the children and improve learning. Work will be assessed in line with the Teaching and Learning Policy (pg 4-5).

At the beginning of each school year, teachers analyse standardised scores:

- compare performance scores with ability levels

- identify low achieving children as well as those who are underachieving or gifted and/or talented

- identifying appropriate interventions

Effective Performance Data Management

Data generated from standardised tests and statutory assessment is analysed for a range of purposes:

- to track children's progress

- to track complete classes

- to identify individual children's cognitive strengths and weaknesses

- to inform planning for teaching and learning

- to identify underachieving children for further support

- to set targets for individuals where appropriate

- to compare progress between groups / schools

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

14

Role of the Numeracy Co-Ordinator

All teachers at St Bronagh's P.S. value the role of Numeracy in the curriculum and accept shared responsibility for promoting numeracy throughout the school. However the Numeracy Co-ordinator in consultation with the Principal, teachers and parents is responsible for co-ordinating the development of numeracy. The SDP is in place and areas for focus in numeracy have been agreed. The Numeracy Co-ordinator will monitor and evaluate Numeracy through:-

- Contributions to the production of the School Development Plan.

- Producing Action Plans to address highlighted issues.

- The implementation of these Action Plans and the achievement of their Success Criteria.

- Monitoring pupil progress

- Management and analysis of relevant data

- Provision of Numeracy (including Intervention and Support programmes)

- The quality of the Learning Environment;

- Monitoring children's work

- Monitoring teachers' plans

- In class observations

- Auditing and supporting colleagues in their CPD

- Taking the lead in policy development

- Purchasing and organising resources

- Keeping up to date with recent Numeracy developments

- Maintaining contact with all concerned: Governors, Principal, SLT, teachers, other staff, parents, and pupils

- Ensuring channels of communication are open and active with all relevant outside agencies, including DENI, EA, CCEA, etc.

The Board of Governors

Reports are made to the governors on the progress of Numeracy provision and on the standards being achieved by the school. This policy will be reviewed every 3 years or in the light of changes to legal requirements.

A SCHOOL CONNECTED TO ITS LOCAL COMMUNITY:

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

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

- The school and its teachers are held in respect by parents and the local community who in turn actively support the work of the school

- The school uses its involvement in particular programmes(e.g. 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

At St Bronagh's PS parents are encouraged to take an active role in promoting and developing their child's learning.

- Parents receive regular and clear information about policies, the curriculum and ways to help their children and are provided with opportunity for consultation.

- Annual Parent/Teacher meetings are held in November to report on pupil progress and discuss how parents can support their children's numeracy at home.

- Parents have an opportunity to view children's work in Numeracy on an annual basis.

- Liaison with parents through a written Annual report in June, homework diaries.

- Information leaflets and newsletters.

- Parent workshops through our Extended Schools Cluster Group.

- Parents have regular opportunities to visit the school and celebrate the work of the children through:
  - Open day

  - Induction afternoon

  - Informal meetings

- Parents are also involved in the life of the school through:
  - Newsletters

  - involvement in PTA activities

  - School website

Links with other schools

- Extended Schools with Kilbroney Integrated PS, Dromore Rd PS, St Dallan's PS and St Mark's HS

- DCS Signature Project: Shared Education with Dromore Rd PS

- Transition Project with St Dallan's PS and St Mark's HS

- Local Pre-school – Little Folk

- St Louis Grammar School – Technology Challenge

Community Links

Contacts with the local community, are established to help foster positive attitudes and values among the children.

Community links include:

- Local Cultural Events

- Visitors to school – storytellers, fire service, RSPB, STEM Ambassador etc,

- School trips

- Links with local Primary and Post Primary Schools

Important and effective links are established and maintained with statutory agencies including educational support services, e.g. Educational psychologist, Behaviour Support Team, SpLd, CASS, ASD team, speech and language therapists, ACE Team, Inclusion and Diversity Service etc.

CONSISTENCY WITH OTHER SCHOOL POLICIES

The content 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

REVIEW OF POLICY:

Review and monitoring of this policy will take place on an annual basis.

Signed: _____ (Chairperson of BOG)   Date: _15- 11- 21_

Signed: _John Gallagher_ (Principal)   Date: _15/ 11/21._

Signed: _Mary Yargee_ (Numeracy Co-ordinator)   Date: _15/11/21_