TOWERVIEW PRIMARY SCHOOL

Numeracy and Mathematics Policy

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Numeracy and Mathematics Policy

In Towerview Primary School we value every pupil and the contribution they make to learning. As a result we aim to ensure that every child achieves success and that they are enabled to develop their skills in accordance with their level of ability.

Mathematics teaches us how to make sense of the world around us through developing every child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in their everyday lives. Thus, Mathematics is a *key skill* within school and is a *life skill* to be utilised throughout every person's day to day experiences.

In essence Numeracy and Mathematics are one and the same.

Maths vision: It is our vision that Numeracy and Mathematics in T.P.S equips all pupils with the skills and enthusiasm to become lifelong learners; whilst striving to challenge each child to reach their full potential.

AIMS

The aims of this policy are to:

- address the whole school audience.
- set out principles which aim to ensure the quality of teaching and learning.
- ensure the staff is aware of the teaching approaches associated with Numeracy.
- identify the roles, which each member of staff has in the promotion of Numeracy.

In addition to the general principles of Mathematics, Towerview has highlighted the key principles for the five attainment targets in line with the Programmes of Study for Foundation Stage, Key Stages One and Two. It is our belief that each principle conveys good practice in teaching Mathematics.

GENERAL KEY PRINCIPLES FOR NUMERACY

As a staff we have agreed on the following key principles for Numeracy:

- the development of Mathematics should be an integral part of the School Development Planning process.
- teachers should plan to ensure a broad and balanced curriculum for Mathematics.
- teachers will use an appropriate range of teaching strategies.
- there will be appropriate use of ICT.
- Mathematical skills will be incorporated across the curriculum.
- teachers will have the opportunities for professional development as necessary.

- positive attitudes to Mathematics will be fostered.
- the use of Numicon, Five and Ten frames, as our approach to teaching Number.
- the use of Bar Modelling as a strategy for Problem Solving and Word Problems.
- the use of Worked examples to enable us to analyse the use of different strategies for problem solving.
- teaching and learning will take account of the key role of language within Mathematics.
- the use of Eunice Pitt (Ready Steady Go) and New Heinemann Maths Scheme
- pupils will be encouraged to become increasingly independent and to exercise choices and make decisions in their learning.
- Processes in Mathematics will be incorporated across the Attainment Targets.
- support for Mathematics learning will extend beyond the school context, in particular to include the role of parents and governors.
- there will be arrangements to ensure that all pupils make appropriate progress in Mathematics.
- assessment will be an integral part of the teaching and learning process and will be used to inform future planning.
- the importance and relevance of Mathematics in everyday life will be promoted.

We have identified the following as Key principles for each of the Attainment Targets:

PROCESSES

Opportunities will be provided for pupils to:

- work collaboratively so that through discussion they can develop their mathematical language and organise their thinking.
- record their work in a variety of ways.
- select the appropriate mathematics and resources required for a task.
- engage in a range of meaningful problem-solving and investigative activities.

Pupil development in the use of mathematical processes should be broadly in line with other areas of mathematics.

NUMBER

Opportunities will be provided for pupils to:

- consider and discuss appropriate strategies for mental calculations.
- acquire a sound understanding of place value.
- develop their estimation skills and use these skills to estimate answers before completing calculations.
- develop and consolidate written and computational skills using a balance between practice and application in meaningful contexts.
- use calculators appropriately.

- explore and identify patterns and explain their reasoning when making generalisations.
- search for patterns and use relationships in investigative work.

MEASURES

Opportunities will be provided for pupils to:

- use a range of appropriate measuring equipment.
- estimate and make appropriate comparisons.
- discuss the units of measurement, equipment and accuracy required when undertaking measuring tasks.
- appreciate that all measurement is continuous and approximate.
- use decimal notation when recording metric measurement.

SHAPE AND SPACE

Opportunities will be provided for pupils to:

- handle shapes and discuss their properties.
- construct and investigate shapes, including the use of ICT.
- appreciate the importance of size and scale.
- visualise and represent shapes.
- appreciate the relationship between shape and space.
- explore position, movement and direction in meaningful contexts.

HANDLING DATA

Opportunities will be provided for pupils to:

- select, organise, display and interpret data.
- apply handling data skills across the curriculum using ICT when appropriate.
- discuss, make decisions and give reasons in relation to data handling activities.

TEACHING AND LEARNING

Teaching will focus on the development of skills, knowledge and concepts required to maximise learning by using a variety of teaching and learning strategies in Mathematics lessons. During lessons clear learning intentions will be discussed at the beginning of each lesson and the active involvement of pupils in their own learning will be sought through the use of effective questioning, Assessment for Learning strategies and pupil reflection. We encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources and small apparatus to support their work and will use Numicon to support their learning of Number. We use Bar Modelling as a strategy for Problem solving to help reduce working memory for those pupils finding difficulty. Children use ICT in lessons to enhance or consolidate their learning, as in modelling ideas and methods. Teachers will implement daily mental strategies to develop recall of number facts, understanding of the number system, approximating and calculating. Teachers will teach the 7 mental maths strategies and as a whole school there will be a mental maths focus of the month. Wherever possible, we encourage the children to use and

apply their learning in everyday situations. Manipulations and representations are used throughout the classes within school to help pupils engage with mathematical ideas.

Planning, progression, differentiation, resources and the grouping of children will reflect best practice in learning. Teachers will make full use of the school and surrounding environment to maximise learning.

PLANNING

Curriculum planning is carried out in three phases (long-term, medium term and short-term). The Lines of Progression Framework and Topic Planners from E.A. and those included in the Heinemann programmes for Mathematics give a detailed outline of what we teach from Primary One to Primary Seven. The medium term plans identify the key teaching objectives in mathematics that we teach every half term. They ensure an appropriate balance and distribution of work across each term.

CONTINUITY AND PROGRESSION

In our planning we intend to ensure that pupils have experiences across each of the five aspects of Numeracy and through the different levels. Progression is ensured by using the Lines of Development with the content taken from the Northern Ireland Curriculum. Learning intentions will be set and met through the delivery of differentiated lessons.

MONITORING AND EVALUATING

Monitoring and evaluating are the integral parts of the teaching and learning in our school and are the responsibility of all members of staff. The Mathematics and Numeracy Co-ordinator will oversee the progress we are making towards fulfilling our aims. Monitoring and evaluating will be carried out as per the Assessment Policy and regular meetings as part of INSET. Reference will be made to CCEA information on Northern Ireland targets and internal bench marking data. The information gained will be used to inform significant others to assist in future planning.

ASSESSMENT OF LEARNING (In line with Assessment Policy)

Although assessment forms an integral part of learning and teaching on a daily basis, there are times when children are assessed formally in Towerview Primary School. Assessment of learning involves working with the range of available evidence that enables staff and the school assessment committee to check on pupils' progress and using this information in a number of ways:

	FORMAL ASSESSMENT OF LEARNING
NURSERY	• PUPIL PROFILES • PRE-SCHOOL TRANSITION ASSESSMENT
YEAR 1	• RUNNING RECORDS (READING) • ICT RECORD • BURY INFANT CHECK (WHEN REQUIRED)
YEAR 2	• RUNNING RECORDS (READING) • ICT RECORD • NFER PTM / PTE • MIST TEST
YEAR 3	• SCHONNEL SPELLING • NFER PTM / PTE • ICT ACCREDITATION • READING PARTNERSHIP SALFORD X/Y READING • TEST CA < RA
YEAR 4	• NFER PTM / PTE • NNRIT • CAT 4 • ICT ACCREDITATION • END OF KEY STAGE ASSESSMENT TASKS • SCHONNEL SPELLING
YEAR 5	• NFER PTM / PTE • ICT ACCREDITATION • SCHONNEL SPELLING
YEAR 6	• NNRIT • CAT 4 • SCHONNEL SPELLING • NFER PTM / PTE • ICT ACCREDITATION • AQE/CEA ASSESSMENT TASKS
YEAR 7	• SCHONNEL SPELLING • NFER PTM / PTE • CBA • ICT ACCREDITATION • END OF KEY STAGE ASSESSMENT TASKS • AQE/CEA

BASED ON THE OUTCOMES OF THE ABOVE, THERE WILL BE TIMES WHEN THE SENCO MAY TEST PUPILS INDIVIDUALLY USING THE FOLLOWING FORMAL ASSESSMENT TESTS :	
S.E.N.C.O	• NNRIT – NEW NON READING INTELLIGENCE TEST • NVRT - NON VERBAL READING TEST • MIST – MIDDLE INFANT SCREENING TEST (P2) • BURY INFANT CHECK • SALFORD READING TEST • YOUNG GROUP TEST • VERNON SPELLING • NEALE ANALYSIS

Judgments about pupils' learning need to be dependable. This means that:

- they are **valid** (based on sound criteria)
- they are **reliable** (accuracy of assessment and practice)
- and they are **comparable** (they stand up when compared to judgments in other aspects of school or other schools).

SPECIAL EDUCATIONAL NEEDS

We teach Mathematics to all children, whatever their ability. We believe that all children can learn mathematics and endeavour to use a wide range of teaching strategies to suit individual needs as they arise. We use Maths Recovery strategies to help children with difficulties in maths lessons. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children.

The SEN Policy applies to all areas of Mathematics and the individual learning needs of each child must be reflected within the Personal Learning Plans (PLPs) or Action Plans (Stage 1). Differentiated and targeted teaching will be directed towards all pupils maximising their learning potential. We are committed to meeting the needs of gifted and talented children through specific differentiation and extension groups in the classroom setting. When possible, Maths support groups are formed from Data analysis and the Numeracy co-ordinator will take small groups of children out from class to target specific areas of mathematics (P4-7). Children will also be taken in small groups to work with a classroom assistant to again focus on specific areas of weakness in regards to Numeracy.

LEARNING THROUGH PLAY

We relate the mathematical aspects of the children's work to the statutory requirements set out in the Foundation Stage curriculum which underpin the curriculum planning for children in Primary One and Two. As stated in the NI Primary Curriculum document children 'should develop much of their early mathematical understanding during play, where the activities provided offer opportunities for them to estimate size, weight, capacity, length and number, and ….. allow them to explore ideas related to number, shape, pattern, size, order and relationships.'

ICT

ICT should be seen as an integral part of Mathematics/Numeracy and should be used to help enhance our pupils' learning as per the ICT Policy.
We use a variety of websites and games and Numbots and Times Tables Rockstars.

ROLE OF MATHEMATICS AND NUMERACY CO-ORDINATOR

The Co-ordinator will be responsible for evaluating the effectiveness and fitness for purpose of the learning process within the school's provision. The Co-ordinator is responsible for the learning process through INSET for all members of staff and in securing the required resources to support learning. The Co-ordinator will also seek advice and training to assist target setting and thereby enhanced learning. In term three the Co-ordinator reports to the Board of Governors in response to the Numeracy and Mathematics Action Plan.

HOMEWORK

Homework is used to support the learning process through the school's homework policy and to reinforce work completed in school or to allow children to further investigate a topic or concept.

RESOURCES

There is a wide range of resources to support the teaching of Mathematics across the school. The school does not solely rely upon the New Heinemann Mathematics scheme as it is felt that relying upon one scheme limits our children's mathematical experiences. Teacher generated worksheets, Numicon resources, E.A. resources, games and ICT software further supplement a wide range of learning resources. Each teacher has the necessary equipment for their own class which is stored in their classroom. The Co-ordinator is responsible for maintaining and monitoring the resources stored centrally for Foundation, Key Stage One and Two, which are used regularly and shared among the classes.
We use manipulatives and representations in all classes and encourage children to use cubes or concrete resources when necessary despite their age. We understand

that manipulatives should be temporary and act as scaffold and therefore will be removed once independence has been achieved.

STAFF DEVELOPMENT

All teachers are encouraged to continually develop their knowledge base and skills through collaboration and INSET.

PARENTAL INVOLVEMENT

We view parents/guardians as one of our greatest natural resources and should be involved with their children's progress as much as possible. Parents should be made to feel welcome to discuss their child's progress and how to participate in their education. It is school policy to give a written report in term three and parents are invited into school in term one and two to meet teachers to discuss progress. Staff are available for consultation in regards to individual difficulties or problems hampering the progress of their child in Mathematics. Key Stage One and Key Stage Two Mental Maths booklets are distributed at Curriculum Meetings to help children with their mental maths strategies. Nursery and Foundation Stage hold information evenings for parents and disseminate resources and games to help promote Numeracy and Mathematics at home. The Numeracy Co-ordinator presents information on how to develop Number sense and mathematics at home for Nursery parents in Term 1.

Mathematics and Numeracy Committee
Mrs L Parker, Mrs Ellesmere, Miss H Beattie, Mrs Chapman, Mrs Allman, Miss McCormack, Miss J Beattie

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