Numeracy

Policy

Sacred Heart Primary School

Dundrum

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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 Sacred Heart 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 the Numeracy Policy:

At Sacred Heart 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 to include 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-centered 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.
- Individual pupils are identified as underachieving using PIM/PTM data, baseline assessments and teacher observations. The class teacher has the main responsibility to ensure learning and teaching approaches are suitably differentiated to match the level of attainment of those pupils identified.
- A trial of effective interventions and support are in place to meet the additional educational needs of under achieving P4-P7 pupils and to help them overcome barriers to learning in Numeracy.
- There is a commitment to involve young people in discussions and listen to their views about making decisions regarding maths in real life that directly affect them.

High quality learning and teaching:

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

- A broad, relevant and progressive numeracy curriculum is provided for the pupils.
- An emphasis on 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 provide opportunities for children to apply mathematical knowledge and understanding across the curriculum and in real life situations.
- Teachers use adaptable, flexible teaching strategies that respond to the diversity within the classroom.

- Assessment and other data are used to effectively inform learning and teaching across the school and in the classroom and to promote improvement. Whole school, class and individual pupil targets are set in relation to PTM data analysed in August of each academic year along with NGMT data over the course of the year.

- 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. This is used to inform future planning.

- Benchmarked educational outcomes reflect positively on the school and compare favourably, when measured against schools of a similar size and circumstance.

Approaches to learning and teaching of Numeracy

N.B The White Rose Scheme is currently utilised within all approaches to learning and teaching of Numeracy.

Specific Numeracy intervention is currently in operation which provides individualised intervention to tracked and targeted pupils. The Numeracy Coordinator and SENCO co-*ordinate this programme.*

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.
- Use of games.
- Use of ICT.
- Assessment of mental mathematics.
- Progression for mental mathematics within and across year groups.

Approaches to learning and teaching in Number:

- Understanding the number system - counting, sequencing, place value, fractions, decimals and 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.

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.

Approaches to learning and teaching in Processes:

- Agreed definition of Processes.
- 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.

Effective leadership:

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

- The Principal and Governors understand their responsibilities and are informed about the Numeracy Action Plan and the strategies in place to bring about improvement in numeracy.

- The Numeracy Co-ordinator will 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 planning, implementation and evaluation of the strategies needed to bring about improvement in numeracy.

- Under the guidance of the Numeracy/ Assessment Co-ordinator teachers will identify underachieving pupils (and those who are capable of better attainment) and set individual, class and whole school targets to raise achievement in numeracy.

- The resources for numeracy are used and managed properly and effectively to support high quality learning and teaching.

- The Numeracy Co-ordinator will monitor and evaluate effectively school numeracy outcomes, policies, practices and procedures within the Numeracy Action Plan.

Role of Numeracy Co-ordinator

To lead the development of Numeracy throughout the school in conjunction with the Senior Management Team and to report to the Board of Governors.

Responsibilities:
The Numeracy Co-Ordinator will:

- Demonstrate expertise, enthusiasm and vision.
- Promote self-evaluation in order to enhance the monitoring, evaluation and review processes.
- Monitor, evaluate and record progress on the Numeracy Action Plan.
- Ensure a regular review and update of the policy with all staff.
- Encourage staff to use a range of learning and teaching strategies to best meet the needs of pupils.
- Assist staff avail of numeracy courses to enhance their understanding and teaching of numeracy.
- To organise school-based Staff Development as required.
- Provide guidance in the effective use of comparative performance data, including target setting ,tracking pupils and areas of strengths/weakness for class/key stages.
- Encourage management to offer support for identification, dissemination and implementation of good practice in the learning and teaching of numeracy.
- Undertake on-going monitoring and evaluation at individual, class and whole school level.
- Report to Governors about the school's numeracy development.

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.
  - Numeracy information/support evenings
  - Parent/teacher interviews
  - Verbal and written reports on pupil progress
  - Homework activities
  - Useful websites/apps
  - Topic grids

- 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. Times Tables competitions, Maths Cluster Groups, Parental Workshops and visits to other primary schools) effectively in meeting the needs of the community and nearby schools.

- Good relationships and clear lines of communication are in place between the school and the education agencies that support it.

Consistency with other school policies:

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

Assessment, Homework, Special Educational Needs, ICT, Positive Behaviour and Pastoral Care.

Monitoring and evaluation of the policy:

The Numeracy Policy is:

- Agreed with the Board of Governors
- Shared with parents
- Available to the general public via the school website
- Regularly reviewed and updated in consultation with school stakeholders: staff, children, parents and governors.