



GLENCORSE PRIMARY SCHOOL
'A small school building big dreams'

Numeracy and Mathematics Policy
March 2017

Numeracy and Mathematics

Mathematics is important in our everyday life, allowing us to make sense of the world around us and to manage our lives. Using mathematics enables us to model real-life situations and make connections and informed predictions. It equips us with the skills we need to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions.

(CfE Mathematics, Principles and Practices)

To face the challenges of the 21st Century, each young person needs to have the confidence in using mathematical skills, and Scotland needs both specialist mathematicians and a highly numerate population.

(Building the Curriculum 1)

All teachers have responsibility for promoting the development of numeracy. With an increased emphasis upon numeracy for all young people, teachers will need to plan to revisit and consolidate numeracy skills throughout schooling.

(Building the Curriculum 1)

Numeracy and Mathematics in Glencorse Primary School

Aims

In Glencorse Primary School we believe that Numeracy and Maths should be delivered within a learning environment that supports discovery, questioning, relevance, experimenting and most of all enjoyment.

Our approach supports the Midlothian Numeracy and Mathematics strategy (see appendix 1) and is based on a shared understanding of the Stages of Early Arithmetical Learning (SEAL) approach. This approach utilises the Learning Framework in Number and the Midlothian Understanding Mathematics Progression (MUMP), and strives to ensure that all children develop high levels of numeracy skills through their learning across the curriculum.

Through learning and teaching experiences the children will realise that Mathematics is important in our everyday life, allows us to make sense of the world around us and enables us to manage our lives. By engaging in cross curricular links and real-life situations children will be given opportunities to make connections and informed predictions.

Numeracy and Mathematics is a tool of everyday life, allowing us to make sense of the world around us and become:

- Successful Learners
- Confident Individuals
- Responsible Citizens
- Effective Contributors

Numeracy

Being numerate helps us to function responsibly in everyday life and contribute effectively to society. It increases our opportunities within the world of work and establishes foundations which can be built upon through lifelong learning. Numeracy is not only a subset of mathematics; it is also a life skill which permeates and supports all areas of learning, allowing young people access to the wider curriculum.

Numerate people rely on the accumulation of knowledge, concepts and skills they have developed, and continually revisit and add to these. We aim to provide our learners with experiences that will ensure numeracy skills are not only developed from early levels and beyond, but are revisited and refreshed throughout schooling and into lifelong learning.

Mathematics

Curriculum for Excellence promotes the development of Numeracy across Learning as the responsibility of all teachers. Where appropriate, we provide opportunities to apply mathematical concepts and skills on other curricular areas.

Mathematics permeates all aspects of modern life and we aim to develop all aspects of mathematical capability by providing opportunities where learners can;

- become familiar and fluent with numbers
- use and apply skills in the real world, including the use of ICT
- be open to new ideas and alternatives, and appreciate the importance of evidence and critical reasoning
- be curious, imaginative and diligent

Effective Learning and Teaching

High quality learning depends upon achieving a suitable balance between developing key facts and integrating and applying them in relevant and imaginative contexts.

(Numeracy across learning: principles and practice)

From the early stages onwards, learners will experience success in Numeracy and Mathematics and develop the confidence to take risks, ask questions and explore alternative solutions without fear of being wrong. They will enjoy exploring and applying mathematical concepts to understand and solve problems, explaining their thinking and presenting their solutions to others in a variety of ways. At all stages, an emphasis on collaborative learning will encourage children to reason logically and creatively through discussion of mathematical ideas and concepts.

The experiences and outcomes promote and support effective learning and teaching methodologies which will stimulate the interest of learners and promote creativity and ingenuity.

A rich and supportive learning environment will support a skilful mix of a variety of approaches, including:

- active learning and planned, purposeful play
- weekly development of problem-solving capabilities (see appendix 2)
- developing mental agility
- frequently asking children to explain their thinking
- use of relevant contexts and experiences, familiar to children and young people. For example, making links to IDL topics such as Romans - learning Roman numerals.
- appropriate and effective use of technology
- building on the principles of Assessment is for Learning
- collaborative and independent learning
- making frequent links across the curriculum, so that concepts and skills are developed further by being applied in different, relevant contexts
- promoting an interest and enthusiasm for numeracy.
- Use approaches, consistent with ASG, to teach aspect of Maths (see ASG posters)

Structure of Lessons

Lessons in Numeracy and Mathematics should contain:

1. '4 a day' challenges to revisit and consolidate the four functions (+, -, x, ÷)
2. Sharing the big picture - making links to real life.
3. Recap on previous knowledge
4. Explicit sharing of Learning Intention and Success Criteria
5. Goal setting for the lesson
6. Direct teaching
7. Learning experience and activity.
8. Plenary with reflection on Learning Intention and Success Criteria
9. Creating next steps for learning in Numeracy and Mathematics.

All Numeracy lesson should contain a variety of skills from the Framework for Learning in Number (see appendix 3). For example, a lesson with an addition focus should still contain number word sequences, number structures and work on numerals.

Progression

Through the Experiences and Outcomes within Curriculum for Excellence and our SEAL/MUMP approach, we aim to provide learners with the opportunity to develop their knowledge and skills through cumulative growth in terms of their understanding and application. By understanding the Stages of Early Arithmetical Learning and identifying key pathways of progression within this, next steps can be clearly identified.

On-going collaboration and moderation with colleagues in relation to pathways of progression encourages a shared understanding of expectations of standards as well as effective learning and teaching within Numeracy and Mathematics.

Planning Numeracy and Maths

Teachers plan to establish and consolidate children's fundamental numeracy skills using imaginative, interactive approaches, so that young people develop a sound understanding of number. Through such approaches learners will grow in confidence in the recall and use of number structures and multiplication facts, in their understanding of place-value, and in the application of mental strategies. Teachers will reinforce these skills continually throughout the education of each child and young person (see appendix 3).

- Year Plans should show some elements of Maths being taught in a context. Some areas will be taught as discrete subjects. Over the course of the session there should be two maths in context focus weeks, where pupils will have the opportunity to apply a number of skills.
- Each group will have an overview of Numeracy and Maths at the appropriate level
- MUMP planners will be used, for each group, for each area of Numeracy and Maths
- Significant Aspects of Learning in Numeracy and Maths should be highlighted to show coverage. (appendix 9)
- Staff will record which areas are to be covered by highlighting in the appropriate term colour and then dating when experienced (see appendix 4)
- Quick start activities will be carried out daily to revisit topics regularly
- Numeracy and Maths will be taught every day, with a minimum 5-6 hours spent on it weekly.
- There will be opportunity at least once per week to learn problem solving strategies and take part in activities.

Resources

Most Numeracy and Maths activities should be based on active learning. However there is a place for written activities.

Resources available include:

- MUMP
- Scottish Heinemann Mathematics
- Tee-Jay Mathematics
- Number Connections
- Problem Solving In Action
- ICT (e.g. Education City, Sumdog, Primary Games, Maths Packs, Teaching Tables/Fractions/Time) - should be used to reinforce learning
- Maths games
- Range of other resources - number fans, beads etc. in Maths cupboards
- SEAL activities
- Real World Maths
- Outdoor Problem Solving Cards
- SSLN documentation and resources

Presentation

We will use:

- Blank maths jotters (P1)
- Large squared jotters (P2-3)
- Small squared maths jotters (P4-7)
- P2 & P3 will follow the school presentation policy. This will be inserted at the front of every Maths jotter. (See Appendix 5)
- P4-7 will follow the ASG presentation Policy. This will be inserted at the front of every Maths jotter. (See Appendix 6)

Marking

AifL strategies should be used to include peer and self marking. Teacher comments should refer to the Learning Intention and Success Criteria, as well as the level of effort from the pupil.

Assessment

Assessment in Numeracy and Mathematics will focus on the learner's abilities to work increasingly skilfully with numbers, data and mathematical concepts and processes and use them in a range of contexts. Teachers can gather evidence of progress as part of day-to-day learning about number, money and measurement, shape, position and movement and information handling.

The use of specific assessment tasks will be important in assessing progress at key points of learning including transitions. At Glencorse Primary School these include;

- MUMP evaluation exercise at the start and end of the session.
- GL Assessments to be completed from P2-7 every March
- PIPS to be completed in P1

Pupils will set specific Numeracy and Maths targets for themselves, gathering evidence of personal achievements and successes as part of the Personal Learning Plan Process. Learning ladders will be used in Mathematics to allow pupils to think 'Where am I now?' 'Where am I going?'

Assessment should also link with other areas of the curriculum, within and outside the classroom, offering children and young people opportunities to develop and demonstrate their understanding of mathematics through social studies, technologies and science, and cultural and enterprise activities.

(Mathematics and Numeracy Principles and Practice)

Tracking

Regular tracking and moderation will help to form CfE levels.

There will be opportunities for moderation of Numeracy and Mathematics twice per session. The focus of these will be to ensure there is breadth, challenge and application of learning within a pupils work.

When a child has achieved a level, staff should pass this information to the Admin. Assistant who will then enter it onto SEEMIS. The teacher will then record this information in the class tracking folder.

Staff will also meet in Term 4 to discuss the results of GL assessments. Particular focus will be placed on the progress of each learner, as well as the questions which were answered incorrectly. These will then become a focus for teaching and learning.

Reporting

Progress is reported to parents/carers during Term 3 at Parent Consultations. Summative reports are issued in the Summer Term.

Numeracy and Mathematics Coordinator

In line with Midlothian Council's expectations, every school will have a Numeracy and Mathematics coordinator. This representative will attend regular meetings to discuss Numeracy developments and work with ASG colleagues to further develop learning and teaching of Numeracy and Mathematics. They should also disseminate relevant developments to staff and be on hand to support and encourage staff (see appendix 7).

Support for Learning

If specific additional support is required for any child, this should be discussed with the Support for Learning teacher. Children, who are recognised as able, should also be discussed with the Support for Learning teacher.

Homework

Homework should be given from P1-P7. This can be a practical task as well as written work. Number bonds and quick recall of tables will be encouraged. All children have a Sumdog password which they can access from school and home.

Transfer of Information

Information will be shared with the next class teacher during transition meetings at end of the school session.

P 7 teachers will pass on the following information to High School:

- Group names with levels e.g. 2C
- MUNP overview per group which has been highlighted and dated
- Maths overview per group which has been highlighted and dated

(see appendix 8)