Mosshead Primary School

Numeracy and Mathematics Policy

March 2023

'To face the challenges of the 21st Century, each person needs to have confidence in using mathematical skills, and Scotland needs both specialist mathematicians and a highly numerate population.'
(Building the Curriculum 1)

Vision Statement

Learners at Mosshead Primary School study Numeracy and Mathematics to develop skills for learning, life and work. They should be encouraged to value Numeracy and Mathematics and have an awareness of its importance and relevance to their daily lives. This will enable them to become functioning adults, who are able to think mathematically, enabling them to reason and problem-solve in a variety of contexts.

At Mosshead Primary School, our staff teach engaging Numeracy and Mathematics lessons that involve a carefully planned blend of learning and teaching approaches. Staff provide progressive, broad, coherent and meaningful learning experiences that are relevant, challenging and enjoyable. Expectations of all learners are high and we challenge our learners to ensure they make the best possible progress. Our learners build confidence by applying their Numeracy and Mathematics learning in real life and relevant contexts. Staff regularly ask pupils to explain, justify or prove their thinking, talking through the strategies they have used to solve problems.

Mosshead Primary School aims to ensure that all Curriculum for Excellence Numeracy and Mathematics Experiences and Outcomes, relevant to the age and stage of our learners, are fully addressed.

Rationale

The purpose of this policy is to ensure a consistent approach and a shared understanding of effective teaching, learning and assessment of Numeracy and Mathematics within Mosshead Primary School. This policy has been written in line with the Curriculum for Excellence (CfE) Experiences and Outcomes and Benchmarks, as well as the central 7 principles of CfE; Challenge and Enjoyment, Breadth, Progression, Depth, Personalisation and Choice, Coherence and Relevance. It has been reviewed and agreed upon by staff, pupils and parents.

Aims

- To nurture and develop a positive attitude towards Numeracy and Mathematics through a range of rich numerical and mathematical experiences across the curriculum, where all learners experience success.
- To ensure Numeracy and Mathematics is taught in a progressive way across all stages, taking into account learners' individual strengths, interests and areas for development, making connections both within Numeracy and Mathematics and to other curricular areas.
- To provide a safe and secure mathematical environment where learners can confidently experiment, take risks and learn that mistakes are part of the learning process.
- To engage learners in mathematical communication where they can explain their thinking, learning, understanding and identify their next steps in learning.
- To enable learners to make mathematical connections in real life situations and provide experiences that are relevant to everyday life.
- To provide differentiation that best meets the needs of all learners.
- To provide a high level of challenge through questioning and the use of Higher Order Thinking Skills.
- To continue to develop a reflective team of teaching, leadership and support staff who collaborate, share new ideas and learn from each other.
- To involve pupils in leading their own learning through the sharing and co-creation of Learning Intentions and Success Criteria and pupil enquiry based approaches.

Pupil Views

The Learning Council were asked about Numeracy and Mathematics and shared the following views:

'We learn about maths in school because maths is used a lot in our everyday lives, for things as simple as doing your shopping or telling the time.'

'You need to use maths on a daily basis. Every job involves some form of maths.'

'We learn about maths in school because we will need to use it a lot in the future.'

'In maths I like learning new skills and strategies. I use maths in real life when I go to the shops to count my money or when I'm baking to measure all the ingredients.'

'I enjoy all different types of maths. I really enjoy puzzling over a tricky question.'

'I like the challenge of maths. I especially like division because I find it satisfying!'

'Maths is fun! I really enjoy when maths is linked with art because I like to be creative.'

'I enjoy maths because I love challenges and it gets my brain working hard!'

'I find it helpful learning lots of different strategies.'

'I like discussing different strategies in Number Talks. It helps me solve tricky problems.'

'Using a blue print board really helps me in maths. I use the hundred square and the empty number line to help me add and subtract.'

'Working in a group or in pairs helps me to figure out answers because I can hear other people's thinking and I can explain my strategies or answers to them.'

Learning and Teaching

Numeracy and mathematical skills are embedded in the Experiences and Outcomes and cannot be taught in isolation. These skills can be developed through careful planning of learning activities, questioning and a range of assessments. These should encourage learners to think about the concepts, going beyond the recall of knowledge and encouraging them to explain their thinking. As learners progress through Curriculum for Excellence levels, they should demonstrate increasing sophistication and independence in their ability to demonstrate, link, transfer and apply the following skills in a range of increasingly more challenging contexts:

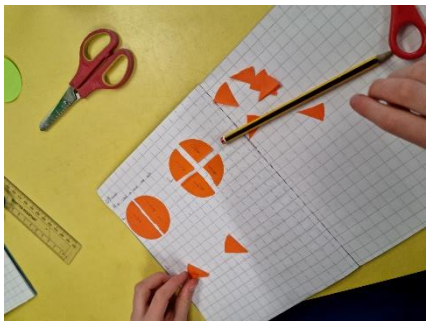
- *Interpret questions;*
- *Select and communicate processes and solutions;*
- *Justify choice of strategy used;*
- *Link mathematical concepts;*
- *Use mathematical vocabulary and notation;*
- *Use mental agility;*
- *Reason algebraically; and*
- *Determine the reasonableness of a solution.*

(Numeracy and Mathematics CfE Benchmarks – Education Scotland – June 2017)

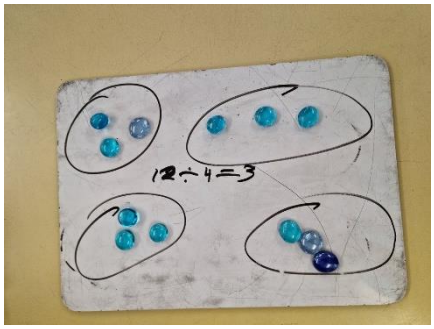
In order to challenge and stimulate learners and promote their enjoyment of mathematics, a skilful mix of approaches and different teaching styles will be adopted. These include;

- Carefully planned active learning experiences in order to engage pupils in their learning, with opportunities for learners to observe, explore, investigate, experiment and play.
- Activities differentiated and taught at an appropriate pace to match the needs of learners. Where appropriate, learners may select the level of differentiated tasks (e.g. chilli challenge) to allow for personalisation and choice.
- The implementation of concrete, pictorial and abstract approaches in order to support and develop learning.
- Effective use of engaging resources, including ICT, to support and enhance learning.
- Modelling and scaffolding different skills and strategies.
- Making links across the curriculum through the implementation of interdisciplinary learning.
- Providing opportunities for both collaborative and independent learning.
- The use of both indoor and outdoor learning environments to maximise learning potential.
- Building on the principles of Assessment is for Learning (AifL), including discussing or co-creating Learning Intentions and Success Criteria at all stages. These should be displayed and referred to throughout lessons.
- Developing problem solving and critical thinking skills and encouraging higher order thinking skills through questioning.
- Providing opportunities for pupil-led learning and enquiry-based learning when appropriate.
- Each year, learners throughout the school will participate in whole-school events with a Numeracy and Mathematics focus such as *Maths Week Scotland*, *NSPCC Number Day* and *National Numeracy Day*. These events will raise the profile and promote a positive attitude towards Numeracy and Mathematics, while encouraging cross-curricular links.

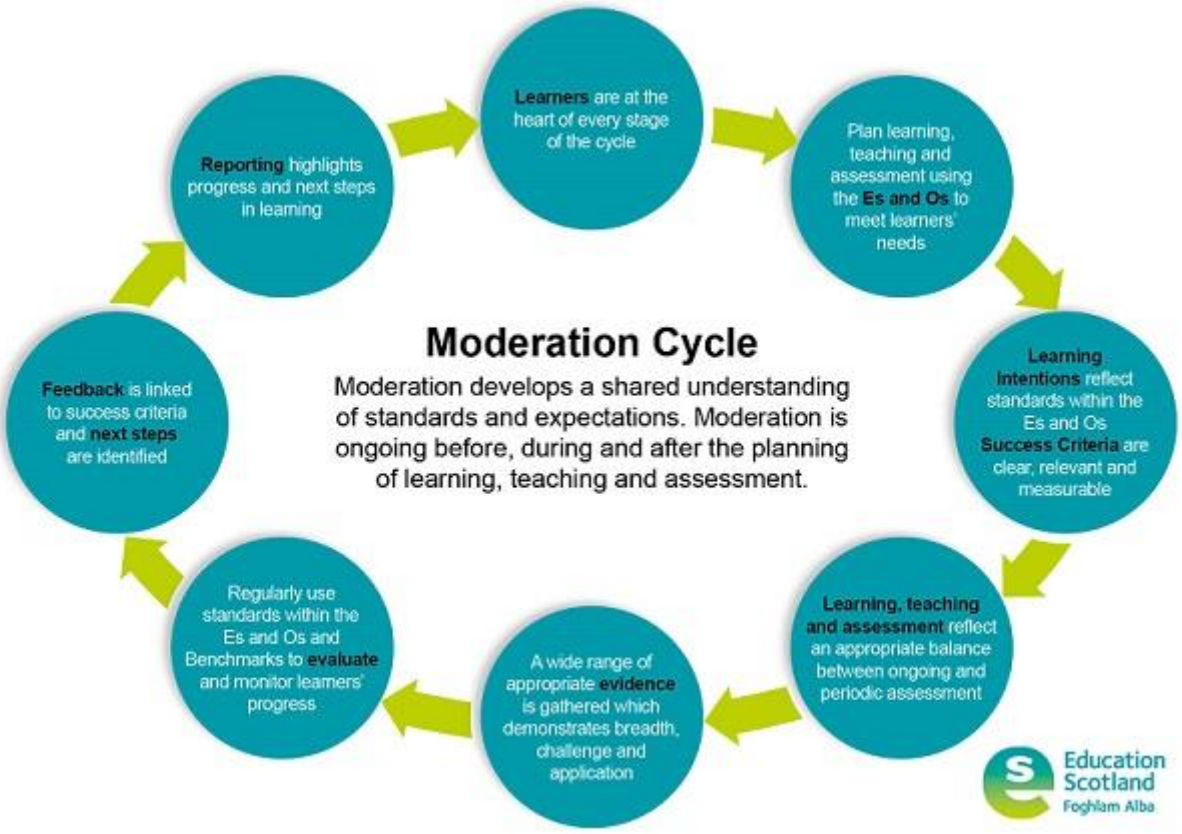
Problem Solving skills are a tool for thinking across all aspects of learning and should be imbedded across area of the curriculum. Through problem solving, learners can apply their knowledge and understanding of concepts. This should be a life skill which will be developed across all curricular areas, including Numeracy and Mathematics.





Planning



Children's learning in Numeracy and Mathematics is planned using our skills based progression planners. Planning documents take into account the CfE Benchmarks and the above diagram from Education Scotland, outlining the Moderation Cycle. The progression planners are based on expected levels at a stage, however, teachers use their own judgement and plan for the ability of their pupils, referring to and teaching skills that are at an appropriate level. This is to ensure that appropriate support and challenge are provided.

Forward planning is carried out collaboratively with stage partners, where teachers plan for groups and individuals. Well-planned learning, teaching and assessment provide opportunities for learners to experience *choice*, *breadth, challenge and enjoyment.* Teachers continually assess and reflect upon the planned learning and make any appropriate amendments to their planning.

At the start of each term, the progression planners should be highlighted to plan the skills which will be covered, ensuring pupils are provided with challenge and support. These working documents should then be referred to throughout the term to reflect on learning and teaching and evaluate pupils' progress.

Assessment

Assessment is an integral and continuous part of learning and teaching at Mosshead Primary School. Teachers work together throughout the year to plan assessments that measure learners' progress, linked to the skills highlighted in forward plans. The results of these assessments, and other information such as teacher observations and classwork will then be used to inform future planning, and identify strengths and areas for development. In order for pupils to understand and take ownership of their progress in Numeracy

and Mathematics, they are actively encouraged to participate in 'Assessment is for Learning' strategies, such as self and peer assessment.

Pupils will be assessed using a variety of summative and formative assessments as follows;

Formative assessment strategies include:

- Self-Assessment
- Peer Assessment
- Teacher feedback – verbal or written
- Teacher observation during lessons/play

Summative assessments include:

- Termly assessments carried out during 'Assessment Week', focusing on skills taught that term
- Scottish National Standardised Assessments (SNSA) in Numeracy and Mathematics carried out by pupils in P1, P4, P7

All assessment information will be used to support a teachers' professional judgement of a child's progress within the CfE levels.

Resources

A variety of resources are used to support active learning and teaching methodologies. Commercial resources are not used to drive teaching, learning and assessment but are used as a tool to support the delivery of lessons and activities.

Resources include (but are not limited to);

- Scottish Heinemann Maths workbooks and textbooks
- Heinemann Active Maths textbooks and games
- TeeJay Mathematics textbooks and worksheets
- Maths Recovery assessments and resources
- Primary Games volumes 1-5, Teaching Time, Teaching Money, Teaching Tables
- Sumdog
- Interactive whiteboards in every classroom and communal area
- iPads
- Count on Us Numeracy BluePrint Boards
- Large range of concrete materials including Numicon, Dienes materials, place value counters, Unifix cubes, bead strings, arithmetic racks, Tom Renwick 100 squares, outdoor learning resources such as large place value counters etc.

Monitoring and Evaluation

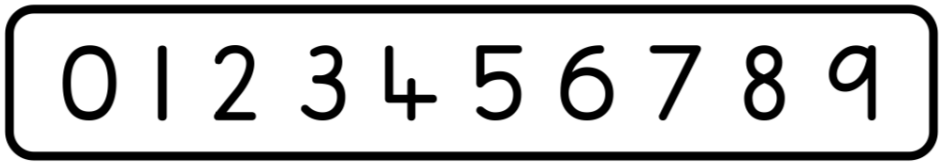
At Mosshead Primary School, Numeracy and Mathematics is monitored by the Senior Leadership Team across all stages through tracking meetings, jotter monitoring, assessment data, forward plans and learning and teaching discussions.

Forward plans are reviewed by SLT on a termly basis and discussed during learning and teaching discussions. Professional dialogue between class teachers and SLT about pupils' progress and attainment takes place during termly tracking meetings.

Jotters

All work in numeracy jotters should include;

- Evidence of a variety of concepts taught throughout the year
- A short date, e.g. 01.02.23
- The learning intention ('WALT:…' in P3, 'LI:…' in P4-7). Reference to textbook pages may also be added here, if appropriate
- Any lines drawn with a ruler
- One digit per box
- Appropriate spacing between titles, equations and question numbers
- Numerals should be formed as follows:



Expectations for jotter layout should be modelled at the beginning of the year and reinforced throughout. All classrooms should have the following example on display as a reminder:

Maths Presentation

Complete any corrections before starting the next day's work.
Draw a line under the previous day's work, with a ruler.
Put the short date on the first line (underlined with a ruler).
Write the Learning Intention – P3 – 'WALT:…', P4-7 – 'LI:…' (underlined with a ruler).
Write the title, if appropriate (underlined with a ruler).
Miss a line.
Numbers/ letters for the questions in a box with a dot/ bracket.
All numbers must fit in boxes and be formed neatly.
Miss a box between each calculation and a row between each line of answers.

Example:
01.02.23
LI: to calculate half of numbers.
TJ Book 2 p25

1. ½ of 10 = 5 2. ½ of 6 = 3 3. ½ of 8=4 4. ½ of 14=7

5. ½ of 12 =6 6. ½ of 16 = 8 7. ½ of 20=10 8. ½ of 18=9