



Blackburn Primary School and Hopefield Nursery Class DRAFT Numeracy Policy



'Education must develop every child's personality, talents and abilities to the fullest.'

Article 29 United Nations Convention on the Rights of the Child

Introduction

'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'

Curriculum for Excellence: Numeracy across Learning Principles and Practice (appendix 1)

***Mathematics** is the study of the properties, relationships and patterns in number and shape, and it is the use of this knowledge to analyse, interpret, simplify and solve problems.*

***Numeracy** promotes the development of the number-based skills that are needed regularly by everyone in their lives and is a part of Mathematics.*

It is important that both of these areas are taught alongside each other, as they are inextricably linked. When a class, group or individual is learning about a specific area of mathematics, such as 2D shape, numeracy should still be taught; both through a Number Talk or other mental maths lesson, but, more importantly, as an integral part of the mathematics learning.

Blackburn Primary School aims to provide all pupils with engaging numeracy lessons which develop children's mental arithmetic and promote the application of numeracy strategies and concepts when problem solving, working within other areas of the curriculum and in everyday activities.

Rationale

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

Building the Curriculum 1, Scottish Executive 2006

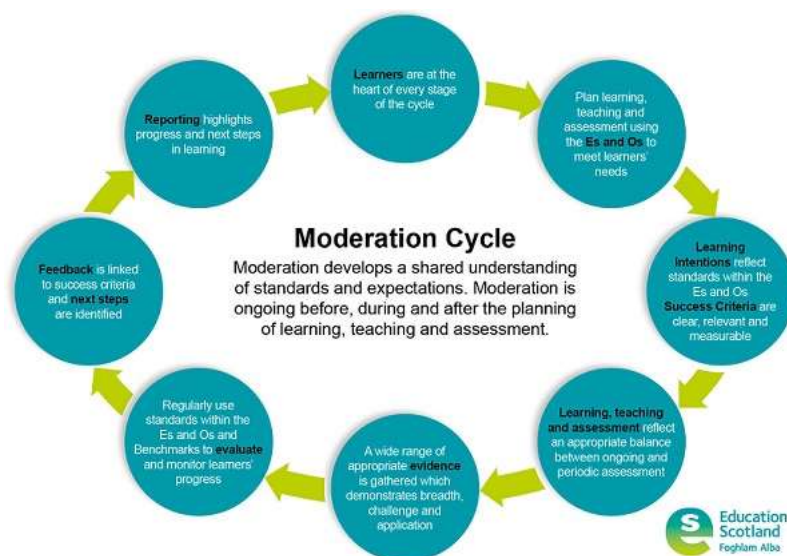
"—to help children and young people in Scotland to understand and value the power of mathematics, to equip them with the skills to contribute effectively in the world of work and in civil society, but also, and perhaps most importantly, to exercise greater control over their own lives."

Dylan Wiliam, Co-chair, Mathematics Excellence Group

At Blackburn Primary School we aim:

- To develop a positive attitude to learning in numeracy and mathematics as an interesting and enjoyable curricular area where all learners experience success.
- To develop mathematical skills in relevant contexts, building knowledge and a quick recall of stage-appropriate facts.
- To teach numeracy and mathematics in a systematic and progressive way, taking into account children's individual strengths, interests and areas for development, making connections both within maths and to other curricular areas.
- To involve children in their own learning through the sharing and co-creation of Learning Intentions and Success Criteria.
- To enable children to use all forms of assessment to inform their next steps in learning.
- To create a learning environment which encourages learners to solve problems collaboratively, learn from one another and value the ideas and opinions of others.
- To allow children to solve problems in different ways, teaching various strategies and to ultimately encourage children to use the strategy that works best for them.
- To develop confident learners who are not afraid to make mistakes, and understand that mistakes are simply part of the learning process.
- To enable learners to express themselves fluently, using correct mathematical language and vocabulary.
- To continue to develop a reflective staff team of teachers, leadership and support staff who collaborate, share new ideas and learn from each other in the teaching and assessment of maths.

Learning, Teaching and Assessment



Children's learning in numeracy and mathematics is planned using West Lothians Numeracy and Mathematics progression pathway documents whilst taking into account the above diagram from Education Scotland, outlining the moderation cycle

Teachers across stages and levels work collaboratively to plan for groups and individuals, to ensure pace, challenge and breadth across a stage. They continually assess and reflect upon the planned learning and make any appropriate amendments to their planning. Teachers work together throughout the session to plan for assessment that measures learner's progress in the CfE Benchmarks, linked to the skills highlighted in the forward planning. The results of these assessments, and other information such as teacher observations, written work and ICT based learning will then be used to inform the next block of learning and teaching and/or transition documents which will be passed on to the next teacher(s).

Organising and Planning Teaching

Children should be taught a mathematics lesson daily, which should include most of the following features:

Approx. Time	Activity												
5 minutes	<p>Learning intention & Success Criteria</p> <p><i>(Displayed & Discussed)</i></p>												
10 minutes	<p>Mental Maths</p> <p><i>(Fun, active way to check recall of numeracy facts)</i></p>												
15 minutes	<p>Mental Agility – Number Talk</p> <p><i>(The children explore a range of strategies and talk about them – classroom conversations. The focus is then on a particular strategy- this can relate to the concept being taught in the main section of the lesson. E.g. If teaching addition then a focus on addition strategies can be the focus in Number Talks) NB. Number Talks can also be taught outwith the lesson but concepts that support the learning in the main section of the lesson should be taught prior to the main lesson.</i></p>												
40 – 50 minutes	<p>Main Section of the Lesson</p> <p><i>(Direct teaching of each group – we would advocate the SEAL methodology for this. This teaching is then further supported/extended by an activity and written task. The written task should come from the resource within the school E.g. SHM/TeeJay/HAM.)</i></p> <table border="1" data-bbox="491 1361 1287 1742"> <thead> <tr> <th>Group 1</th> <th>Group 2</th> <th>Group 3</th> </tr> </thead> <tbody> <tr> <td>Direct Teaching (T)</td> <td>Activity/Game/ICT</td> <td>Written Task</td> </tr> <tr> <td>Written Task</td> <td>Direct Teaching (T)</td> <td>Activity/Game/ICT</td> </tr> <tr> <td>Activity/Game/ICT</td> <td>Written Task</td> <td>Direct Teaching (T)</td> </tr> </tbody> </table>	Group 1	Group 2	Group 3	Direct Teaching (T)	Activity/Game/ICT	Written Task	Written Task	Direct Teaching (T)	Activity/Game/ICT	Activity/Game/ICT	Written Task	Direct Teaching (T)
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10 minutes	<p>Plenary</p> <p><i>Teacher/self/peer assessment</i></p> <p><i>Revisit Learning Intention and Success Criteria</i></p>												

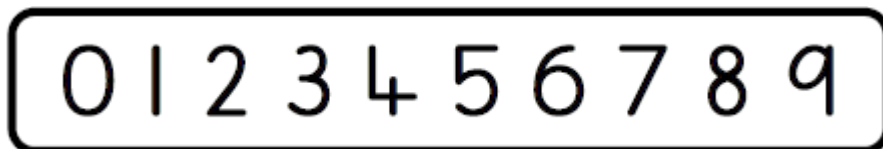
Numeracy Jotters

Most of children's learning in maths should be recorded in their Numeracy Jotters. This could take the form of work written directly into jotters, sheets, photographs or other activities stuck in or observations noted by the teacher. All jotters should be A4 size and the stages should use the following size boxes:

- Primary 1: blank, progressing to 2cm squared
- Primary 2-3: 1cm squared
- Primary 4-7: 7mm squared

Some children, working at different levels throughout the school, may require different sizes of jotters to provide support and challenge. All work in Numeracy Jotters should include:

- A short date, e.g. 21.05.19
- A title, relating to the learning taking place e.g. 'Addition on the Empty Number Line'. Teachers may also wish to ask children to record textbook pages for reference.
- Evidence of a variety of strategies taught throughout the year.
- Any lines drawn with a **ruler**.
- **One digit per box.**
- Numerals should be formed as follows:



It is not necessary for children to record learning intentions or success criteria in jotters. They should be on display on task boards and/or other areas of the class base and the learning should be evident through the title and content of the recorded work.

At the beginning of each session, teachers must explicitly model these expectations for classes and continue to reinforce them throughout the year.

Assessment

Assessment is an integral part of teaching and learning at Blackburn Primary School and is a continuous process. Information for assessment will be gathered in various ways; by talking to the children, observing their work, marking their work, Scottish National Standardised Assessments in P1, P4 and P7 and assessments drawn and adapted from resources, such as TeeJay.

Children are actively encouraged to participate in 'Assessment is for Learning' strategies, such as self and peer assessment, to help them understand and take ownership of their progress in mathematics. Information from these assessments will be used to: inform future planning, identify strengths and areas for development, provide individual and next steps and information for teachers and parents.

Resources and Strategies

At Blackburn Primary School, the teaching, learning and assessment of mathematics and numeracy is not resource led. In other words, our teachers do not follow schemes of work in textbooks. We work together to look carefully at the CfE Experiences and Outcomes and Benchmarks and decide how they can be achieved using a variety of teaching styles, questioning and resources. Below are some of the many resources and strategies that teachers employ to provide exciting and engaging learning experiences for our learners.

Stages of Early Arithmetical Learning (SEAL) and Maths Recovery

Key to its success, SEAL provides a clear framework which makes it easier to pin-point a child's numerical knowledge. By providing clear guidance in the teaching approaches and the key topics involved in early number SEAL gives significant depth to learning various strategies to embed number skills. This framework is used as a teaching guide in Early and First Level classes, alongside Heinemann and Teejay resources and activities.

Maths Recovery, which uses the SEAL framework to assess children who may have gaps in their mathematical learning, is used throughout the school to support individuals and groups of learners.

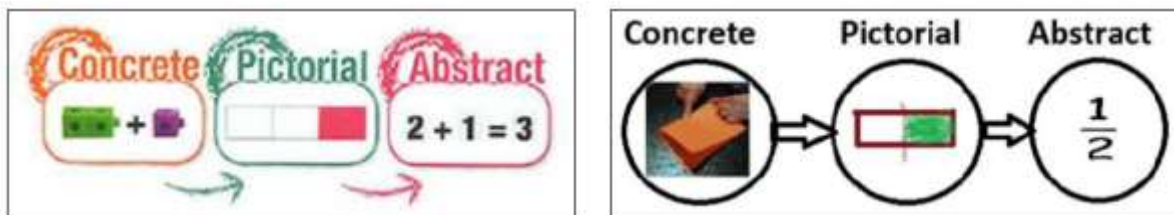
Number Talks

Number Talks are short, daily exercises aimed at building number sense and encouraging children to use different strategies to solve problems. They develop children's ability to play with numbers meaning they can visualise problem solving, perform calculations quickly, and are flexible in their mathematical strategy.

Concrete Materials and Class Base Resources

Manipulative materials are objects designed to represent explicitly and concretely mathematical ideas that are abstract. They have both visual and tactile appeal and can be manipulated by learners through hands-on experiences.(Moyer, 2001)

All areas of maths can be taught using concrete materials. Using concrete materials (e.g. cubes) allows children to progress to seeing representations of numbers (e.g. pictures of cubes) and eventually on to an abstract idea (e.g. using numbers only).The concept is illustrated here:



TeeJay Publishers

TeeJay Maths is the main textbook based resource that we use at Blackburn Primary School. The benefits of TeeJay resources are that they are written specifically with the Scottish Curriculum for Excellence in mind and activities within the textbooks and assessments link to Experiences and Outcomes.

Other resources include:

- Heinemann Active Maths Resources
- Mental Maths Framework Signposts of Progression (appendix 2)
- SAL (Significant Aspects of Learning in Numeracy) document (appendix 5)
- Education City
- Variety of Websites including Sumdog, Topmarks and NRich
- Ipad Apps including Maths in Action
- Numeracy Sacks
- Practical and Concrete Numeracy Resources
- Maths Learning Games including board games etc
- Rekenreks

Continued Career Long Professional Learning

Staff at Blackburn Primary will continue to complete professional reading relating to SEAL stages and strategies to support their classroom practice and pedagogical understanding (appendix 6). Staff will continue to develop and share teaching resources to aid each stage of arithmetic learning. Staff will continue to be involved in peer mentoring opportunities and sharing good practice in the teaching and learning of numeracy.

Partnership

Transitions from Nursery and to High School

Teachers and the leadership team work very closely with staff from Hopefield Nursery to ensure that the transition from pre-school to Primary 1 is as smooth as possible and information about all children's progress in Early Level Numeracy and Mathematics is passed on.

We also work very closely with the Maths Department at Bathgate Academy to ensure that information about all children's progress in Numeracy and Mathematics is passed on.

Partnership with Parents and Carers

Parents and carers will be kept informed of children's achievement through end of year reports, parent consultations and parental engagement sessions such as the PATPAL (Pupil As Teacher Parent As Learner) sessions.