

# Numeracy Professional Learning Resource Guidance Document

## Guidance for use

This document provides guidance on how to use the suite of Numeracy Professional Learning Resources:

Number and Number Processes  
Fractions, Decimal Fractions and Percentages  
Time  
Data & Analysis  
Ideas of Chance & Uncertainty

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# Introduction

This numeracy professional learning resource has been created for practitioners\* in schools and early learning and childcare establishments delivering Curriculum for Excellence. It can be used by:

- individual practitioners
- groups of staff/departments
- whole schools, clusters, local improvement groups and learning communities
- local authorities.

## Aims

The resource aims to help practitioners to:

- reflect on their own practice in developing and promoting numeracy
- consider how to enhance children and young people's numeracy skills, to support their learning across the curriculum
- plan how to develop their own practice to ensure the progression of skills across a range of concepts.

## Layout

The resource has been split into five different documents:

- Number and Number Processes
- Fractions, Decimal Fractions and Percentages
- Time
- Data and Analysis
- Ideas of Chance and Uncertainty

## Content

Within each of the documents there is progressive guidance for each level from early through to fourth level. Each level includes the following:

- Effective learning and teaching approaches
- Things to consider
- Links to other curricular areas
- Reflective questions

This professional learning resource is designed to support improved confidence in standards within Curriculum for Excellence levels and heighten knowledge and understanding of effective learning and teaching progression. This resource aims to impact positively on numeracy attainment by supporting schools and establishments to build their capacity in teaching numeracy concepts and associated skills.

Following the review of learners progress, increased reflection of the effectiveness of teaching and learning and engagement with self-evaluation to identify professional learning needs, practitioners can use this resource to support enhance and support areas for teaching development.

# The Importance of Numeracy

‘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.’

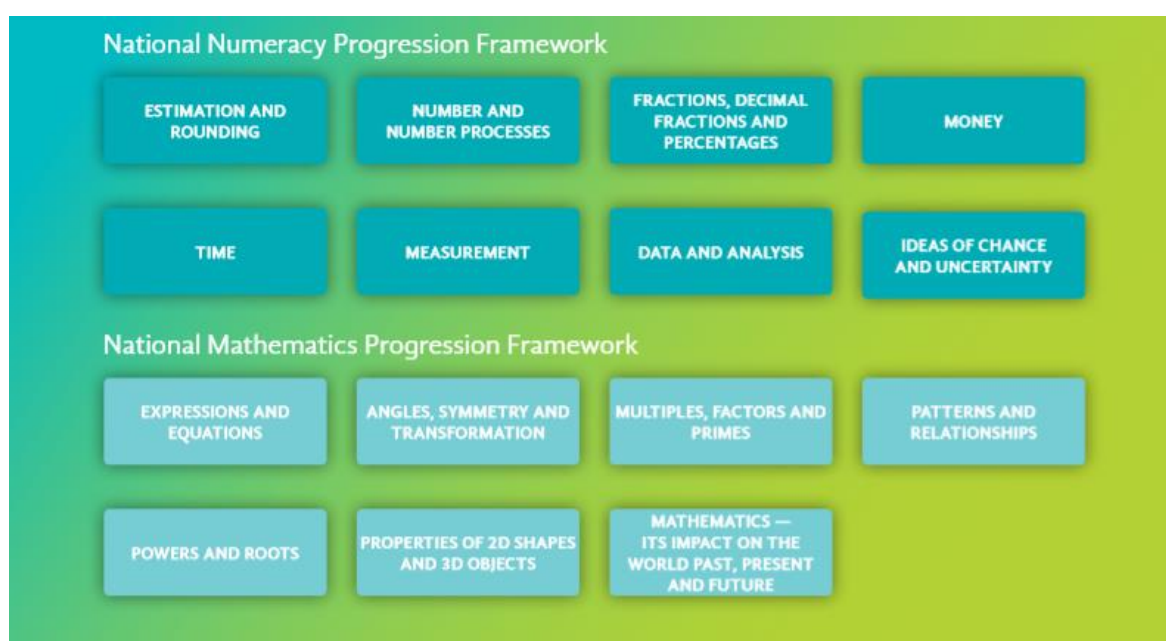
*Building the Curriculum 1- page 20*

Numeracy is defined as the ability to access, use, interpret and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of various situations in adult years. To be numerate is to confidently and effectively use mathematics to meet the everyday demands of life. Numeracy is important for individuals to develop logical thinking and reasoning strategies in their everyday activities. We need numeracy to solve problems and make sense of numbers, time, patterns and shapes for activities like cooking, reading receipts, reading instructions and even playing sport.

Alongside literacy and health and wellbeing, numeracy sits at the heart of Curriculum for Excellence, as the knowledge, skills and attributes which equip children and young people for learning, life and work. All teachers have responsibility for promoting the development of numeracy. Strong numeracy skills lay the foundation for all children and young people to succeed at school, at work and in daily life; greatly improving many factors such as social life, education and employability. It is crucial that opportunities are provided to maximise pupils’ potential, allowing them to make positive contributions to society.

## National Numeracy and Mathematics Progression Framework

Each document within this professional learning resource builds upon the guidance provided in the [National Numeracy and Mathematics and Progression Framework](#). This framework has been produced to support practitioners in developing their understanding of progression within Curriculum for Excellence experiences and outcomes. It identifies within each organiser the key milestones and building blocks that learners should know, before moving on to the next stage of their learning. Numeracy and mathematics organisers should not be taught in isolation from each other as knowledge in one organiser may be required to effectively support progress in others.



## Early Level – The Context for Learning

For early level practitioners this resource should be used alongside the [Realising the ambition: Being Me](#) national practice guidance which reflects the specialist context for learning within the early stages of learning.

As reflected within the document, it is important for practitioners to consider how numeracy is embedded across all areas within the playroom or classroom.

‘Literacy, numeracy and mathematical thinking are woven within the fabric of all conversations, interactions and experiences. They are everywhere in the environment. They are a part of a child’s everyday life and are fundamental to all other learning.’

*Realising the ambition: Being Me P70*

In order to support planning for effective learning and ensure appropriate support and challenge for learners working at early level, it is essential that observations and interpretations of **actions**, **emotions** and **words** are actively sought and used responsively. During learning episodes practitioners are encouraged to consider:

- How can experiences be further developed to deepen learning opportunities?
- What needs to change to inspire new learning and development?

In order to ensure appropriate contexts for learning numeracy and mathematics within early level, it is important that practitioners provide, a blend of child-initiated and adult-directed learning experiences as a result of responsive and intentional planning. This professional learning resource aims to illustrate the breadth of early level learning within numeracy and mathematics. It highlights the need to ensure effective engagement with early level experiences and outcomes to ensure coverage of the level both within and across early learning centres and schools. Opportunities for practitioners to engage in moderation and collaborative professional learning across sectors will support the continuum at the point of transition.

Within early level, emphasis should be placed on child-centred play pedagogy to ensure continuity in children’s curriculum experiences, relevance of experience and opportunities for children to be active leaders of their own learning. It is important to note however that the purpose of this resource is to support the development of practitioner knowledge, skill and understanding of the experiences and outcomes at early level, to maximize opportunities to plan and deliver high quality learning. Whilst reflecting on this resource and engaging with the key messages within the [Realising the ambition: Being Me](#) national practice guidance, practitioners should consider how to effectively deliver high quality learning through a blend of child-initiated, and adult-lead experiences to support the development of numeracy.

## Key national guidance and documentation

**Experiences and Outcomes** - Experiences and outcomes (often called Es and Os) are a set of clear and concise statements about children's learning and progression in each curriculum area. They are used to help plan learning and to assess progress. This professional learning resource mainly focuses on numeracy Es and Os which are referenced using the code **MNU**. However, in some instances the interconnected learning within numeracy and mathematics has resulted in some mathematics Es and Os being referenced using the code **MTH**.

**Benchmarks** - The Curriculum for Excellence benchmarks have been developed to provide clarity on the national standards expected within each curriculum area at each level. Their purpose is to make clear what learners need to know, and be able to do, to progress through the levels. The benchmarks aim to support consistency in teachers' and other practitioners' professional judgements about achievement of a level. They set out clear lines of progression in numeracy and mathematics.

**Principles and practice** - The principles and practice documents are essential reading for practitioners as they begin, and then develop, their work with the statements of experiences and outcomes. Each document sets out the purposes of learning within a particular curriculum area, describes how the experiences are organised, and offers guidance on aspects such as learning and teaching, broad features of assessment, progression and connections with other areas of the curriculum.

**Transforming Scotland into a maths positive nation: final report of the Making Maths Count Group** – Making Maths Count is a Scottish Government initiative. The Making Maths Count National Reporting Group undertook an extensive programme of engagement work to understand the factors creating negative attitudes towards maths. This report focuses on three key areas and how they can be addressed:

- Transforming public attitudes to maths.
- Improving confidence and fluency in maths for children, young people, parents and all those who deliver maths education to raise attainment and achievement across learning.
- Promoting the value of maths as an essential skill for every career.

To address these key areas, the report makes 10 recommendations to transform Scotland into a maths-positive nation.

**Numeracy and Mathematics PLC** - This digital professional learning community provides access to resources for learning, teaching and assessment in numeracy and mathematics. The site also provides a wealth of professional learning for a wide range of aspects related to numeracy and mathematics.

**Numeracy Across Learning** - This professional learning resource supports staff to develop knowledge and understanding about progression and standards in numeracy across the curriculum.

**Numeracy in Social Studies** - Examples of contexts for learning across Social Studies to improve numeracy skills. Social Studies offer a rich opportunity to contextualise numeracy for children and young people. Across the range of Social Studies subjects there are many opportunities to enable learners to improve their numeracy skills, whilst enjoying the exciting learning opportunities which these contexts provide

**Moderation Hub** – This digital hub hosts a virtual learning environment to support career long professional learning on all aspects of the moderation cycle. This resource can support self-evaluation in approaches to learning, teaching and assessment.

**Addressing Dyslexia Toolkit** – The impact of dyslexia as a barrier to learning should be considered within numeracy. Learners with dyslexia may experience different levels of associated difficulties such as short term working memory, sequencing and directionality and number skills. It is important to take these into consideration. Further guidance is provided within this toolkit.

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