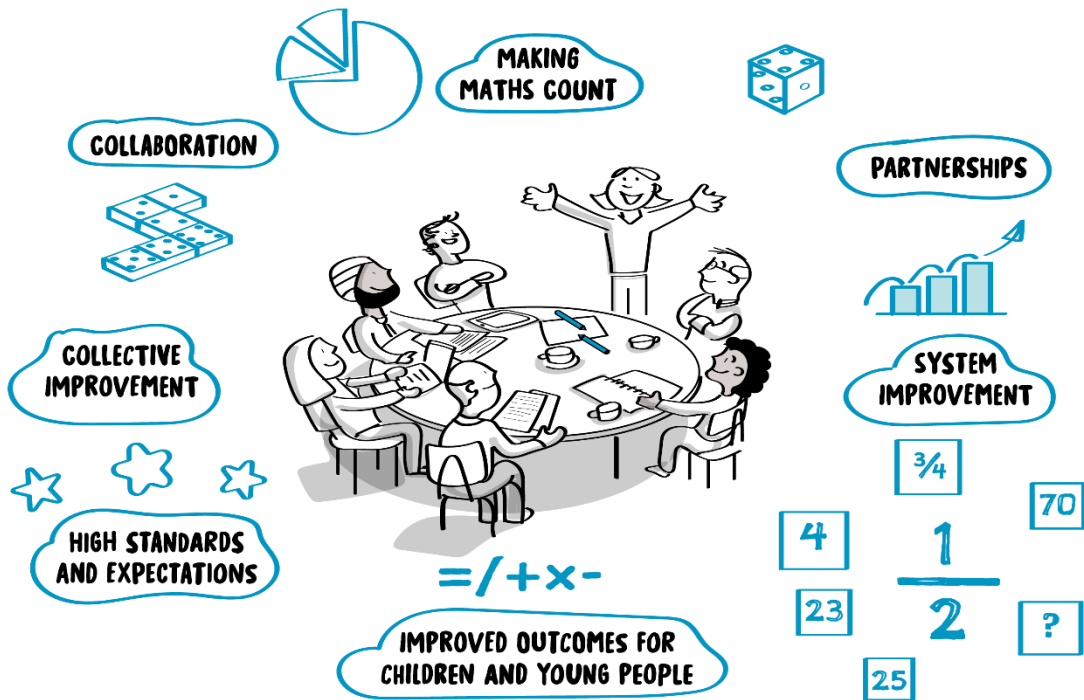


A National Response to Improving Mathematics (NRIM) in Scotland

Summary report of interim recommendations and position co-developed through NRIM Short Life Working Groups
February 2023

National Response to Improving Mathematics



Partnership Board



Scottish Government
Riaghaltas na h-Alba
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Introduction

The NRIM Partnership Board was established in spring 2021. As stated within the NRIM Terms of Reference, the **aspirational aims** of the NRIM Partnership Board are as follows:

- to transform Scotland to be a greater maths-positive nation (achieved partly by promoting the joy of mathematics)
- to support and promote the belief that everyone has the capability to become proficient at mathematics, regardless of their circumstances in life
- to ensure skills for learning, life and work are embedded within teaching and learning
- to ensure consistently high standards of professional learning in numeracy and mathematics across Scotland
- to improve levels of mathematical literacy
- to improve attainment in numeracy and mathematics in Scotland

The NRIM Partnership Board is committed to developing an action plan which will include:

- a national numeracy and mathematics strategy which provides a clear route map for contextualised local strategy development and school level improvement response that addresses:
 - improvements in learning, teaching and assessment in mathematics for learning, life and work
 - the findings and recommendations of the recent OECD reviews into implementation of Curriculum for Excellence (CfE) and the future of assessment and qualifications
 - employability in the post-Covid economy
- a robust programme of bespoke professional learning for both practitioners and leaders. This will include leadership for improvement, training, advice and support for schools, teachers and practitioners. This robust programme will aim to develop consistency and improve standards across Scotland and ultimately accelerate pupil achievement in the subject
- the launch of a renewed focus on building capacity in numeracy and mathematics through existing and enhanced career long professional learning and leadership programmes and through a consistent approach to Initial Teacher Education (ITE)
- a self-evaluation framework specifically for numeracy and mathematics which local authorities and school leaders can use to evaluate the effectiveness of curriculum, learning and teaching, and identify opportunities to enhance and strengthen curriculum design and delivery
- a realistic assessment of the resources necessary to support this offer

Short Life Working Groups (SLWG)

Short life working groups (SLWGs) were established in January 2022. These were chaired by NRIM Partnership Board members and made up of a range of stakeholders from across the system that reflected the range of individuals, organisations and other representational bodies. SLWGs were based around key themes and issues identified by the board and the groups were tasked with co-producing recommendations and actions linked to the themes.

These SLWGs met monthly during the second half of academic session 2021-22 and chairs reported back on progress at every NRIM Partnership Board meeting until June 2022. At the June board meeting individual SLWGs recommendations were shared, summarised and discussed amongst board members.

These initial recommendations form the starting point that will allow the NRIM Partnership Board to develop a more detailed implementation action plan which will in turn inform the national improvement direction.

Recommendations

There were 32 priorities identified across the working groups. Through discussion **7 key recommendations** were identified. These are listed below and will provide the starting point for a more detailed implementation action plan to be developed.

An Implementation Group should be established and made up of NRIM Board members and colleagues from across Scotland. This group will drive the implementation of these recommendations.

1. A National Numeracy & Mathematics Strategy

The Scottish Government should build on recommendations from the Making Maths Count Report 2016 and work with partners to commission a National Numeracy and Mathematics Strategy. The strategy should outline the key characteristics of high quality learning, teaching and assessment. The strategy will aim to empower local authorities (LAs), establishments and practitioners to efficiently identify actions for improvement in relation to learning, teaching and assessment in numeracy and mathematics.

2. Implementing the National Numeracy and Mathematics Strategy

Education Scotland should support Regional Improvement Collaboratives (RICs) and local authorities to plan for the implementation of the national numeracy and mathematics strategy and support the development of priorities and strategy reflective of the local context. Regional and local strategy should be explicit around how positive leadership, at all levels, ensures professional learning in maths and learning takes account of the national strategy in order to secure measurable impact on learners.

3. A Review of CfE Guidelines, Policy and Guidance

The Scottish Government should work with partners to review the current Numeracy and Mathematics Curriculum. This review should streamline the existing policy and guidance and ensure that the Numeracy and Mathematics curriculum is strengthened and progressive to meet the needs of all learners now and in the future. This coherent and progressive curriculum will ensure a shared understanding of knowledge and skills development, increase pace and challenge and be accessible for all.

4. National Professional Learning Offer

Education Scotland and their partners should provide an evolving national programme of professional learning that is responsive to need and equitably accessible to all practitioners across Scotland. Through a collective responsibility, this programme will support practitioners to enhance their professional practices in meeting the needs of their learners. ES will provide national guidance to practitioners with clear links to the Numeracy Professional Learning Resource (PLR). This professional learning (PL) offer will strengthen understanding of progression across key mathematical concepts and inform learning, teaching and assessment.

5. Initial Practitioner/Teacher Education

Providers of initial practitioner education (IPE) and initial teacher education (ITE), local authorities and partners should develop clear guidance about the roles and responsibilities of everyone who supports beginning and early career practitioners. Working in partnership will ensure ITE, early career and PL programmes provide access to the National Professional Learning Offer and prepare, equip and support ongoing development of practitioner delivery of mathematics in 21st Century Scotland.

6. Self-Evaluation Toolkit

The NRIM Implementation Group will develop a diagnostic numeracy and mathematics reflection and self-evaluation toolkit in line with the national numeracy and mathematics strategy. This toolkit will help practitioners, local authorities and establishments identify areas of strength and provide exemplification of effective practice, e.g. case studies, to help identify priorities for improvement.

7. A Plan for Implementation

The NRIM Implementation Group will produce a plan which clearly defines the roles and responsibilities for all stakeholders, to ensure collective responsibility, in taking forward these recommendations.

The members of the SLWGs noted the benefits of the co-production approach taken and recommended that the established networks of practitioners created to support the SLWGs should be maintained and expanded. There was broad agreement across the chairs and SLWG members that these existing networks be included in the co-creation of the next stage of the national strategy and implementation action plan.

Groups noted that the principles outlined within [Curriculum for Excellence, Building the Curriculum 4: Skills for learning, skills for life and skills for work](#) should be reflected in the new national strategy narrative.

The narrative should address:

- the current context
- raising aspirations for a maths confident nation
- curriculum development and design
- approaches to learning, teaching and assessment
- development of real-life skills
- progression
- the importance of partnership working
- implementation framework
- timescales and resources for delivery
- plans for on-going review

Groups also noted that other existing important documentation should remain as core guidance and have a strengthened role in the national narrative. This includes:

- Curriculum for Excellence Principles and Practice papers : [Mathematics](#) and [Numeracy Across Learning](#)
- Multiplying Skills, Adding Value thematic inspection : [Multiplying skills, adding value - Numeracy and mathematics for Scotland's learners: a thematic inspection](#)
- How good is our school? (HGIOS 4): [How good is our school?](#)
- Capturing learners' views through the United Nations Convention on the Rights of the Child (UNCRC) : [Recognising and realising children's rights](#)
- Numeracy and Mathematics Professional Learning Community (PLC) [Numeracy and Mathematics PLC - Home \(sharepoint.com\)](#). (Glow log in required).

NRIM Sub-Group

In October 2022, as part of the next stage of development a sub-group, made up of four NRIM Partnership Board members, was tasked with drawing up initial proposals regarding how the seven key recommendations are to be taken forward. This sub-group reported back to the wider Partnership Board in December 2022. The group proposed that an interim NRIM update should be shared with all 32 local authorities and provide the opportunity for feedback, on the recommendations, to be gathered. This feedback from local authorities will assist the NRIM Partnership Board with clarification of immediate priorities, help with timescales and identify potential 'pilot' activity.

Finally, the group also recommended that regular NRIM communications should continue to be sent termly to local authorities and opportunities for feedback and dialogue extended to ensure the creation of an agreed and coherent action plan.

Contact

If you require any additional information regarding this report, please contact the Education Scotland [Numeracy and Mathematics enquiries mailbox](#).

Alternatively, [John Neeson](#), Numeracy and Mathematics Senior Education Officer.

Short life working group membership was as follows:

Early Years SLWG

- Scott Haxton Tayside Regional Improvement Collaborative (TRIC) Lead, Head Teacher (HT), Angus Council (**Chair**)
- Peter Valentine, Forth Valley & West Lothian (FVWL) Lead, Pedagogy Officer (West Lothian Council)
- Karen McLaughlin, Early Years HT, (Stirling Council)
- Marianne McCron, Support Teacher Early Learning & Childcare (ELC), (East Lothian Council)
- Ross Gibson, Depute Head Teacher (DHT), (Fife Council)
- Kathleen McGuire, Quality Improvement Manager (East Renfrewshire Council)
- Allan Fleming, ELC Education Officer (Education Scotland)
- Ashley Page, Principal Teacher (Numeracy), FVWL RIC
- Laura Gallagher, Principal Teacher (Numeracy), FVWL RIC
- Gemma Paterson, Lead Early Years Pedagogue (Falkirk Council)
- Yvonne Somerville, Numeracy&Mathematics (N&M) Education Officer (Education Scotland)
- Maria Docherty, N&M Education Officer (Education Scotland)

Primary SLWG

- Robert McCallum, Scottish Attainment Challenge (SAC) Education Manager (East Ayrshire Council) (**Chair**)
- Peter Valentine, Numeracy Pedagogy Officer (West Lothian Council)
- Natalie McMillan, National Parent Forum Scotland (NPFS)
- David Maxwell, Education Officer (Dumfries & Galloway Council)
- Kirsty Stephen, N&M Co-ordinator (North Ayrshire Council)
- Sarah Leakey, Numeracy Development Officer (Highland Council)
- Lynne McBain, Education Recovery Officer (Clackmannanshire Council)

- Lee Gray, Numeracy & Digital Learning Development Officer (Renfrewshire Council)
- Robert Drummond, Primary Teacher (Edinburgh Council)
- Ross Gibson, DHT (Fife Council)
- Craig Lowther University of the Highlands & Islands (UHI) Head of School
- Iona Coutts, N&M Education Officer (Education Scotland)
- Maria Docherty, N&M Education Officer (Education Scotland)

Secondary SLWG

- Andy Thompson Northern Alliance, Regional Improvement Collaborative (RIC) Representative (**Chair**)
- Robert McCallum, SAC Education Manager (East Ayrshire Council)
- Natalie McMillan, NPFS
- Garry Maguire, West Partnership RIC Representative
- Chris McGrane, Principal Teacher
- Susan Thomson, Education Team Manager (Falkirk Council)
- Calum Blair, Curriculum Leader Numeracy and Computing (East Lothian Council)
- Lee Gray, Numeracy & Digital Learning Development Officer (Renfrewshire Council)
- Gary Lamb, Principal Teacher of Mathematics (Glasgow City Council)
- Nanette Brotherwood, N&M Education Officer (Education Scotland)
- Jaclyn Andrews, N&M Education Officer (Education Scotland)

Initial Teacher Education SLWG

- Tara Harper, Lecturer in Mathematics Education and Headship at Dundee University (**Chair**)
- Lise McCaffery, Professional Learning and Leadership (PLL) Senior Lead Specialist (Education Scotland)
- Carlo Rinaldi, Glasgow University
- Laura Gallagher, Principal Teacher (Numeracy), FVWL RIC
- Chris Smith, Scottish Mathematical Council
- Chris McKenna, Principal Teacher (South Ayrshire Council)
- Andrew Gallacher, Napier University
- Ruth Forrester, Edinburgh University
- Helen Martin, Aberdeen University
- Jackie Marshall, Strathclyde University
- Jaclyn Andrews, N&M Education Officer (Education Scotland)
- Stephen Shields, N&M Education Officer (Education Scotland)

Future of the Curriculum SLWG

- Karen Haspolat, Quality Improvement Officer (East Lothian Council) (**Chair**)
- Andy Brown, Senior Education Officer Curriculum (Education Scotland)
- Andy Thompson, Northern Alliance RIC Representative (Shetland Council)
- David Maxwell, Education Officer: Dumfries & Galloway Council
- Scott Morrow, Numeracy Development Officer (South Ayrshire Council)
- Ashley Page, Principal Teacher (Numeracy), FVWL RIC
- Darren McKinnon, Quality Improvement Manager (Edinburgh City Council)
- Stuart Cathro, His Majesty's Inspector of Education (HMIE) (Education Scotland)
- Gary Lamb, Principal Teacher of Mathematics (Glasgow City Council)
- Stephen Shields, N&M Education Officer (Education Scotland)
- Nanette Brotherwood, N&M Education Officer (Education Scotland)

Making Maths Count- SLWG

- Garry Maguire, West Partnership RIC Representative (**Chair**)
- Lise McCaffery, PLL Senior Lead Specialist (Education Scotland)
- Tara Harper, Lecturer in Mathematics and Headship (Dundee University)
- Mary Rendle, Numeracy Pedagogy Officer (West Lothian Council)
- Darren McKinnon, Quality Improvement Manager (Edinburgh City Council)
- Scott Haxton, Head Teacher (Angus Council)
- Denise Doig, Education Support Officer (Perth and Kinross Council)
- Carol Lyon, Scottish Mathematical Council
- Kathleen McGuire, Quality Improvement Manager (East Renfrewshire Council)
- Yvonne Somerville, N&M Education Officer (Education Scotland)
- Iona Coutts, N&M Education Officer (Education Scotland)