**Assessment in Numeracy and Maths**

Developing an assessment model for numeracy and maths provides a collective understanding for practitioners of what constitutes assessment in numeracy and maths within the context of an establishment.

When planning, learning, teaching and assessment:

* Assessment should be considered as an integral part of the planning process
* Assessment should be drawn from both ongoing and periodic assessment
* Assessment should consider breadth, challenge and application of learning
* The learner is at the heart of the process. Assessment approaches should allow the learner to demonstrate how well and how much they have learned

*Practice is most effective where teachers use a range of assessment approaches flexibily to identify strengths, learning needs and appropriate support…..* (Building the Curriculum 5)

This link provides an example of how a school developed a collective understanding of their assessment model in numeracy and maths and what constitutes assessment in the context of that school: [Inservice Assessment Discussion](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/Inservice%20ASSESSMENT%20discussion.docx?d=wad5bc2e39b5f41348a7700136f189a69)

If effectively planning numeracy and mathematics learning opportunities for assessment naturally integrates into daily teaching and learning episodes in a variety of ways e.g. [Number Talks](https://blogs.glowscotland.org.uk/ea/numeracyandmathematics/category/number-talks-and-splats/). Here are some examples of how a small group of East Ayrshire practitioners reflected on ways that they were employing a range of AiFL approaches in maths to ‘check in’ with children and young people to assess progress through an episode of learning: [Gathering Evidence](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/GATHERING%20EVIDENCE%20-%20children.dms.docx?d=w9c8c1641cc3549c4bf2d8d02693f3ba2)

Sourcing or developing good quality assessment items is key and there are a wide range of assessment sources being utilised across East Ayrshire to support integrating assessment in learning and creating periodic assessment. The range of assessment sources available to practitioners include assessments included within commercially purchased schemes, authority assessment tools, on-line sources and locally developed assessment tools.

The following section refers to the sources of assessment shared through numeracy and maths CLPL over the last three years including assessment instruments used within the SAC Raising Attainment in Numeracy Programme.

The East Ayrshire Numeracy Group created the Numeracy Toolkit Assessments.  These assessments were locally produced assessments designed to support teacher judgement around the end of a level. These assessments still provide a good source of questions for an assessment of this type.  They are here:

[First Level Toolkit](https://glowscotland.sharepoint.com/sites/EastAyrshire/eaglowcentralsitemain2019/easacglowcentralmain2019/eanummathsresourcessitemain2019/Shared%20Documents/Numeracy%20Assessment%20Toolkit%20First%20Level) [Second Level Toolkit](https://glowscotland.sharepoint.com/sites/EastAyrshire/eaglowcentralsitemain2019/easacglowcentralmain2019/eanummathsresourcessitemain2019/Shared%20Documents/Numeracy%20Assessment%20Toolkit%20Second%20Level) [Third Level Toolkit](https://glowscotland.sharepoint.com/sites/EastAyrshire/eaglowcentralsitemain2019/easacglowcentralmain2019/eanummathsresourcessitemain2019/Shared%20Documents/Numeracy%20Assessment%20Toolkit%20Third%20Level)

Attempting to create such a standardised assessment for a level/stage of progress is very challenging and the creation of an assessment bank by schools may be better way to go.  A grouping of assessment questions or assessment tasks for one group of learners may not be appropriate for another set of learners as these assessment tools, if linked to the learning, should assess the learning that has taken place.  Moderating assessment questions/tasks for such a bank to ensure they assess depth, challenge and application would be beneficial.

This is why many providers of standardised assessment in maths use an adaptive model in their standardised assessments (like SNSA, and CEM) so that children are not presented with too many questions they can't answer within assessment tasks. Scottish Government advice on the use of standardised assessments can be found in the Appendix below. This advice could be applied to any pieces of summative assessment used to assess progress in numeracy and mathematics.

A high quality source of questions for such a bank is available from White Rose Maths.  The assessments are linked to individual topics and end of blocks of learning.  These assessments are developed for the English education system but the majority of questions are relevant to the similar age and stage in the BGE.  A number of our schools across the authority are using these as a source of assessment questions and are referred to regularly within authority CLPL inputs. A large number of these assessments have been uploaded as a bank to the East Ayrshire Numeracy Tile on Glow here:

[White Rose Autumn Assessments](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/White%20Rose%20Autumn%20Assessments) [White Rose Spring Assessments](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/White%20Rose%20Spring%20Assessments)

[White Rose Summer Assessments](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/White%20Rose%20Summer%20Assessments) [White Rose End of Block Assessments](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/White%20Rose%20End%20of%20Block%20Assessments)

The full range of assessments are available on the White Rose Maths website here:

<https://whiterosemaths.com/resources/assessment/primary-assessment/>

Another high quality source of assessment is from the National Centre for Excellence in Teaching Mathematics (NCETM).  These assessment resources are structured to assess mastery of a particular concept and beyond mastery (challenge) in relation to a particular concept.  Again, created in an English context but very relevant to the BGE.  Uploaded on the Glow tile here: [NCETM Assessment Materials](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/NCETM%20Assessment%20Materials)

They start from Year 1 (P2). They are available through the NCETM website here:

<https://www.ncetm.org.uk/classroom-resources/assessment-materials-primary/>

<https://www.ncetm.org.uk/classroom-resources/assessment-materials-secondary/>

The EA Diagnostic Assessment Tool adapted from the New Zealand Assessment Tool is designed to assess knowledge and strategies used by children across key concepts.  It can be a time consuming assessment to administer if used in its entirety, as it is a one to one assessment, but gives valuable evidence regarding a child's progress across number concepts.  The toolkit can be accessed here:

 [EA Assessment Tool](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/EA%20Assessment%20Tool)

The SAC AIMs have created a video for Classroom Assistants on using the tool here:

 [EA Numeracy Assessment guidance.mp4](https://glowscotland.sharepoint.com/sites/EastAyrshire/eastayrshirenumhub2017/eanummathshiblyndaktrainingmain2018/Shared%20Documents/CA%20Training/EA%20Numeracy%20Assessment%20guidance.mp4)

The links above refer to the most commonly used assessment sources by establishments across the authority but a few more sources are listed here:

[NRICH Early Years Activities](https://nrich.maths.org/13371)

[NRICH Curricular Mapping Document (Scotland)](https://blogs.glowscotland.org.uk/ea/public/numeracyandmathematics/uploads/sites/16806/2020/07/03123347/CfEMappingNRICHLevels1_2.doc)

[Transum Maths](https://www.transum.org/software/)

[Open Middle](https://www.openmiddle.com/)

[Primary Maths Challenge Question Downloads](https://www.primarymathschallenge.org.uk/downloads)

This list is not exhaustive and there is a wide range of assessment sources available that teachers will find useful in gauging learners’ progress in numeracy and mathematics.

Further information and key messages on developing High Quality Assessment can be found here on the [East Ayrshire Planning, Learning, Teaching, Assessment and Moderation Blog](https://blogs.glowscotland.org.uk/ea/assessmentandmoderation2020/category/session-3-developing-high-quality-assessments/)

Appendix

**Practical advice on how standardised assessments can be used in the context of the Scottish assessment approach**

**Practitioners**

|  |  |
| --- | --- |
| **Do** | **Don’t** |
| Plan the SNSA/MCNG as part of normal teaching, learning and assessment | Don’t set up the SNSAs/MCNGs as a special or extra activity |
| Remember that the SNSAs/MCNGs only assess some aspects of the literacy and numeracy curriculum  | Don’t consider SNSA/MCNG outcomes as the sole means of identifying whether or not children have achieved CfE levels |
| Administer the SNSAs/MCNGs at a time of you and your school’s choosing, based on how you will use the diagnostic information | Don’t limit SNSAs/MCNGs to an assessment window |
| Think about how SNSA/MCNG diagnostic information can be used as part of a range of evidence, to *contribute*, to:* identifying learners’ strengths and development needs
* planning next steps in learning
* moderation activities
* teacher professional judgements on progress
* ongoing, holistic feedback for parents
* information for transition
* decisions about grouping children

  | Don’t use SNSA/MCNG data in isolation or give it greater weight than other assessment evidence, when:* identifying learners’ strengths and development needs
* planning next steps in learning
* undertaking moderation activities
* making professional judgements on learners’ progress
* providing ongoing, holistic feedback to parents
* considering information for transition
* grouping children
 |
| Consider the wellbeing of your children and use your professional judgement on the level of involvement and support that children with additional support needs require. | Don’t create unnecessary tension or stress around assessments which are intended to be low stakes and diagnostic. |