

# Evidence Based Maths Assessments

As a part of the Literacy and Numeracy Improvement Cycle each site needs to clearly plan and document assessments used to inform teaching practice and monitor and track the progress of ALL learners ensuring additional support and challenge. These occur at agreed times, are quality controlled and are correlated with other data for accurate analysis of learning needs.

Sites may wish to use additional evidence-based assessments such as:

Domain	Title	Description	Available from
<b>Maths</b>	<i>Mathematics Online Interview</i>	The interview was developed as part of the Early Numeracy Research Project (1999-2001) and consists of appropriate hands-on assessment tasks where students demonstrate mathematical understanding and preferred strategies for solving increasingly complex tasks.	<a href="http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/continuum/Pages/mathsinterview.aspx">http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/continuum/Pages/mathsinterview.aspx</a>
	<i>Back to Front Maths</i>	Assesses understanding rather than fluency of students Mathematical understanding to determine what children understand and address misconceptions; Register for range of resources including assessment, planning tools, lesson plans, links to AC, investigations through problem based teaching	<a href="https://www.backtofrontmaths.com.au/">https://www.backtofrontmaths.com.au/</a>
	<i>I can do Maths</i>	A test of beginning mathematical ability in the first three years of school. Administered orally to students individually or in small groups and consists of items that are presented in the form of pictures. Contains open-ended and multiple-choice questions.	<a href="https://shop.acer.edu.au/i-can-do-maths-manual">https://shop.acer.edu.au/i-can-do-maths-manual</a>
	<i>Oxford Maths Assessment</i>	A comprehensive mathematics assessment solution for Years 2 to 6 that provides both assessment of and assessment for learning linked to the Australian Curriculum	<a href="https://www.oup.com.au/primary/sample_pages/mathematics">https://www.oup.com.au/primary/sample_pages/mathematics</a>
	<i>PAT-Maths</i>	Provides norm-referenced information to teachers about the level of achievement attained by their students in the skills and understanding of mathematics	<a href="https://www.acer.edu.au/patmaths">https://www.acer.edu.au/patmaths</a>
	<i>Targeted Early Intervention Program</i>	Assessment for students experiencing substantial difficulty in learning numeracy in the early years – part of the NSW Department of Education & Training	<a href="http://mannerparkworkspace.weebly.com/uploads/2/5/9/1/25919629/tenassessmenttask.pdf">http://mannerparkworkspace.weebly.com/uploads/2/5/9/1/25919629/tenassessmenttask.pdf</a>
	<i>The Mathematics assessment Interview</i>	Assesses number, space and measurement	<a href="http://ceobmaths.weebly.com/uploads/7/1/5/6/7156403/2011_mai_final_highlighted_script_ballarat.pdf">http://ceobmaths.weebly.com/uploads/7/1/5/6/7156403/2011_mai_final_highlighted_script_ballarat.pdf</a>
<b>Multiplicative thinking</b>	<i>Scaffolding Numeracy in the Middle Years</i>	The Scaffolding Numeracy in the Middle Years (SNMY) is a new assessment-guided approach to improving student numeracy outcomes in Years 4 to 8.	<a href="http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/mathsassess.aspx">http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/mathsassess.aspx</a>
<b>Number</b>	<i>Assessment for common misunderstandings</i>	The tools are based on a series of highly focussed, research-based Probe Tasks and comprise a number of easy to administer, practical assessment tasks designed to address a key area of Number across 6 levels (equates to Foundation- end Year 10). Comprises a number of easy to administer, practical assessment tasks designed to address a key area of Number across 6 levels (equates to Foundation- end Year 10)	<a href="http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/misunderstandings.aspx">http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/maths/assessment/Pages/misunderstandings.aspx</a>
	<i>Count Me In Too</i>	A part of innovative numeracy project operating across New South Wales Department of Education and Training primary schools.	<a href="https://numeracylinks123.wikispaces.com/file/view/Schedule+for+Early+Number+Assessment+(SENA+1).pdf">https://numeracylinks123.wikispaces.com/file/view/Schedule+for+Early+Number+Assessment+(SENA+1).pdf</a>

Domain	Title	Description	Available from
	<i>Maths for Inclusion</i>	Ascertaining student's mathematical knowledge and the strategies they use in order to improve their understanding and/or address misunderstandings. To use information gained from assessment to plan appropriate intervention. Recommended for Year 3 students and above who need intervention in number concepts. Administered 1:1	<a href="https://myintranet.learnlink.sa.edu.au/library/document-library/guideline/teaching/numeracy/an-intervention-kit-for-assessment-in-number.pdf">https://myintranet.learnlink.sa.edu.au/library/document-library/guideline/teaching/numeracy/an-intervention-kit-for-assessment-in-number.pdf</a>
<b>Number – Fluency</b>	<i>Westwood One Minute Basic Facts Test</i>	Assesses basic number fact fluency in addition, subtraction, multiplication and division.	<a href="http://mathscohr.global2.vic.edu.au/assessment/westwood-one-minute-tests/">http://mathscohr.global2.vic.edu.au/assessment/westwood-one-minute-tests/</a>
<b>Numeracy</b>	<i>DECD Indicators of Preschool Numeracy and Literacy</i>	These indicators describe the child being and becoming numerate. They are conceptual, behavioral, interconnected and observable in the day-to-day context of a pre-school and can be used as assessment for learning.	<a href="https://www.decd.sa.gov.au/sites/g/files/net691/f/implementation-guidelines-indicators-preschool.pdf?v=1465356423">https://www.decd.sa.gov.au/sites/g/files/net691/f/implementation-guidelines-indicators-preschool.pdf?v=1465356423</a>
	<i>Early Numeracy: Assessment for Teaching and Intervention (Math Recovery)</i>	Three books providing a comprehensive package on: <ul style="list-style-type: none"> <li>- The identification, analysis and reporting on children's numerical knowledge, skills and strategies</li> <li>- How to design, implement and evaluate a course of teaching intervention</li> <li>- How to incorporate both assessment and teaching in the daily numeracy program in differing class organisations and contexts</li> </ul>	<a href="https://www.amazon.com/Early-Numeracy-Assessment-Teaching-Intervention/dp/141291020X">https://www.amazon.com/Early-Numeracy-Assessment-Teaching-Intervention/dp/141291020X</a>
<b>Other</b>	<i>AEDC data</i>	Relevant cohort data collected every 3 years about Reception children: Language & cognitive skills – Interest in reading and writing, can count and recognize numbers and shapes; Communication skills & general knowledge – Can tell a story, communicate with adults & children, articulation.	<a href="https://www.aedc.gov.au">https://www.aedc.gov.au</a>
	<i>General Capability Numeracy Continuum</i>	Enables teachers to identify the general level of knowledge, skills, behaviours and dispositions that students need to use mathematics in a wide range of situations.	<a href="http://www.australiancurriculum.edu.au/generalcapabilities/numeracy/continuum#layout=columns">http://www.australiancurriculum.edu.au/generalcapabilities/numeracy/continuum#layout=columns</a>
	<i>Performance Indicators in Primary Schools</i>	The PIPS On-Entry Baseline Assessment is administered by the University of Western Australia and offered to schools and systems in Australia. This assessment of literacy and numeracy can assist with assessing progress of students entering primary school.	<a href="http://www.education.uwa.edu.au/pips">http://www.education.uwa.edu.au/pips</a> ; Avail from: <a href="https://www.pearsonclinical.com.au/products/view/148#pricing=&amp;tabs=0">https://www.pearsonclinical.com.au/products/view/148#pricing=&amp;tabs=0</a> )
	<i>PAT EY Maths for mid-Rec &amp; mid-Year 1</i>	Covers five strands of early maths and aligns to the Australian Curriculum – Number, Algebra, Measurement, Geometry and Statistics.	DECD trial between 5 <sup>th</sup> September and November 11 <sup>th</sup> 2016. For more information <a href="mailto:DECD.PAT@sa.gov.au">DECD.PAT@sa.gov.au</a>

# New Zealand Assessment Tool Selector:

The assessment tool selector is a resource for teachers and schools to help them select the most appropriate assessment tool to suit their particular purpose. The selector gives you information about assessment tools most frequently used in New Zealand schools, in every area of the curriculum up to and including year 10. You can also compare tools to see which one is the most suitable. See: <http://assessment.tki.org.nz/Assessment-tools-resources/Assessment-tool-selector>

## Further Information:

Recommendation	Evidence
Screen <b>all</b> students to identify students at risk and provide interventions twice a year <sup>1</sup>	Moderate
Correlate screening data to other data measures for relevant year levels (eg PAT M and NAPLAN)	Moderate

### Evaluate the screening tools you use by considering:

- Predictive validity – how well a student’s screening measure in the beginning of the year predicts later in the year maths achievement
- Reliability - consistency and precision
- Efficiency – how long it will take to administer

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<sup>1</sup> IES April 2009 What works clearing house Assisting students struggling with mathematics : Response to Intervention for Elementary and Middle Schools p14  
Leanne Prior 2016