

Math Assessment and Support Tools

This resource was compiled in collaboration with a team of ARPDC Math Consultants. This list is not meant to be used as an authorization of the tools or supports included. It is meant to be used as a starting place for schools or districts when looking for information on what math assessment tools or supports are available. As with all resources, teachers and schools must always check for alignment to the curriculum and a fit for their context.

Definitions:

Screener - a quick and easy tool to administer and score that flags the possible presence of a particular problem.

Diagnostic - determine students' individual strengths, weaknesses, knowledge, and skills through the analysis.

Intervention - activities/teaching strategies intended to address gaps in knowledge/skills that have been identified in assessments.

Progress Monitoring - identifies student's progress toward a predetermined goal.

Adaptive Practice - evaluates what a student knows and presents that student with new practice questions to solve that are just at the edge, or just beyond the edge, of the student's demonstrated knowledge and understanding.

Tool	Type	Grades	Approx. Time	Format	Implementation Considerations	Notes	Cost
Alberta Education Provincial Numeracy Assessments	Screener/ Diagnostic	K-4	Varies	Observation (K-1) Paper-pencil (2-4)	<ul style="list-style-type: none"> Whole class Identifies students' knowledge of the number system, number operations, and proportional reasoning skills. 	<ul style="list-style-type: none"> Available on new LearnAlberta Kindergarten and Grade One includes counting skills Broken into Number subsets Gr. 4 is now available on new LearnAlberta 	Free
ANIE Assessment of Numeracy in Education	Diagnostic	1 - 9	Varies	Paper-pencil	<ul style="list-style-type: none"> Whole Class Single-page assessment template that guides students to explain math concepts and make connections to their relevance in the real world. Suggests easy ways to grade and interpret the results, provides student samples that illustrate the ANIE in action. 	<ul style="list-style-type: none"> Uses performance standards to assess student understanding of math concepts 	Cost

Elk Island Math Assessment	Screener/ Diagnostic	1-10	30-60 minutes	Observation Paper/pencil	<ul style="list-style-type: none"> • Whole Class • Gr. 1 & 2 Interview Component: 12-15 mins • All grades Multiple Choice and Numerical Response: 30-45 mins approx • District level decision to use 	<ul style="list-style-type: none"> • Connected to the Alberta Curriculum (2022) Organizing Ideas of Number, Algebra and Patterns. (K-6) • Connected to Alberta Program of Studies 7-9 (2006) • Based on the Mathematics Learning Progression Strands (McGarvey, 2018), of Number, Patterning and Algebra 	Free access Contact
First Steps in Math	Diagnostic	2 - 10	Varies	Observation Paper/pencil	<ul style="list-style-type: none"> • Whole Class or individual • Recommended to have 3-4 days of training (contact ERLC for more info) • One-on-one administration 	<ul style="list-style-type: none"> • Diagnostic based on Big ideas (Key Understandings) in Math learning. • Each resource book contains a diagnostic map, key understandings, diagnostic tasks and sample learning activities. • Provides information on what stage the student is in on the diagnostic map. (not grade leveled, but understanding leveled). 	Free online
Mathematics Online Interview <i>Formally called Early Years and Middle Years Interview</i>	Diagnostic	K - 2 3 - 8	Varies	Observation Interview	<ul style="list-style-type: none"> • One-on-one administration VERBAL • Can incorporate with the EYE 	<ul style="list-style-type: none"> • Not aligned to Alberta Math curriculum- but <u>based on BIG ideas</u> in Math AND Learning Progressions • Developed in Australia • Scripted questions 	Free online
Nelson Leaps and Bounds	Diagnostic Intervention	1 - 8	Varies	Paper/pencil	<ul style="list-style-type: none"> • Whole group or individual 	<ul style="list-style-type: none"> • Aligned to WNCP 2006 • English and French available • Levels students using different pathways based on diagnostic • Student and teacher resources available • Developed by Nelson in collaboration with Dr. Marian Small 	Cost

Nelson Pre-Assessments	Screeners	1 - 6	Varies	Gr. 1 - oral Gr. 2 - 9 Paper/pencil	<ul style="list-style-type: none"> • Whole group or individual 	<ul style="list-style-type: none"> • Aligned to WNCB 2006 assessment for all Strands 	Cost
Numeracy NETS	Screeners Diagnostic	3-8	Varies	Paper/pencil	<ul style="list-style-type: none"> • Whole group or Individual 	<ul style="list-style-type: none"> • Appendices show correlation with WNCB and Math resources such as Math Makes Sense and Math Focus • Uncovers students' misconceptions, enhances instructional response 	Cost
Ontario Numeracy Assessment Package (ONAP)	Diagnostic	Gr 4 - 9	60 minutes (approx)	Paper/pencil	<ul style="list-style-type: none"> • Whole Group • Provides teachers with a flexible entry assessment tool to identify students' prior knowledge. 	<ul style="list-style-type: none"> • Nelson Publishing Developed by Dr. Marian Small • Assessment data organized by math strands. 	Cost
Sask Screeners	Screeners	Gr 2 - 9	Varies	Paper/pencil	<ul style="list-style-type: none"> • Whole group • Information on what students understand in order to inform decisions around instruction, grouping, differentiating, and interventions. • Available in French 	<ul style="list-style-type: none"> • Aligned to WNCB 2006 • Supports vertical planning and combined grades by providing a quick reference of the prerequisite knowledge for topics at each grade level and how that topic is built upon in future grades. • Concept Map (by Grade) 	Free
Nikki Newtons Running Records	Screeners	K - 5	Varies	Oral Interview	<ul style="list-style-type: none"> • Individual • Assesses basic fact automaticity 	<ul style="list-style-type: none"> • Strategies 	Free

Adaptive Practice

Tool	Type	Grades	Approx. Time	Format	Implementation Considerations	Notes	Cost
Dreambox	Adaptive learning and practice	K-8	Variable	Digital	<ul style="list-style-type: none"> Requires computer access Paid subscription 	<ul style="list-style-type: none"> Aligned to WNCP curriculum 2006 	Cost
IXL	Diagnostic	JK - 12 (Calculus)	Variable	Digital	<ul style="list-style-type: none"> Requires computer access Paid subscription 	<ul style="list-style-type: none"> Aligns to Alberta curriculum 	Cost
Mathletics Video	Screening Diagnostic Intervention	K - 12	Variable	Digital	<ul style="list-style-type: none"> Individual or whole group administration Ongoing technical support provided Paid yearly subscription 	<ul style="list-style-type: none"> Aligned to Alberta Math curriculum Some French materials available Includes additional instructional resources developed by Dr. Marian Small 	Cost

Intervention Resources

Tool	Type	Grades	Approx. Time	Format	Implementation Considerations	Notes	Cost
Alberta Education Interventions for Numeracy Assessments	Interventions	K-3	varies	paper/pencil	Small Group and Whole Class	Based on The National Center on Intensive Intervention <ul style="list-style-type: none"> • Systematic and explicit instruction • Concrete-to-Representational-to-abstract • Targeted questioning for the individual, small group, and full class 	free
ARPDC Interventions	Scripted Intervention lessons and videos	K-3	varies	Print and video	Small Group	<ul style="list-style-type: none"> • Lessons & Resources Number to 10 • Lessons & Resources Number to 20 • Lessons & Resources Number to 100 • Videos 	free
Do The Math	Scripted Intervention Consumable Student books Manipulatives	K-6		Print	Small Group and Whole Class	<ul style="list-style-type: none"> • Addition and Subtraction, • Multiplication, • Division • Fractions 	Cost
Equals	Curriculum for appropriate choice for students with cognitive disabilities, autism, and for English as an Additional Language (EAL).	K-12	varies	The program includes a content kit, a manipulative kit, and access to a Members Only Portal.	Not intended for students capable of working on regular curriculum	<ul style="list-style-type: none"> • Age-neutral multi-sensory special education math curriculum that connects functional math to abstract ideas. • Canadian version available 1-800-353-1107 info@bridges-canada.com 	cost
Number Sense Screener™ (NSS™) Set, K-1, Research Edition	Screeners/ Intervention	K-1	15 - 20 min.	Paper/pencil	Individual administration Also available Number Sense Intervention Strategies	<ul style="list-style-type: none"> • Research based tool for screening key numerical competencies in Kindergarten and early Grade One 	Cost

Other Alberta Education-Approved Assessments

Tool	Type	Grades	Approx. Time	Format	Implementation Considerations	Notes	Cost
Canadian Achievement Test 4 (CAT•4)	Diagnostic	K-12	35 - 65 minutes	Paper/pencil Digital	<ul style="list-style-type: none"> • Whole group • Can be administered any time of year 	<ul style="list-style-type: none"> • Mathematics • Computation 	Cost varies depending materials
KeyMath™ 3 Diagnostic Assessment: Canadian Edition (KeyMath™ 3 DA) (English & French)	LEVEL B Clinical Diagnostic	K-12	30-90 mins	Paper/pencil	<ul style="list-style-type: none"> • Individual administration • Level B training required 	<ul style="list-style-type: none"> • Assess in 3 content areas <ul style="list-style-type: none"> - basic concepts - operations - applications • Standardized 	Cost varies according to materials purchased.
Test of Early Mathematics Ability–Third Edition (TEMA-3)	LEVEL B Clinical Diagnostic	3-9 years	40 minutes	Paper/pencil software	<ul style="list-style-type: none"> • Individual administration • Level B training required 	<ul style="list-style-type: none"> • Measures math performance of students with math learning difficulties, including: <ul style="list-style-type: none"> - numeral literacy - calculation skills - mastery of number facts - number-comparison facility - understanding of math concepts - numbering & calculation skills. 	Cost
Wide Range Achievement Test–Fifth Edition (WRAT5™)	LEVEL B Clinical Diagnostic	5–85+ years	15-25 minutes for ages 5 to 7 35-45 for 8 and up	Paper/pencil Q-interactive	<ul style="list-style-type: none"> • Individual administration • Level B training required 	<ul style="list-style-type: none"> • Includes reading, spelling, and math skills, and helps identify possible learning disabilities. • Math Computation: measures an individual's ability to count, identify numbers, solve simple oral math problems, and calculate written math problems with a time limit. 	Cost varies according to materials purchased.

Feifer Assessment of Mathematics	LEVEL B	K-12	Varies 35 minutes for PK; 50 minutes for K–Grade 2; 60 minutes for Grade 3+; 15 minutes for Screening Form	Paper/pencil	<ul style="list-style-type: none"> • Individual administration • Level B training required • Identifies Dyscalculia and recommends support interventions 	<ul style="list-style-type: none"> • Examines the underlying neurodevelopmental processes that support proficient math skills 	Cost
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