EMA@School

Early Math Assessment@School
Brief Description

The EMA@School is a set of early math tasks designed to help teachers identify students who lack foundational number skills. The EMA@School is focused on knowledge of numbers (i.e., linking symbols and quantities, knowledge of counting sequences), number relations (e.g., comparing and ordering number symbols, number lines), and number operations (addition, subtraction, multiplication).

Designed for children from kindergarten to grade 4, the EMA@School is easily administered in approximately 20-25 minutes. Kindergarten tasks are done individually. Most of the grade 1 and all of the grades 2 to 4 tasks are done as a full class. The measures are based on research conducted over the last 15 years, as described in the interpretation guide.

General descriptions of the tasks are provided on the next page; however, some details may differ depending on licensing requirements and modifications. The tasks are sensitive to curriculum expectations, however, in some cases they exceed curriculum requirements. Reliabilities (internal) are good to excellent. Construct validity is based on research and the assessment has also been validated using other standardized numeracy assessments.

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MATH LAB

Table 1. Assessments Included in the EMA@School

Name	Description	K	1	2	3	4
Number Knowledge						
Verbal Counting [1]	Students recite the count sequence. Teachers note highest count and behaviours (e.g., repeats).	√	√			
Dot Counting[1]	Students count sets of dots (up to 12). When they are finished, they are asked, "how many dots?" Teacher looks for one-one-correspondence.	√				
Next Numbers[1]	Students continue sequences of numbers orally.		√			
Number Naming[1]	Students name numbers (e.g., 6, 15, 27 etc.)	√	√			
Number Writing[2]	Students write down numbers as teachers read them aloud (e.g., 12, 67, 150 etc.)		√	√	√	√
Number Relations						
Number Comparison[3]	Students cross out the larger digit of a pair (e.g., 4 7).	√	√	√	√	
Number Order	Students see a sequence of three numbers and check (√) if the numbers are in increasing order.			√	√	
Number Lines[2]	Students mark the location of a number on a line. 0-1, 0-10, 0-100, or 0-1000.	√	√	√	√	√
Number Operations						
Arithmetic Fluency[2]	Students solve addition, subtraction, multiplication/division facts (timed)		√	√	√	√
Equations	Students use conceptual knowledge to solve equations (e.g., 3 + 4 = ☐ + 3).				√	√
Calculation	Addition and subtraction of double-digit numbers (timed)					√
Fractions	Assessment of fraction concepts					√

[1] Tests are administered individually. [2] Item sets may differ based on grade. [3] Timing varies across grade.