GloSS/IKAN Assessment
General Information

GloSS: Global Strategy Stage Assessment &
IKAN: The Individual Knowledge Assessment of Numeracy

The GloSS and IKAN assessment package enables you to identify the number knowledge and strategy stages in which students are demonstrating proficiency across all knowledge and strategy domains. The assessments consist of a series of interview strategy and number questions which can be administered to individual students in a few minutes or less. The students are then assigned an overall Strategy Stage based on their responses to the questions in the interview. The series of questions increase in difficulty and include questions in all knowledge and strategy domains. Students move through these questions until they become too difficult for them to answer correctly. Information regarding a student's specific strategy stage is supported by the information provided through the IKAN regarding the student's comprehension of number and quantity. This information supports the acquisition of efficient strategies for computation, and the efficiency of these strategies can be measured by the GloSS assessment. Hence, these two assessments go hand in hand.

GloSS/IKAN Administration (3 times a year)

Teacher Guidance:

1. Administer the GloSS Assessment

2. If a student scores with Strategy Stages 0-3 on the GloSS assessment, the teacher should then administer the IKAN Part I (Counting Interview). If a student achieves within Strategy Stage 4 or higher on the GloSS assessment, the teacher should then administer the IKAN Part II (Written Assessment).

The Number Framework

At the core of numeracy development is The Number Framework. This framework was established to help teachers, parents, and students to understand the requirements of the number knowledge and number strategies necessary to advance to higher levels of mathematical understanding. This framework was developed in New Zealand as a part of their Numeracy Project through the NZ Ministry of Education.

In the two main sections to the framework, the distinction is made between strategy and knowledge. The Strategy section describes the mental processes students use to estimate answers and solve operational problems with numbers. The Knowledge section describes the key items of knowledge that students need to learn. It is important that students make progress in both sections of the framework. The strategy section of the framework consists of a sequence of global stages. Progress through the stages indicates an expansion in knowledge and in the range of strategies that students have available. The application of number knowledge and mental strategies is often described as 'number sense'. Strongly developed number sense leads to algebraic thinking.

The following table describes the key features of each strategy stage of the Number Framework.

Stage 0: EM Emergent	The student is unable to consistently count a given number of objects because they lack knowledge of counting sequences and/or one-to-one correspondence.
Stage 1: CA One-to-one counting	The student is able to count a set of objects or form sets of objects but cannot solve problems that involve joining and separating sets.
Stage 2: CA Counting from one on materials	The student is able to count a set of objects or form sets of objects to solve simple addition and subtraction problems. The student solves problems by counting all the objects.
Stage 3: CAI Counting from one by imaging	The student is able to visualize sets of objects to solve simple addition and subtraction problems. The student solves problems by counting all the objects.
Stage 4: AC Advanced counting	The student uses counting on or counting back to solve simple addition or subtraction tasks.
Stage 5: EA Early additive part-whole	The student uses a limited range of mental strategies to estimate answers and solve addition or subtraction problems. These strategies involve deriving the answer from known basic facts (for example doubles, fives, making tens).
Stage 6: AA Advanced additive/early multiplicative part-whole	The student can estimate answers and solve addition and subtraction tasks involving whole numbers mentally by choosing appropriately from a broad range of advanced mental strategies (for example place value positioning, rounding and compensating or reversibility). The student uses a combination of known facts and a limited range of mental strategies to derive answers to multiplication and division problems (for example doubling, rounding or reversibility).
Stage 7: AM Advanced multiplicative part-whole	The student is able to choose appropriately from a broad range of mental strategies to estimate answers and solve multiplication and division problems. These strategies involve partitioning one or more of the factors (for example place value partitioning, rounding and compensating, reversibility).
Stage 8: AP Advanced proportional part-whole	The student can estimate answers and solve problems involving the multiplication and division of fractions and decimals using mental strategies. These strategies involve recognizing the effect of number size on the answer and converting decimals to fractions where appropriate. These students have strongly developed number sense and algebraic thinking.