Numeracy Continuum

Aspect 1A: Counting Sequences

Forward Number Word Sequence

Level	Code	Description
Level 0		Cannot Count to 10
Level 1	MAe-4NA	**Counts to 10**
Level 1	MAe-4NA	*Cannot say the number word just after a given number word in the range 1-10*
Level 1	MAe-4NA	*Dropping back does not appear at this level*
Level 2	MAe-4NA	Counts to 10; Says the number word just after a given number word but drops back to 1 when doing so
Level 3	MAe-4NA	Counts to 10; Says the number word just after a given number word in range 1-10 without dropping back
Level 4	MAe-4NA	**Counts to 30**
Level 4	MAe-4NA	Says the number word just after a given number word in the range 1-30 without dropping back
Level 5	MA1-4NA	**Counts to 100**
Level 5	MA1-4NA	Says the number word just after a given number word in range 1-100 without dropping back
Level 6	MA1-4NA MA2-4NA	Counts beyond 100

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Aspect 1B: Counting Sequences			
Backward Number Word Sequence			
Cannot Count backwards from 10-1			Level 0
Counts backwards from 10-1	MAe-4NA		Level 1
Cannot say the number word just before a given number word in the range 1-10			
Dropping back to 1 does not appear at this level			
Counts backwards from 10-1; Says the number word just before a given number word in the range1-10 but drops back to 1 when doing so	MAe-4NA		Level 2
Counts t backwards from 10-1; Says the number word just before a given number word in range 1-10 without dropping back	MAe-4NA		Level 3
Counts backwards from 30-1	MAe-4NA MA1-4NA		Level 4
Says the number word just before a given number word in the range 1-30 without dropping back			
Counts backwards from 100-1	MA1-4NA		Level 5
Says the number word just before a given number word in range 1-100 without dropping back			
Counts backward from any number	MA2-4NA		Level 6

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Aspect 1C: Counting Sequences		MAe-4NA	MAe-4NA	MA1-4NA	MA1-4NA	MA2-4NA
Numeral Identification	May identify some, but not all numerals in the range 1-10	Identifies all numerals in the range 1-10	Identifies all numerals in the range 1-20	Identifies numerals in the range1-100	Identifies numerals in the range 1-1000	Identifies numerals in the range 1-10,000

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Aspect 1D: **Counting Sequences** *Counting by 10s & 100s*														
Level 0	**Emergent**	Has not yet accessed level5 in FNWS/BNWS; not counting to 100												
Level 1	**MA1-4NA**	Counts forwards & backwards by 10s to 100 eg: 10, 20 . . . 100												
		Counts forwards & Backwards by 100s to 1000 eg: 100, 200, . . . 1000												
Level 2	**MA1-4NA**	Counts forwards & backwards by 10s & 5s, off the decade to 100 eg: 2, 12, 22 . . . 92												
Level 3	**MA1-4NA**	Counts forwards & backwards by 10s, off the decade in the range 1-1000 eg: 377, 387, 397, 407 . .												
	MA2-4NA	Counts forwards & backwards by 100s, off the 100, & on or off the decade to 10,000 eg: 24, 124, 224, . . . 924												

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Aspect 2: Early Arithmetical Strategies *Counting as a Problem Solving Process*			
Level 0	Emergent	Cannot Count visible items	
		Does not know number words or cannot co-ordinate the number words to count items	
Level 1	Perceptual MAe-5NA	Counts visible items to find the total count	
		Builds & subtracts numbers by using materials or fingers to represent each number	
		Objects or fingers remain constantly in view while counting	
Level 2	Figurative MA1-5NA	Visualises concealed items & determines total by counting from 1	
		May use fingers to represent the concealed items when total of two screened parts is greater than 10	
Level 3	Counting On/Back MA1-5NA	Counts on or back to solve problems	
		A number takes the place of a completed count	
		Counts on rather than counting from 1 to solve addition or missing addends tasks	
		Uses a count-down-from strategy or count-down-to-strategy to solve subtraction tasks	
Level 4	Facile MA1-5NA MA2-5NA	Uses known facts, number structure & other non-count-by-1 strategies to solve problems (1 or 2 digits)	

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Aspect 3: **Pattern & Number** **Structure**	*Identification of pattern associated with the structure of numbers*	
Level 0	Emergent	Cannot effortlessly & immediately identify small quantities **(subitise)**
Level 1	Instant MAe-4NA	Subitises small numbers
Level 2	Repeated MAe-8NA	Recognise, describes & continues a repeated pattern
Level 3	Multiple MAe-8NA	Creates a pattern of repeated units of a specified size
Level 4	Part/Whole to 10 MA1-5NA MA1-8NA	Uses part-whole knowledge to 10. Knows number combinations to 10 & how many more needed to make 10
Level 5	Part/Whole to 20 MA1-5NA MA1-8NA	Knows or easily derives number combinations to 20 eg: using known facts, near doubles. Partitions numbers in standard & non-standard form
Level 6	Number Properties MA2-8NA MA3-8NA, 6NA	Understands the structural properties of numbers including how to regroup when operating with numbers

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Aspect 4 (1): Place Value

Students should be at least at Counting On & Back stage to be placed on the Place Value Framework

Level	Stage	Descriptor										
Level 0	**Ten as a Count** MA1-5NA	Counts on but uses single units of 1 or 10 in counting strategies										
		Knows the sequence of multiples of 10 (*10, 20, 30 etc*) as a sequenced count										
		Treats 10 as something constructed of ten 1s, but one 10 & ten 1s do not exist for the student at the same time										
Level 1	**Ten as a Unit** MA1-5NA	Counts by 10s & 1s from the middle of the decade to find the total or difference of two 2-digit numbers where one of them numbers is represented by materials										
		Treats 10 as a single unit while still recognising that it contains 10 *ones* (abstract composite unit)										
Level 2 **A (JUMP)** **B (SPLIT)**	MA1-5NA MA2-5NA	**JUMP:** treats 10 as a unit that can be repeatedly constructed in place of ten individual counts; 10s & 1s are flexibly regrouped										
		JUMP: Counts forwards or backwards firstly by 10s & then by 1s										
		SPLIT: Treats 10 as an abstract composite unit										
		SPLIT: Solves addition & subtraction problems mentally separating 10s from 1s then adding or subtracting each separately before combining										
		SPLIT: Uses non-standard decomposition of 2-digit numbers eg: 76 = 60+16										

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Aspect 4 (2): Place Value

Students should be at least at Counting On & Back stage to be placed on the Place Value Framework

Level	Strand	Type	Descriptor										
Level 3	Hundreds, Tens & Ones MA2-5NA	A (JUMP)	**JUMP:** Uses 100s, 10s & 1s in standard decompositions eg: 326 as 3 groups of 100, 2 groups of 10 & six 1s										
			JUMP: Increments by 100s & 10s to add mentally										
			JUMP: Determines the number of 10s in 621 without counting by 10										
		B (SPLIT)	**SPLIT:** Adds & subtracts mentally combinations of numbers to 1000										
			SPLIT: Uses the positional value of numbers flexibly in regrouping without a need to rely on incrementing by 10s or 100s										
			SPLIT: Uses a part-whole knowledge of numbers to 1000										
Level 4	Decimal Place Value MA2-7NA		Uses tenths & hundredths to represent fractional parts with an understanding of the positional value of decimals eg: 0.8 > 0.75 because of the positional value of the digits										
			Interchanges tenths & hundredths eg: 0.75 may be thought of 7 tenths & 5 hundredths										
Level 5	System Place Value MA3-4NA, 7NA		Recognises that the place value system can be extended indefinitely in 2 directions – to left & right of decimal point										
			Recognises the relationship between values of adjacent places (units) in a numeral										

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Aspect 5: Multiplication & Division

Using equal groups in multiplication as well as two different types of division

Level		Description									
Level 1	Forming Equal Groups	Uses perceptual counting & sharing to form groups of specified size; does not see groups as composite units & counts each individual item									
Level 2 MAe-6NA	Perceptual Multiples	Uses groups or multiples in perceptual counting & sharing eg: rhythmic or skip counting									
Level 3	Figurative Units MA1-6NA	Uses equal grouping without individual items visible									
		Relies on perceptual markers to represent each group; needs to represent each group before determining the total									
Level 4	Repeated Abstract Units MA1-6NA	Uses composite units in repeated addition & subtraction using the unit a specified number of times									
		May use skip counting or a double count; may use fingers to keep track of the number or groups but as counting occurs									
Level 5	Mult & Div as Operations MA2-6NA, MA3-6NA	Co-ordinates two composite units as an operation eg: 6 x 3 is 18; 18 ÷ 6 =3									
		Uses multiplication & division as inverse operations flexibly in problem solving tasks									

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Aspect 6: **Fraction Units**		*Developing a quantitative sense of fractions relies on forming partitions, relating the part to the whole & recognising the need for equal wholes*
Level 0	Emergent Partitioning	Attempts to halve by splitting without attention to equality of the parts
Level 1	Halving MAe-7NA, MA1-7NA	Forms halves & quarters by repeated halving
Level 1	Halving MAe-7NA, MA1-7NA	Can use distributive dealing to share
Level 2	Equal Partitions MA2-7NA	Verifies continuous & discrete linear arrangements have been partitioned into thirds or fifths by iterating one part to form the whole or checking the equality & number of parts forming the whole
Level 3	Reforms the Whole MA3-7NA	When iterating a fraction part such as one-third beyond the whole, re-forms the whole
Level 4	Multiplicative Partitioning MA4-5NA	Co-ordinates composition of portioning (ie: can find one-third of one-half to create one-sixth)
Level 4	Multiplicative Partitioning MA4-5NA	Creates equivalent fractions using equivalent equal wholes; co-ordinates units at 3 levels to move between equivalent fraction forms
Level 5	Fractions as Numbers MA4-5NA	Identifies the need to have equal wholes to compare fractional parts; uses fractions as numbers ie: 1/3 > ¼, including improper fractions

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Aspect 7 (1): Measurement

Knowledge of the structure of units in length, area and volume

Level		Descriptor													
Level 0	Emergent Structure	Attempts direct comparison without attending to alignment; may attempt to measure indirectly without attending to gaps or overlaps													
Level 1	Direct Alignment MAe-9,10,11MG	Directly compares the size of two objects (alignment)													
Level 2	Transitive Comparison Mae-9MG, MA1-10MG, Mae-11MG, MA1-11MG	Directly compares the size of 3 or more objects (transitivity)													
		Uses indirect comparison by copying the size of one of the objects													
Level 3	Multiple Units MA1-9MG, MA1-10MG, MA1-11MG	Uses multiple units of the same size to measure an object (without gaps and overlap)													
		Chooses & uses a selection of the same size & type of units to measure an object (without gaps & overlap)													
Level 4	Indirect Comparison MA1-9MG MA1-10MG MA1-11MG	States the qualitative relationship between the size & number of units (ie: with bigger units you need fewer of them)													
		Chooses & uses a selection of size & type of units to measure by indirect comparison													

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Aspect 7 (2): Measurement *Knowledge of the structure of units in length, area and volume*													

		Descriptor											
Level 5 Iterates the Unit MA1-9MG, MA2-9MG	Uses a single unit repeatedly (iterating) to measure or construct length													
	Makes a multi-unit ruler by iterating a single unit & quantifying accumulated distance													
	Identifies the quantitative relationship between length & number of units (ie: if you halve the size of the units you will have twice as many units in the measure)													
Level 6 Composite Area MA2-10MG	Creates the row-column structure of the iterated composite unit													
	Uses the row-column structure to find the number of units to measure area													
Level 7 Repeated Layers MA2-11MG, MA3-12MG	Creates the row-column-layer structure of the iterated layers when measuring volume													
	Uses the row-column-layer structure to find the number of units to measure volume													