Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

Task	Possible response & comments	Level
Aspect 4 **Place Value** **Task 1** *I had 15 pencils and I was given another 7.* *How many do I have now?* **Task 2** *What is the difference between 20 and 39?* If student does not understand the word 'difference' ask, *How many numbers are between 20 and 39* An example could be given as a prompt 'the difference between 5 and 7 is 2'	**Student:** • Counts from one using fingers to keep track • Counts on from 15 using fingers to keep track • Counts on from 15 to solve the task • Uses a known fact (15 + 5 = 20 + 2 = 22) **OTHER RESPONSES** • Does not associate difference with subtraction, may say '39 is larger than 20' or Students need exposure to the use of the word difference and its relationship to subtraction. Clarification may be needed between the meaning of the word 'different' and 'difference'.	**Place Value** Not at Place Value Level 0 - Ten as a count Level 0 - Ten as a count Level 1 - Ten as a unit **Need more information** No level need more information Level 0 – Ten as a count Level 1 – Ten as a unit Level 2 - Tens and ones
	Note: this task also links to Aspect 2: Early Arithmetic Strategies	
Aspect 1 **Numeral identification** **Tasks 3 - 10** Show student each numeral card and ask them to say what number it is 2462 1001 15 257 1010 950 199 10 000 9070	**Student:** • Knows all numbers 1 – 100 (SENA 1 & 2) • Knows all numbers 1 – 1000 • Knows numbers greater than 1000	**Numeral Id** Level 3 - (0 – 100) Level 4 - (0 – 1000) Level 5 - (> 1000)
Aspect 1 **Counting by 10s and 100s** **Tasks 11 – 13** *Start from 62 and count forwards by 5s. I'll tell you when to stop.* 62, 67, 72, 77, ……..97,102 stop **Display this card** **9990** *Start from 9990 and count backwards by 100s. I'll tell you when to stop.* 9990, 9890, 9790, ……9590 stop **Display this card** **2085** *Start from 2085 and count forwards by 10s. I'll tell you when to stop.* 2085, 2095, 2105, ……..2125 stop	**Student:** (Task 11) • Counts forwards by 5s off the decade to 97 • Counts forwards by 5s off the decade to 102 (Task 12) • Counts backwards by 100s from 9990 (Task 13) • Counts on by 10s on or off the decade to 2085 **OTHER RESPONSES**	**Counting by 10s and 100s** Level 2 Level 2 Level 3 Level 3

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

Task	Possible response & comments	Level
Aspect 3 **Pattern and number structure** **Number properties** **Task 14** *I can make 24 by multiplying 6 and 4.* *What are two other numbers that I can multiply to equal 24?* *Can you tell me another two?*	**Student:** • Unable to provide a correct answer • Answers **one** other possible combination (8 x 3, 12 x 2, 24 x 1) • Answers more than one other combination **OTHER RESPONSES**	**Pattern and number structure** Not at Level 6 Level 6 - Number properties Level 6 - Number properties
	Note: this task also links to Aspect 5: Multiplication and division.	
Teacher note: To complete the following *Place Value* tasks, students need to at least be at Level 3 - *Counting-on-and-back* in Aspect 2 – Early Arithmetic Strategies. If student is not at this level, go to Task 20 - Fractions.		
Aspect 4 **Place Value** **Task 15** Display this card **39 + 45** *What is the answer to this?* *How did you work that out?* **Note:** If student says 'I added the 3 and the 4' then ask student: *What does the 3 represent?* (Does the student understand that the '*3*' represents '*30*'?)	**Student:** • Counts from one • Counts on from 39 by ones using fingers to keep track • Counts on from 45 by ones using fingers to keep track • Mentally duplicates written algorithm • Adds tens then units (39, 49, 59, 69, 79, 80, 81, 82, 83, 84) • Uses split strategy: 30 and 40 is 70; 9 and 5 is 14; 70 + 14 = 84 • Uses bridging strategy: 39 + 1 = 40 plus (45-1) 44 = 84 • Uses compensation strategy: 40 + 45 = 85 - 1 Students need to look use a range of flexible strategies for addition for example seeing the 39 as 40 then taking away the one at the end, knowing the answer should be close to 80 as the numbers are both close to 40. Students need to be able to solve tasks like this mentally before being introduced to any form of written algorithm.	**Place Value** Level 0 - Ten as a count Level 0 - Ten as a count Level 0 - Ten as a count **Need more information** Level 2 - Tens and ones Level 2 - Tens and ones Level 2 - Tens and ones Level 2 - Tens and ones Level 2 - Tens and ones (This provides teacher with extra information about the student's understanding)

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

Task	Possible response & comments	Level
Aspect 4 **Place Value** Task 16 Display this card **150 + 160** *What is the answer to this?* *How did you work that out?* **Note:** If student says 'I added the 1 and the 1' then ask student: *What does the 1 represent?* (Does the student understand that the '*1*' represents '*100*'?)	**Student:** • Counts on from 150 by tens to 310 • Mentally duplicates written algorithm • Adds hundreds then the tens (150, 250, 270, 280, 290, 300, 310) • Uses split strategy: 100 plus 100 is 200; 50 and 60 is 110; 200 + 110 = 310) • Adds 15 and 16 = 31 and then adds a zero = 310 • Doubles 150 to make 300 and then adds the 10 = 310 • Other mental strategy Students may use a variety of strategies to solve this task. One of which may be using non-standard decomposition of 160 as 150 + 10 to aid in the addition. Students need to be able to solve tasks like this mentally before being introduced to any form of written algorithm.	**Place Value** Level 2 - Tens and ones **Need more information** Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones (This provides teacher with extra information about the student's understanding)
Aspect 4 **Place Value** **Task 17** Display this card **120 – 37** *What is 120 minus 37?* *How did you work it out?*	**Student:** • Attempts to count backwards by ones • Counts on from 37 by tens and ones using fingers as markers • Counts down from 120 by tens and ones using fingers as markers • Mentally duplicates written algorithm • Starts at 37 and counts on using tens and units (37, 47, 57, 67, 77, 87, 97, 107, 117, 118, Students may use a variety of strategies to solve this task. When completing subtraction tasks, it is not encouraged to use a split strategy as students often get confused when it comes to subtracting the 'ones'. Students need to be able to solve tasks like this mentally before being introduced to any form of written algorithm.	**Place Value** Level 0 - Ten as a count Level 1 - Ten as a unit Level 1 - Ten as a unit **Need more information** Level 2 - Tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones Level 3 - Hundreds, tens and ones

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

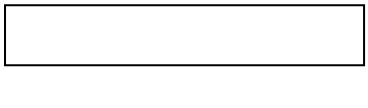
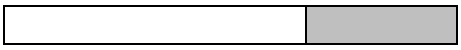
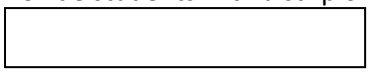
Task	Possible response & comments	Level
Aspect 4 **Place Value (decimals)** **Task 18** Display these cards. **Read each decimal to the student**. **0.9** **0.85** *Which decimal is larger?* *How do you know?*	**Student:** • Incorrectly answer 0.85 is larger than 0.9 o *'because 85 is larger than 9'* • Correctly identifies 0.9 is larger than 0.85 o *'because 90 is larger than 85'* - Student compares the decimal as whole numbers o *'because 0.9 is 9 tenths and 0.85 is 8 tenths and 5 hundredths or 85 hundredths'* **OTHER RESPONSES**	**Place Value** Not at Level 4 Level 4 - Decimal place value Level 4 - Decimal place value
Aspect 4 **Place Value (decimals)** **Task 19** Display this card **0.65 x 10** *What is the answer to this?* *How did you work it out?* Provide students with paper to assist in solving this task.	**Student:** • Cannot give an answer • Says 0.650 • Correctly answers 6.5 • Says "I moved the decimal point" • Says "I am making the number ten times larger" • Explains that in 0.65 the '6' is in the tenths place and 65 tenths becomes 6.5 Students may have developed the misconception that 'when multiplying by 10, just add a zero.' Students who apply this to decimals do not have conceptual understanding of place value and the relationship between adjacent numerals (being ten times larger or ten times smaller).	Not at Level 4 Not at Level 4 Level 4 - Decimal place value **Need more information** Level 5 - System PV Level 5 - System PV Level 5 - System PV Level 5 - System PV

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

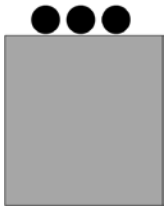
Task	Possible response & comments	Level
Aspect 6 **Fraction units** **Task 20** Provide student with a strip of paper   *Can you fold this paper into quarters? Can you show me how much I would get if you gave me one quarter?* (ensure students open it back out again) May need to prompt student to show you which part is one quarter Extension question: If I fold the paper in half again, what fraction would it make? (eighths)	**Student:** • Attempts to fold the paper in quarters but does not pay attention to aligning the edges • Correctly folds strip into quarters by first halving and then halving again • Correctly identifies one quarter • Traces around one quarter of the strip Students need exposure to hands-on tasks at all stages of learning in regards to fractions. Using a continuous linear model like a strip of paper allows students to only focus on folds of one direction (vertical). Linear models should be explored before area models.	**Fraction units** Level 0 – Emergent partitioning Level - 1 Halving Level - 1 Halving Level - 1 Halving
Aspect 6 **Fraction units** **Task 21** Provide student with a strip that looks like this (one-third shaded)  *What fraction of the whole strip of paper is shaded?* *How did you/ can you work it out?* (Students can fold the strip)	**Student:** • Identifies the shaded part as one half because there are 2 parts, or as one quarter • Correctly identifies the shaded part as one-third • Student folds the strip into equal thirds using the shaded part as a guide to iterate the unit **OTHER RESPONSES**	**Fraction units** Not at Level 2 Level 2 - Equal partitions Level 2 - Equal partitions
Aspect 6 **Fraction units** **Task 22** Provide students with a strip of paper  And another smaller strip (one-fifth of the original strip)  *What fraction of the longer strip is this?*	**Student:** • Student places the smaller strip on the larger strip but is unable to verify the total parts • Student correctly iterates the smaller fifth along the strip to show there are five equal parts and identifies the smaller strip as one fifth of the longer strip **OTHER RESPONSES**	**Fraction units** Level 2 - Equal partitions Level 2 - Equal partitions

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

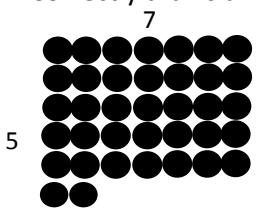
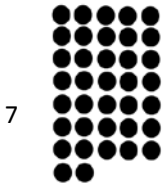
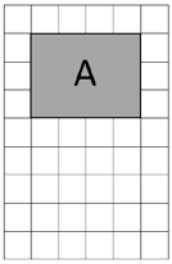
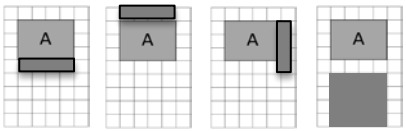
Task	Possible response & comments	Level
Aspect 5 **Multiplication and division** **Task 23** Display this image to the student  *The dots are in equal rows. Some dots are hidden. There are 12 dots in the array altogether.* *How many rows are there? (Including the ones that are hidden)* *How do you know?*	**Student:** • Counts only the visible dots, says 1 row • Counts all the dots, including hidden dots, by ones and then identifies 4 rows • Starts with three and counts in multiples of 3 • Skip counts by three to 12 and answers '4 Students need to be able to visualise arrays and visualise a row as a countable unit, moving away from counting each item by ones. Is the student able to skip count, or use known facts for 12?	**Multiplication and division** Level 1 - Forming equal groups Level 3 - Figurative units Level 4 - Repeated abstract units Level 4 - Repeated abstract units Level 5 - Multiplication and division as operations
Aspect 5 **Multiplication and division** **Task 24** Display this card Point to the answer box when asking: *Five times two is the same as what times five?* Ask: How did you work that out? **Task 25** Display this card *What is the answer to this?* **Note:** Teacher can ask: *How did you work it out?*	**Student:** • Says '10' • Correctly answers '**2**' x 5 **Note:** Teacher can ask: *How do you know?* **OTHER RESPONSES** • Says 48 – 6 = 42 • Says 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 (may use fingers as markers) so the answer is 8 Students should be able to use multiplication as the inverse operation to division to solve this task. Do students need to 'go back' to 1 six, 2 sixes etc to solve the task or are they able to use closer known facts such as 'I know 6 sixes are 36 so 6 more is 48'	**Multiplication and division** Not at Level 4 Level 5 - Multiplication and division operations Not at Level 5 Level 4 - Repeated abstract units Level 4 - Repeated abstract units Level 4 - Repeated abstract units Level 5 - Multiplication and division operations Level 5 - Multiplication and division operations
<u>Teacher note</u>: If student cannot complete Tasks 24 and 25, go to Task 27 - Aspect 7		

Schedule for Early Number Assessment (SENA 3) Recording Sheet

Student Name: _____ Date of Interview:

Class: _____ 1st _____

Age: _____D.O.B: _____ 2nd _____

Task	Possible response & comments	Level
Aspect 5 **Multiplication and division** **Task 26** *If I divided 37 by five, would it divide equally or would I have a remainder?* *How did you work it out?* *How many are left over?* Provide student with paper and a pencil. *Draw an array to show your answer.* Note: Does the student know that the remainder is the start of a new row?	**Student:** • No answer Students need repeated exposure to arrays when solving multiplication and division tasks. For students to move beyond counting by ones, they need a physical scaffold to assist in making a conceptual visual of 'how large' the number is. Arrays also assist students in seeing the structure of multiples particularly in reference to remainders as part of the 'next row'. • Correctly draws an array  This shows 37 ÷ 5  This shows 37 ÷ 7 **OTHER RESPONSES**	**Multiplication and division** Level 4 - Repeated abstract units Level 4 - Repeated abstract units Level 5 - Multiplication and division operation Level 4 - Repeated abstract units Level 4 - Repeated abstract units Level 5 - Multiplication and division operation
Aspect 7 **Unit structure of length, area and volume** **Task 27** Provide students with this image. *What is the area of rectangle A?*  *How can you check your answer?* *(provide student with a pen)* *Now, make this shape have an area of 16 squares.*	**Student:** • Student finds the **perimeter** of the rectangle, not the area • Correctly answers 12 units by counting the hidden squares o May count by ones o Uses outer grid to identify 3 rows of 4  Do students see the relationship between multiplication and area? Are students able to draw the grid lines to show rows and column structure or do they draw the square individually? (this indicates they may be counting by ones) Are they able to see a row of four as a countable unit to add to the existing shape?	**Unit structure of length, area and volume** Level 5 - Iterates the unit (length) Level 6 - Composite area Level 5 Iterates the unit Level 6 - Composite area Level 6 - Composite area
	Note: this task also links to Aspect 5: Multiplication and division.	