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| Chapter 5 - Number Word Sequences from 1-20 | Numerals to 10 | Counting Visible Items | Spatial Patterns | Finger Patterns | Temporal Patterns and Temporal Sequences |
| Purpose - To develop knowledge of FNWS in the range 1-20 and BNWS in the range 1-10 | Purpose - To develop knowledge of numerals and numeral sequences in the range 1-10 | Purpose - To develop perceptual counting strategies | Purpose – To develop the initial facility to ascribe number to spatial patterns and random arrays | Purpose - To develop initial facility with making finger patterns | Purpose - To develop facility with copying and counting temporal patterns and temporal sequences. |
| ***5.1.1 Copying and Saying short FNWS’s:*** *I’m going to count from x to y and I want you to say it after me. Ready?*  *This time say it by yourself* | **5.2.1 Numeral Sequences forwards:** Place out a Numeral sequence. *Here are some numbers. Watch me as I count them.* Point to each numeral in turn, while counting  *Now say the numbers with me.*  *Now you do it yourself.*  *Numerals 0 - 10* | **5.3.1 Counting items in one collection:** Place out x counters (all the same colour) *How many counters are there?*  Double Sided Counters | **5.4.1 Ascribing numerosity to patterns and random arrays:** Display domino card (in order > randomly). *How many dots do you see?*  Flash domino cards (in order  > randomly). *Tell me how many dots you see. Ready…*  *Domino Patterns 1 to 6,* | **5.5.1 Sequential patterns for 1 to 5, fingers seen:** *Watch me as I use my fingers to make a number.* Raise a finger. *One*  Raise two fingers sequentially. *One, two. .. You do that with me. Ready …*  *This time do one, two three with me…* | **5.6.1 Copying and counting temporal sequences of movements:** *Watch me as I move my hand.* Make x deliberate chopping motions. *One, two, three …*  *Do that with me. Ready?*  *This time you count the number of chops I make. Ready . . .*  *This time I say a number and you make that number of chops. Ready…* |
| **5.1.2 Copying and Saying short BNWS’s:** *I’m going to count backwards from x and I want you to say it after me. Ready? ….*  *This time say it yourself* | **5.2.2 Numeral Sequences Forwards & Backwards:** Place out a numeral sequence. *Here are some numbers. Watch me as I count them forwards and backwards.* Point to each numeral in turn, while counting forwards and then backwards. Now say the numbers with me. *Now you do it yourself.*  *Numerals 0 – 10* | **5.3.2 Establishing a collection of given numerosity:** Place out around 30 counters (all the same colour) *Give me x from the group*  Double Sided Counters | Repeat above sequence using random array cards  *Random arrays 1 to 4* | **5.5.2 Sequential patterns for 1 to 5, fingers unseen (bunny ears):** This time don’t look at your fingers when you make the number on your fingers. DO three with me. Ready . . .  After the child responds: *Look at your fingers and see of you are right*  Repeat on the other hand This time use your other hand | **5.6.2 Copying and counting rhythmic patterns:**  *Listen to my pattern and see if you can copy it.* Clap a 2 pattern. *Now try this one.* Clap a 2-2 pattern. Similarly try the following patterns 1-2, 2-1, 1-3, 3-1, 3-3, 2-3, 3-2  *Try to count how many claps in my pattern* |
| **5.1.3 Saying alternate numbers forwards and backwards:** *Let’s take turns to say the numbers. I will say one and you say two and we will keep going like that. Ready?* …  *This time you start.*  *Let’s try it backwards* | **5.2.3 Sequencing Numerals:**  Place out a sequence of cards (e.g.1-3) randomly  *Put these cards in order from one. ..Now say the numbers as you point to them.*  *Numerals 0 - 10* | **5.3.3 Counting items in a row, forwards and backwards:** Place out a row of x dots. *Watch me count out the dots forwards and backwards,* Point to each dot in turn  *Now you count the dots forwards and backwards.*  *Rows of Dots* | Repeat above sequence using pairs patterns cards  *Pairs Patterns 1 - 6* | **5.5.3 Simultaneous patterns for 1 to 5, finger seen:** *Watch me use my fingers to make a number. This time I am going to raise all my fingers at once* (model) *You do the number I say. Remember raise all your finger at once.*  After the children responds raise your finger. *Compare your fingers with mine*. | **5.6.3 Copying and counting monotonic sequences and sounds:**  *Try to count how many times I clap.* Make slow monotonic sequence of four claps. *How many times?*  Similarly for sequences within the range 1 – 10  *Now it is your turn. Make x claps* |
| **5.1.4 Saying the next number word forwards:** *I’m going to count and I want you to say the next number after I stop. Ready?* | **5.2.4 Numeral Recognition:** Place out a range of cards, randomly arranged. Point to x, point to y *Numerals 0 - 10* | **5.3.4 Counting items of two collections:** Place out x red counters. Place out y blue counters. *Here are x red counters and y blue counters. How many altogether?*  *Rows of Dots: Red – 6, 10, 15 and 20*  *Green – 1, 2, 3, 4, 5* | **5.4.2 Making Spatio-Motor Patterns:** Display domino card. *Make a pattern in the air to show the number of dots.*  *This time see if you can do it without looking at the card.*  *Repeat with Pairs and Random Arrays*  *Domino, Pairs and Random Array Cards* | **5.5.4 Simultaneous patterns for 1 to 5, fingers unseen (bunny ears):** *Put your hand on your head like me. Watch me use my fingers to make a number.* (model)  *You do the number I say. Remember raise all your finger at once.*  After the chil*dren responds: Look at your fingers and see of you are right* | **5.6.4 Copying and counting arhythmical sequences and sounds:**  *Try to count how many times I clap.* Make a fast arhythmical sequence of three claps. *How many times?*  Similarly for sequences within the range 1 – 10  *Now it is your turn. Make x claps* |
| **5.1.5 Saying the next number word backwards:** *I’m going to count and I want you to say the next number backwards. Ready?* | **5.2.5 Numeral Identification:**  Place out a range of cards, randomly arranged.  Point to x*, what is this?*  Point to y, *what is this?*  *Numerals 0 - 10* | **5.3.5 Counting items of two rows:**  Place out a row of x red dots. Beside that place out a row of y blue dots. *Here are x red counters and y blue counters. How many dots altogether?* | Repeat above activity but this time, flash the domino, pairs and random array cards.  *Domino, Pairs and Random Array Cards* | 5.5.5 Double patterns 1 to 5 *Put your hands out in front. Make two on your right hand. Make two on your left hand. How many altogether? Say after me – 2 add 2 makes 4.* Repeat for other doubles  *Now put your hands on your head. Make two on your right hand. Make two on your left hand. How many altogether? Take your hands down and have a look. Say after me – 2 add 2 makes 4.* |
| **5.1.6 Saying the number word after:** *I’m going to say a number and I want you to say the number just after the one I say. Ready? . . .* | **5.2.6 Numeral Tracks:** Place out the numeral track, with numerals uncovered. *Watch me as I count forwards and backwards.* Point to each numeral in turn while counting forwards and then backwards.  *Now you count forwards and then backwards and point to each number in turn.*  Close lids on the Numeral Track and repeat previous activity. Uncovering the lids AFTER saying each number. As Below | **5.4.3 Making auditory patterns to match spatial patterns:** Display domino card. Clap your hands to show the number of dots on the card.  Repeat with Pairs and Random Arrays  *Domino, Pairs and Random Array Cards* | **5.5.6 Use finger patterns to keep track of temporal sequences of movement:** *Watch me as I move my hand.* Move hand in a chopping motion, three times. *One, two, three.*  *Use your fingers to keep track of how many times I move my hand.* Move hand x times. *How many was that?*  Repeat with other hand |
| **5.1.7Saying the number word before:** *I’m going to say a number and I want you to say the number before the one I say. Ready? . . .* | Place out the numeral track with numerals covered. Uncover a numeral. *What number is this?* Leave that numeral uncovered. Point to another lid. *So what numeral is under here? . . . Would you like to check?*  *Numerals 1 – 10*  *Numeral Tracks* | Repeat above activity but this time, flash the domino, pairs and random array cards.  *Domino, Pairs and Random Array Cards* | **5.5.7 Use finger patterns to keep track of temporal sequences of sounds:** *Watch me as I clap.* Clap three times. *One, two, three.*  *Use your fingers to keep track of how many times I clap.* Clap x times. *How many was that?* Repeat with other hand  *Now look away and keep track of how many times I clap my hands.* |

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| Chapter 6 - Number Word Sequences from 1-30 | Numerals to 20 | Figurative Counting | Spatial Patterns | Finger Patterns | Equal Groups and Sharing |
| Purpose - To develop knowledge of number word sequences in the range 1 to 30 | Purpose - To develop knowledge of numerals and numeral sequences in the range 1-20 | Purpose - To develop figurative counting strategies | Purpose – To further develop the facility to ascribe number to spatial patterns | Purpose - To further develop facility with finger patterns for numbers in the range to 10 | Purpose - To develop initial ideas of equal groups and sharing |
| **6.1.1 Saying short FNWS’s:** *Start counting from x and I’ll tell you when to stop* | **6.2.1 Numeral Sequences Forwards and Backwards:** Place out a numeral sequence from x to y. *Watch me as I count forwards and backwards*. Point to each numeral in turn whilst counting.  *Numerals 0 - 20* | **6.3.1 Counting Items in two collections, with first collection screened:** place out x red counters. *Here are x red counters. I’m going to cover these counters.* Place a screen over the counters. Place out y green counters. *Here are y green counters. X and y, how many counters are there altogether? … Would you like to check?*  *Double Sided Counters* | **6.4.1 Partitioning visual patterns to 6:** Display domino pattern. *How many dots do you see? Can you point to x dots in the pattern. Can you point to another x dots? How many lots of x can you see? What else can you see? Repeat for Pairs Patterns.*  *Domino and Pairs Patterns 3 - 6* | **6.5.1 Five plus patterns for 6 to 10:** *Raise 5 fingers on one hand. Raise y fingers on the other. How many fingers raised altogether?*  *Progress to bunny ears (hands on head) Raise 5 fingers on one hand. Raise y fingers on the other. How many fingers raised altogether? Check by looking at your fingers* | **6.6.1 Describing equal groups:** Place out four 2-counter cards. *Here are some counters. What can you tell me about them? How many counters are there on each card? How many cards are there?* Place out three 2-counter cards. *Here are some counters. What can you tell me about them? How many counters are there on each card? How many cards are there?* Etc.*… 2.3.4.5 Dots Cards* |
| **6.1.2 Saying short BNWS’s:** *Start from x and count down to y* | **6.2.2 Sequencing numerals:** Place out cards x to y randomly arranged. *Put these cards in order…Now say the numbers as you point to them.*  *Numerals 0 - 20* | **6.3.2 Counting Items in two collections, with second collection screened:** place out x red counters. *Here are x red counters.* Place out y green counters. *Here are y green counters. I’m going to cover these y green counters.* Place a screen over the green counters.  *X and y, how many counters are there altogether? … Would you like to check? As above plus screens* | **6.4.2 Partitioning flashed patterns to 6:** Flash a domino pattern. How many dots did you see? Can you describe it another way?  *Domino and Pairs Patterns 3 - 6* | **6.5.2 Partitioning numbers 3 to 10:***Put your hands on your head. Make x on your fingers. Can you make it another way? Check to see if you are correct?*  *Make y on your fingers. Check. Find different ways to make y. How many ways?* | **6.6.2 Organising equal groups:**  Place out a collection of 10 counters, with two of each of five colours. *Here are some counters. What can you see? Can you make a pattern with the counters? Tell me about the pattern.*  Similarly 6 lots of 3, 4 lots of 3, 3 lots of 4, and so on  *Assorted Coloured Counters* |
| **6.1.3 Saying alternate number words forwards and backwards:** *Let’s take turn to say the numbers.* | **6.2.3 Numeral Recognition:** Place out a range of cards, randomly arranged. Point to x, point to y *Numerals 0 - 20* | **6.3.3 Counting Items in two screened collections:** *Here are x red counters. I’m going to cover these counters*… Place out y green counters. *Here are y green counters. I’m going to cover these y green counters… X and y, how many counters are there altogether? … Would you like to check? As above with small screens* | **6.4.3 Partitioning visual patterns to 10:** Display a pairs pattern *How many dots do you see? Point to x dots. Point to another x dots. How many lots of x can you see? What else do you see? Try to find other numbers in the pattern. Make a pattern in the air to match the dots.*  *Pairs Patterns 7 - 10* | **6.5.3 Doubles plus one:** *Put your hands on your head. Show me x and x on your fingers. What does x and x make? Put up one more finger on one hand. What do you have now? What does x and (x+1) make?* | **6.6.3 Making equal groups:** Place out 8 plastic (horses). *Here are some (horses). (Farmer Joe) wants the horses put in twos. Can you put the horses in twos?*  *9 into 3s, 12 into 4s, 10 into 5s, 12 into 3s and so on* |
| **6.1.4 Saying the next one, two, three number words forwards:** *I am going to count from a number, and I want you to say the next number after I stop.*  *I am going to count from a number, and I want you to say the next x numbers after I stop.* | **6.2.4 Numeral Identification:**  Place out a range of cards, randomly arranged.  Point to x*, what is this?*  Point to y, *what is this?*  *Numerals 0 - 20* | **6.3.4 Counting items in a row with some items screened:** Place out a row of 20 dots. *Count the dots from one forwards and backwards.* Place a marker over the xth dot. *This number is x.* Place a small screen over the next (two) dots. Point to screen *There are (two) under here. Point to next unscreened dot. What number is this one?*  *20 Dots in a row*  *Small screen to cover 1 – 4 dots* | **6.4.4 Partitioning flashed patterns to 10:** Flash a pairs pattern. *How many dots did you see? Can you describe it another way?*  *Pairs Patterns 7 - 10* | **6.5.4 Partitioning 10 fingers:** *Put your hands out in front. Show me 10 on your fingers. Put down x fingers. How many does that leave? What does (10-x) and x make? Show me that on your fingers.* | **6.6.4 Describing equal shares:** Place out 2 (dolls), each with 4 (flowers). *Here are some (dolls) with(flowers). How many (dolls) do you see? What do you notice about the number of (flowers) each (doll) has?*  *Similarly 6 lots of 3, 5 lots of 2, 7 lots of 3, and so on…* |
| **6.1.5 Saying the next one, two, three number words backwards:** *I am going to count backwards, and I want you to say the next number after I stop.*  *I am going to count from a number, and I want you to say the next x numbers after I stop.* | **6.2.5 Numeral Tracks:** Place out the numeral track, with numerals uncovered. *Watch me as I count forwards and backwards.* Point to each numeral in turn while counting forwards and then backwards. *Now you count forwards and then backwards and point to each number in turn.* Close lids on the numeral track and repeat previous activity uncovering the lids AFTER saying each number.  *Numeral Track and Numerals 1 - 20* | **6.4.5 Combining patterns using 4-grids, 6-grids, 8 grids, 10 grids:** Flash an empty grid. *How many squares did you see?* Flash the same grid with x dots. *How many squares altogether? How many dots? How many empty squares?*  *4-grids, 6-grids, 8-grids and 10-grids* | **6.6.5 Organising Equal shares:**  Place out 5 (white cows), 5 (black cows) and 5 (brown cows) *What can you see? Farmer Mary own the (white cows), Farmer Joe owns the (black cows) and Farmer Biliie owns the (brown cows) Can you sort out the cows? Would you like to check?*  *And so on*  Similarly for 10 between 2, 9 among 3 and so on… |
| **6.1.6 Saying the number word after:** *I’m going to say a number and I want you to say the number just after the one I say. Ready. .* | Place out the numeral track with numerals covered. Uncover a numeral. *What number is this?* Leave that numeral uncovered. Point to another lid. *So what numeral is under here? . . . Would you like to check?* |  | **6.6.6 Partitioning into equal shares:** Place out 3 (dolls) and 12 (biscuits). *These children are sharing 12 biscuits. Can you share out the biscuits for them?*  Similarly 14 between 2, 9 among 3, 20 among 4 and so on |
| **6.1.7 Saying the number word before:** *I’m going to say a number and I want you to say the number just before the one I say. Ready. .* | **6.2.6 Numeral Rolls:** Display the numeral Roll from 1 to 20. *This is called a numeral roll. You say the numbers as I unroll it. Ready … Now let’s say the numbers backwards.*  Repeat numeral Roll to 50 *Numeral Roll 1 - 50* |
| Using the numeral roll from 1 to 50 point to each set of numerals in time. *These numbers are the ones….These numbers are called the teens…These numbers are called the twenties and so on Numeral Roll 1 - 50* |

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| Number Word Sequences  7.1 Number Word Sequences from 1-100 | Numerals  7.2 Numerals from 1-100 | Addition and Subtraction  7.3 Counting On and Counting Back | Number Structures  7.4 Combining and Partitioning Involving 5and 10 | Number Structures  7.5 Partitioning and combining numbers within the range 1-10 | Multiplication and Division  7.6 Early Multiplication and Division |
| Purpose – To develop knowledge of number word sequences in the range 1 to 100 | Purpose - To develop knowledge of numerals and numeral sequences in the range 1-100 | Purpose - To develop strategies involving counting-on and counting-back | Purpose – To develop facility with using five and ten to combine and partition numbers in he range 1 to 10 | Purpose – To develop facility with combing and partitioning numbers in the range 1 to 10 | Purpose – To Develop early Multiplicative and Divisional Strategies |
| **7.1.1 Saying short FNWS’s:** *Start counting from x count up to y*  Numbers sequences should cross decades | **7.2.1 Sequencing numerals:** Place out cards x to y randomly arranged. *Put these cards in order…Now say the numbers as you point to them.*  **Numerals 0 - 100** | **7.3.1 Counting Items in two screened collections:** *Here are x red counters. I’m going to cover these counters*… Place out y green counters. *Here are y green counters. I’m going to cover these y green counters… X and y, how many counters are there altogether? … Would you like to check?*  **Double Sided Counters** | ***7.4.1 Combining numbers to 5:***  Place out an empty FIVE frame with x red counters together *How many red counters? How many empty boxes? How many empty boxes and counters altogether?*  *Repeat for all combinations of 5* Shown > Flashed **Five Frames and Empty Five Frames** | **7.5.1 Describing and Recording Partitions of a Number:** Place out a pair-wise ten frame for x. *How many dots are on this frame? Tell me two numbers that make x. Can you see those two numbers on the frame? Show me where the two numbers are. Can you tell me another two numbers that make me x? Try to make x in as many ways as you can. I am going to write down the ways of making x.* Use an appropriate notation system to record the partitions.  Repeat for other numbers using **both** pair-wise and five-wise.  **Pair and Five Wise Ten Frames** | **7.6.1 Combining and Counting Equal Groups:** Place out ten 2-dot cards. *Show me 2 dots. Now 2 more dots. How many is that altogether? Now 2 more dots. How many is that altogether? Can you put them in a pattern? (*That is make a 2x10 rectangular array of dots) *Now 2 more. How many is that*  *Watch me as I count the dots. Two, four, six eight. Count with me by twos Ready…*  *Continue to 10 and 12.*  *Continue with x-dot cards.*  **Dot Cards** |
| **7.1.2 Saying short BNWS’s:** *Start counting from x and count back to y* | **7.2.2 Sequencing Decade Numerals:** Place out the decade cards from 10 to 40, randomly arranged. *Put these cards in order. Now say the numbers and you point to them*  *Similarly order other decade cards.*  **Decade Cards** | **7.3.2 Counting items in a row with some items screened:** Place out a row of 30 dots.Place a marker over the xth dot. *This number is x.* Place a small screen over the next (three) dots. Point to screen *There are (three) under here. Point to next unscreened dot. What number is this one?*  **Row of 30 Dots and Small screens** | **7.4.2 Partitioning 5:** Place out an empty FIVE frame and place x red and y green counters (totalling 5) in the squares. *How many counters altogether? How many red counters? How many green counters?* Shown > Flashed **Five Frames and Empty Five Frames** | **7.5.2 Partitioning using Flashed Ten Frames:** Flash a ten frame showing a pair wise x. *How many dots did you see? Tell me two numbers on the frame that made x.* Flash the frame again. *Tell me another two ways to make x*. *What two numbers did you see this time?*  Repeat for other numbers using **both** pair-wise and five-wise.  **Pair and Five Wise Ten Frames** | **7.6.2 Determining the Number of Equal Groups:** *Here are 10 eggs. Here are some baskets. Each basket should get 2 eggs. Put 2 eggs in each basket. How many baskets have 2 eggs?*  *Here are 15 biscuits. Here are some plates. Put 3 biscuits on each plate. How many plates get 3 biscuits?*  Similarly with 12 and 4, 20 and 5 and so on. |
| **7.1.3 Saying one, two three numbers after a given number:** *I’m going to say a number and I want you to say the next number after the number I say.*  *This time say the next 2/3 numbers after the number I say.* | **7.2.3 Sequencing Off-Decade Numerals:** Place out off-decade cards from 6 to 36, randomly arranged. *Put these cards in order. Now say the numbers and you point to them*  *Similarly order other off-decade cards.*  **Numerals 0 - 100** | **7.3.3 Missing Addend Tasks:** Briefly display and then screen x counters. *Here are x red counters.* Ask the child to look away while screening y green counters. *While you were looking away I added some green counters and now there are \_\_\_ in all. How many green counters are there? Would you like to check?*  **Double Sided Counters and Screens** | **7.4.3 Combining 5 and a number in the range 1 to 5:** place out an empty ten frame. Place five red counters in the upper row and y yellow counters in the lower row. *How many red counters? How many yellow counters? How many counters altogether?*  Repeat for all 5-wise patterns  **Shown > Flashed**  **Double Sided Counter, Empty Ten Frames, Five-Wise Ten Frames** | **7.5.3 Partitioning and recording Using Flashed Tens Frames:**  Flash a ten frame showing a pair wise x. *How many dots did you see? Tell me two numbers on the frame that made x.* Flash the frame again. *Tell me another two ways to make x*. *Try to write down all the ways we can make x.*  Repeat for other numbers using **both** pair-wise and five-wise.  **Pair and Five Wise Ten Frames** | **7.6.3 Determining the number in an equal share:** *Here are 6 counters. Here are 3 people. Can you share the counters out so that each person gets an equal share? How many counters does each get?*  *Here are 12 counters. Here are 4 people. Can you share the counters out so that each person gets an equal share? How many counters does each get?*  **Counters** |
| **7.1.4 Saying one, two three numbers before a given number:** *I’m going to say a number and I want you to say the number before the number I say.*  *This time say the next 2/3 numbers before the number I say.* | **7.2.4 Ordering 2-digit numerals:**  Place out four cards in the number range 1 to 30 (e.g. 9, 14, 23, 24) randomly arranged. *Put these cards in order. Now say the numbers as you point to them.*  Increase range 1 to 40, 40 to 100, 1 to 100  **Numerals 0 - 100** | **7.3.4 Removed Item Task:** Briefly display and then screen x counters. *Here are x red counters.* Ask the child to look away while removing y counters. *There was x counters and while you were looking away I removed y counters. How many counters are left? Would you like to check?*  **Double Sided Counters and Screens** | ***7.4.4 Using 5 to partition Numbers in the Range 6 to 10:*** Place out an empty ten frame. Place **5 red** counters in the upper row and **x red** counters in the lower row*. How many counters altogether? How many counters in the upper row? How many counters in the lower row?*  *Similarly with other combinations involving 5*  **Shown > Flashed**  **Double Sided Counter, Empty Ten Frames, Five-Wise Ten Frames** | **7.5.4 Combining Two Numbers Using Visible, Pair-Wise Frames:** Place out a ten frame using a pair-wise pattern 4 and a ten frame showing a pair-wise pattern 3. *How many dots are on this frame? How many dots are on this frame? How many dots altogether? Explain how you know there are seven dots.*  Similarly for other pairs of addends with sum less than or equal to 10  **Pair and Five Wise Ten Frames** | **7.6.4 Describing Visible Arrays:** Place out a 4 x 6 array. *Here is an array? What do you notice? These are called rows. How many rows are there? What can you say about each row? These are called columns. How many columns are there? What can you say about each column?*  Similarly for arrays 3x5, 3x2, 6x3 and so on  **Arrays** |
| **7.1.5 Counting the Number of Jumps Forwards from a to b:** *I am going to count the number of jumps from one number to another. How many jumps from 6 to 8. Six, seven, eight-two jumps. Now you can count the jumps from 4 to 6*  *Repeat for other numbers within the range 1-100.* | **7.2.5 Numeral Recognition:** *Place out ten cards in the range 1 to 30, randomly arranged. Point to the number x. Point to the number y.*  *Similarly using the cards in the range 1 to 50, 50 to 100, 1 to 100.*  **Numerals 0 - 100** | **7.3.5 Missing Subtrahend Tasks:** Briefly display and then screen x counters. *Here are x red counters.* Ask the child to look away while removing and then screening y counters. *There were x counters and while you were looking away I removed some counters and now there are only \_\_\_. How many did I remove? Would you like to check?*  **Double Sided Counters and Screens** | **7.4.5 Combining numbers to 10:**  Flash an empty TEN frame with x red counters together and y yellow counters together (they should total 10) *How many red counters? How many yellow counters? How many altogether?*  *Repeat for all combinations of 10*  **Empty Ten Frames, Counters, Printed Ten Frames** | **7.5.5 Combining Two Numbers Using Visible, Five-Wise Frames:** Place out a ten frame using a five-wise pattern 7 and a ten frame showing a five-wise pattern 2. *How many dots are on this frame? How many dots are on this frame? How many dots altogether? Explain how you know there are nine dots.*  Similarly for other pairs of addends with sum less than or equal to 10  **Pair and Five Wise Ten Frames** | **7.6.5 Building Visible Arrays:** place out 3 rows of 6 dots. *Here are some rows. What do you notice about each row? Can you make an array? Point to each of the rows in your array. How many rows are there? Point to each column in your array. How many columns are there?*  *Similarly for 4 rows of 2 dots, 2 rows of 7 dots, 5 rows of 4 dots, and so on*  **Individual Dot Cards** |
| **7.1.6 Counting the Number of Jumps backwards from b to a:** *I am going to count the number of jumps from one number back to another. How many jumps from 10 back to 7. Ten--, nine, eight, seven – 3 jumps. . Now you can count the jumps from 13 back to 9*  *Repeat for other numbers within the range 1-100.* | **7.2.6 Numeral Identification:**  *Place out tens cards in the range 1 to 30, randomly arranged.* Point to the number x*. What number is this?*  Point to the number y*. What number is this?*  *Similarly using the cards in the range 1 to 50, 50 to 100, 1 to 100.*  **Numerals 0 - 100** | **7.3.6 Subtractive Tasks Using a Row:** Place out a row of 20 dots. Place a marker adjacent to the xth spot. This is number x. Place a small screen over the next y dots. Point to next dot. *This is number \_\_.* Point to the screen. *How many are under here? Would you like to check?*  **Rows of 20 dots and small screens** | **7.4.6 Partitioning 10:** Flash an empty ten frame. *How many squares altogether*? *I am going to put on x red counters. How many empty squares will there be?* Place on x red counters. *Watch to see if you were correct. Flash the ten frame, Were you correct? How many squares altogether? How many counters? How many empty squares?*  **Empty Ten Frames, Counters, Printed Ten Frames** | **7.5.6 Combining Two numbers Using Flashed Frames:** Flash a ten frame showing a five-wise pattern 5. *How many dots are on this frame?* Flash a ten frame showing a five-wise pattern 2. *How many dots are on this frame? How many dots altogether? Explain how you know there are seven dots.*  Repeat for Pairs Patterns  Similarly for other pairs of addends with sum less than or equal to 10  **Pair and Five Wise Ten Frames** | **7.6.6 Determining the Number of Dots on Visible Arrays:**  Place out a 2x5 array. *This array has two rows of 5 dots. How many dots are there altogether?*  Similarly with 2x3, 3x5, 6x2, 4x4 and so on  **Selection of Arrays** |
| **7.1.7 Forwards and Backwards Using the Sequence of Decade Numbers from 10 to 100:** *I’m going to count by tens to 100. Ready...10, 20…100. Now you count by tens.*  *This time I’m going to count backwards by tens from 100. Ready...100, 90…10. Now you count backwards from tens.*  *This time start from 50 and count forwards/backwards by tens.* | **7.2.7 Numeral Tracks:** Place out the numeral track, with numeral uncovered. *Watch me as I count forwards and backwards.* Point to each numeral in turn while counting forwards and then backwards. *Now you count forwards and then backwards and point to each number in turn.* Close lid on the Numeral Track. And repeat previous activity. Uncovering the lids AFTER saying each number.  **Numeral Tracks 20 - 100** | Place out a row of 20 dots. Place a marker adjacent to the xth spot. This is number x. Place a small screen over the next y dots. Point to the screen *There are y dots under here.* Point to the next unscreened dot. *What number is this?*  **Rows of 20 dots and small screens/marker** | **7.5.7 Combining Two numbers Using Flashed Frames and recording:** Flash a ten frame showing a five-wise pattern 5. *How many dots are on this frame?* Flash a ten frame showing a five-wise pattern 2. *How many dots are on this frame? How many dots altogether? Explain how you know there are seven dots. Let’s Write something to show that five and two make seven.*  Repeat for Pairs Patterns  Similarly for other pairs of addends with sum less than or equal to 10  **Pair and Five Wise Ten Frames** |
| *This time start from 30 and count forwards 3 tens. etc.*  *This time start from 70 and count backwards 2 tens* | Place out the Numeral Track, with all numerals covered. Uncover a numeral. *What number is this?* Point to another lid (leave covered). *So what number is this?* …. *Would you like to check?*  *Use for counting forwards and backwards*  **Numeral Tracks 20 - 10** | **7.3.7 Comparison Task:**  Place out x (horses). Place out y (jockeys). *Here are x horses and y jockeys. If each jockey got onto a horse, how many (horses) would not have a (jockey*). |
| **7.2.8 Numeral Rolls:** Display the numeral Roll from 1 to 100. *This numeral roll shows the numbers from 1 to 100 in order. You say with me that we see as I unroll it. Ready … Now let’s say the numbers backwards.*  Start at any number |
| **7.2.9 Hundred Square:** Place out a hundred square. *Look away while I cover a number.* Place a small cover over a numeral. *What number did I cover?*  *Look away while I cover some numbers.* Cover a range e.g. 43-46. Point to one of the covered numbers, *What number is behind this cover? Would you like to check?*  **100 Square** |
| **7.2.10 Blank Hundred Square:** Write the fours column on the square. *Read the numbers that I have written. What patterns do you see?* Place a marker on the 26th square. *What number goes here?* Write the numeral 26 in the appropriate square. Similarly with 27, 28, 23 and so on.  Repeat activity for other columns and rows on the square.  **100 Square** |

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| Number Word Sequences from 2s, 10, 5s, 3s, and 4s, | Numerals 1-1000 | Incrementing by 10s and 1s | Adding and Subtracting to and from decade numbers. | Addition and Subtraction to 20,using 5 and 10 | Developing Multiplication and Division |
| Purpose – To develop facility with forward and backward number word sequences in the range 1-100 | Purpose - To develop knowledge of numerals and numeral sequences in the range 1-1000 | Purpose-To develop the facility to increment and decrement numbers by 10s and 1s in the range 1-100. | Purpose – To develop the facility to add numbers in the range 1-9 to and from decade numbers, and to subtract numbers in the range 1-9 to and from decade numbers. | Purpose – to develop facility with addition and subtraction in the range 1-20, using grouping by 5 and 10  **THE PROCEDURES INVOLVE USING THE ARITHMETIC RACK** | Purpose – to further develop early multiplicative and divisional strategies |
| **8.1.1 FNWSs by 2s from 2:** *Count with me from 1. We’ll take turns to say the number. I’ll say one and you say 2 and I’ll say 3 and so on….This time, I’ll say the number softly and your number loudly. Ready?*  *This time when it is my turn. I will nod but I won’t say my number. Ready…That is called counting by two. Count by twos again. Ready….* | **8.2.1 Sequencing and naming 100s cards:** Place out cards 100s numeral cards in order. *These cards are the hundreds. I am going to say them starting from 100.* Point to each numeral card as they are said. *Now you say the numbers starting from 100.*  Place out the numeral in random order. *Put these card in order and tell me what they say.* (Use different starting points)  Place out 100s cards as a numeral track (numbers hidden). Turn over the lid for 600. *What number is this? Going by hundreds what is the next number?* (repeat)  **100s cards to 1000** | **8.3.1 Incrementing and Decrementing on the decade, by 10s:** Place out 3 bundles of 10 (sticks). *How many sticks are there?* Place out another bundle. *How many sticks are there now?* Continue to ten bundles.  Remove one bundle. *How many sticks are there now?* Remove another bundle. *How many sticks are there now?* Continue to 0  Briefly display and then screen 3 bundles. *How many sticks are there under the screen?* Place another bundle under the screen. *How many now?*  *Continue with similar examples adding and removing (one bundle at a time)*  **Lollipop Sticks** | **8.4.1 Adding from a decade*:*** Place out 4 tens. How many tens are there? How many ones is that? (40) Place out 4 ones. How many ones are there now? (44) Briefly display and then screen 3 tens. *How many tens are there? How many ones is that? (*30) Place 6 ones under the screen. *How many ones are there now?* (36) Check.  Continue with similar examples.  **Lollipop Sticks and screens** | 8.5.1 Building numbers 6-10. *Move 5 beads on the upper row. Move 1 more on the upper row. How many altogether?*  Similarly for 5 and 2, 5 and 3, 5 and 4, 5 and 5  Repeat in random order. | **8.6.1 Determining the number in partially screened equal groups:** Place out 3 plates, each containing 3 cakes. *Here are 3 plates of cakes. Now look away* Place out 2 more plates of cakes under a screen. *There are 2 more plates of 3 cakes under here. How many cakes are there altogether?*  Similarly 4 lots of 2 and 2 lots of 2; 2 lots of 5 and 1 lot of 5; etc.  **Coloured Counters** |
| **8.1.2 FNWS and BNWS’s by 2s:** *This time I am going to use the 2 dot cards. Count by twos as I move the cards. Ready….*  *This time I am going to take the cards away. Count backwards by twos as I take the cards away. Ready…*  *Now count backwards by twos from 10, without the cards. Ready…*  *This time count forwards in 2s from \_\_.*  **2 Dot Cards** | **8.2.2 Naming 3 digit numerals using arrow cards:** Place out arrow cards for 200, 40 and 6. *Put the arrow cards together. What number is that? (Repeat with similar numerals)*  → Place out the arrow cards for 700 and 60. *(Repeat with similar numerals)*  →500 and 2 *(Repeat with similar numerals)*  **Arrow Cards** | **8.3.2 Incrementing and decrementing off the decade by 10s:** Place out 3 bundles and 2 sticks. *How many sticks are there?* Place out another bundle. *How many sticks are there now?* Continue to ten bundles and 2 sticks.  Remove one bundle. *How many sticks are there now?* Remove another bundle. *How many sticks are there now?* Continue to 0 bundles and 2 sticks  Briefly display and then screen 2 bundles and 4 ones. *How many sticks are there under the screen?* Place another bundle under the screen. *How many now?*  *Continue with similar examples adding and removing (one bundle at a time)*  **Lollipop Sticks** | **8.4.2 Subtracting to a decade*:*** Place out 7 tens and 6 ones. How many tens are there? How many ones are there? How many ones are there altogether? (76) Remove the 6 ones. How many are there now? (70) Briefly display and then screen 8 tens and 3 ones. *How many tens are there? How many ones are there? How many are there altogether (*83) Remove 3 ones from the screen. *How many ones are there now?* (80) Check. Continue with similar examples. **Lollipop Sticks and screens** | **8.5.2 Doubles 3+3, 4+4, 5+5:**  *Make a group of 3 on the upper row. Make a group of 3 on the lower row……Now move over another 3 on the upper row and move 3 back on the lower row. How many altogether?*  Similarly for 4+4 and 5+5  Repeat in random order. | **8.6.2 Determining the number in screened equal groups:**  Briefly display and then screen six 2-dot cards. *There are 6 lots of 2 under here. How many are there altogether?*  Similarly four 5-dot cards; five 3-dot cards and so on.  **2,3,4,5 Dot Cards** |
| **8.1.3 FNWSs by 10s from 10:** *I am going to put out the bundles of ten one at a time. Count by tens as I put out the bundles. This time count by tens without the bundles. Ready…*  **Lollipop Sticks** | **8.2.3 Naming 3 digit numerals using digit cards:** Place out the digit cards for 3, 7 and 5. *Put the digit cards together to make a number in the hundreds. What number did you make? Rearrange the cards to make another number. What number did you make this time? Now make another number?*  *Repeat activity using a ‘0’ card.*  **Numerals 0 - 9** | **8.3.3 Incrementing by 10s and 1s:** Briefly display and then screen 4 bundles. *How many sticks are there under the screen?* Place 2 bundles and 1 stick beside the screen. *How many sticks now?* Put the 2 bundles and 1 stick under the screen and place out 1 bundle and 3 sticks*. How many sticks now? Check to see if you are correct.* (repeat with similar examples)  **Lollipop Sticks and screens** | **8.4.3 Adding to a decade: 1-5:** Place out five complete ten frames (10 dots) and a ten frame (8 dots). *How many dots altogether? How many more to make 60?*  Briefly display and screen two complete ten frames (10 dots) and a ten frame (9 dots). *How many dots are there altogether? How many more to make 30*? Continue with similar examples.  **10 frames** | **8.5.3 Building numbers 11-20:**  *Move 10 beads on the upper row. Move 1 bead on the lower row. How many altogether?*  Similarly for 10+2, 10+3, 10+4….!0+10  Repeat in random order. | **8.6.3 Determining the number of groups:**  Place three 4-dot cards under a screen. *I am using the 4-dot cards and there a 12 dots altogether. How many cards are there?*  Similarly 9 dots using 3-dot cards, 16 dots using 2-dot cards and so on.  **2,3,4,5 Dot Cards** |
| **8.1.4 FNWSs and BNWSs by 10s:** *I am going to put out the bundles of ten one at a time. This time count backwards by tens, from 100, as I remove the bundles.*  *This time count forwards and backwards by tens to 50 without the bundles.*  *This time count forwards and backwards by tens to 100 without the bundles.*  *Ready…*  **Lollipop Sticks** | **8.2.4 Sequencing and Naming Decade Numerals beyond 100:** Place out numeral cards for decade numbers from 610 to 700 in random order. *Put these cards in order from left to right.* Similarly for other numbers.  Place out numeral cards for decade numbers from 360 to 450 in random order. *Put these cards in order from left to right.* Similarly for other numbers.  **Numerals 100 – 1000 – on the decade** | **8.3.4 Decrementing by 10s and 1s:** Briefly display and then screen 9 bundles and 6 sticks. *How many sticks are there under the screen?* Remove 2 bundles and move beside the screen. *How many sticks now?* Remove 1 bundle and 1 stick to beside the screen. *How many sticks now? Check to see if you are correct.* (repeat with similar examples)  **Lollipop Sticks and screens** | **8.4.4 Subtracting from a decade: 1-5:** Place out four complete ten frames (10 dots) How *many dots are there?* Screen 2 dots on one of the tens frames. *I have screened 2 dots. How many are there now?*  Briefly display and then screen three complete ten frames (10 dots) How *many dots are there?* Ask the child to look away whilst double screening three dots under the screen. *I have taken away 3 dots. How many dots are there now*? *Check to see if you are correct.*  Continue with similar examples.  **10 frames** | **8.5.4 Doubles 6+6 to 10+10**  *Make a group of 6 on the upper row. Make a group of 6 on the lower row. Can you see 5+5? How many is that? What else can you see? How many altogether?*  *Now move 4 more over on the upper row and move 4 back on the lower row. How many altogether?*  Similarly for 7+ …10+10  Repeat in random order. | **8.6.4 Determining the number in each group**  Place out seven 2-dot cards under a screen. *There are seven cards and fourteen dots altogether. What is the number of spots on each card?*  Similarly 3 cards and 15 dots, 4 cards and 8 dots, etc.  **2,3,4,5 Dot Cards** |
| **8.1.5 FNWSs by 5s from 5:** *I am going to put out the 5-dot cards. Each time I put out a 5-dot card, you tell me how many dots altogether. That’s called counting in 5s.*  *Count by 5s as I move the 5-dot cards.*  *This time count to 30 by 5s without the cards.*  *This time count to 50 by 5s. This time count to 100 by 5s*  **Five Dot Cards** | **8.2.5 Sequence 3 digit numerals:** Place out the following numeral cards; 207, 217….297 in random order. *Put these cards in order from left to right. Read the numbers from left to right.* Similarly for other sets of cards for example: 362, 372 … to 452; 46, 146…..to 946; 82, 92 …to 112.  **Numerals 0 - 1000** |  | **8.4.5 Adding to a decade: 6-9:** Place out five complete ten frames (10 dots) and a ten frame (2 dots). *How many dots altogether? How many more to make 60?*  Briefly display and screen two complete ten frames (10 dots) and a ten frame (4 dots). *How many dots are there altogether? How many more to make 30*? Continue with similar examples.  **10 frames and screens** | **8.5.5 Doubles plus or minus 1:** *Make a group 4 on the upper row. Make a group of 3 on the lower row. Can you work it out in your head using a double? Now move another 3 over on the upper row and 3 back on the lower row. How many are 4 and 3?*  Repeat with 3 on the top and 4 on the bottom.  Similarly for 2+1, 1+2,….4+5, 5+4  Repeat in random order.  *Make a group 8 on the upper row. Make a group of 7 on the lower row. Can you work it out in your head using a double? Now move another 2 over on the upper row and 2back on the lower row. How many are 8 and 7?*  Repeat with 7 on the top and 8 on the bottom.  Similarly for 6+5, 5+6,….10+9, 9+10  Repeat in random order. | **8.6.5 Determining the number in a Screened Array:** Briefly display and then screen a 7 x 3 array. Unscreen one row. *There are seven rows altogether. How many dots are there altogether?*  Similarly using the following arrays: 4x2, 4x3, 6x5, etc.  **Variety of Arrays** |
| **8.1.6 FNWS and BNWS’s by 5s:** *This time I am going to use the 5 dot cards. Count by fives as I move the cards. Ready….*  *This time I am going to take the cards away. Count backwards by fives as I take the cards away. Ready…*  *Now count backwards by fives from 30, without the cards. Ready…*  *This time count forwards in 2s from*  *This time count forwards by 5s to 50. Count backwards by 5s from 50.*  *This time count forwards by 5s to 100. Count backwards by 5s from 100.*  **Five Dot Cards** | **8.2.6 Ordering 3 digit numerals:** Place out the following 4 numeral cards; 98, 201, 410, 905 in random order*. Put the cards in order from left to right. Read the numbers from left to right.*  Similarly for other sets of numeral cards.  **Numerals 0 - 1000** | **8.4.6 Subtracting from a decade: 6-9:** Place out four complete ten frames (10 dots) How *many dots are there?* Screen 6 dots on one of the tens frames. *I have screened 6 dots. How many are there now?*  Briefly display and then screen three complete ten frames (10 dots) *How many dots are there?* Ask the child to look away whilst double screening seven dots under the screen.. *I have taken away 7 dots. How many dots are there now*? *Check to see if you are correct.*  Continue with similar examples.  **10 frames and screens** | **8.5.6 Addition by going through 10:** *Move over 9 on the upper row and 2 on the lower. Now move over**1 on the upper and move back 1 on the lower. How many are 9 and 2?*  Similarly for 9+3, 9+4…9+9  Repeat with 8 on the top  Repeat with 7 on the top | **8.6.6 Determining the number of Rows:** Briefly display and then screen a 4x5 array. Unscreen one row. *There are 20 dots altogether. How many rows are there?*  Similarly using the following arrays: 6x2, 8x3, 3x4, etc.  **Variety of Arrays** |
| **8.1.7 Counting by 3s, from 3, and by 4s from 4:**  *This time I am going to use the 3 dot cards. Count by threes as I move the cards. Ready….*  *That is called counting in 3s. Count to 12 by 3s as I move the cards. Now try it without the cards.*  *This time count forwards in 3s to 18*  *This time count forwards by 3s to 30.*  *Similarly forwards to 40s by 4s*  **Three and Four Dot Cards** | **8.2.7 Sequences of multiples with numerals**: Place out a numeral track with the following sequence of numerals. 2, 4, 6….20. Turn the lids over to uncover the numerals on the numeral track. *Let’s say these numbers together…Now lets say them backwards…..*Cover the numerals with the lids. *Now say the numbers starting from 2 and turn over each lid after you say the number.* ***(***Repeat backwards***)***  Similarly with numeral tracks with the sequence by 3s, 5s and 10s.  **Numeral Tracks with numerals in multiples of 2,3,4,5 and 10** |  | 8.5.7 Commutativity of Addition: *Move over 2 on the upper row and 5 on the lower row. Read the numbers on each row. Now move 3 more over on the upper row and 3 back on the lower row. Now read the numbers in each row. What do you notice?*  Similarly with 4 and 9, 3 and 7, and so on | **8.6.7 Determining the number in each row:** Briefly display and then screen a 3x4 array.. *There are 12 dots altogether and there are three rows.. How many dots in each row?*  Similarly using the following arrays: 2x8, 6x3, 4x5, etc.  **Variety of Arrays** |
| **8,1,8 FNWSs by 3s and 4s**:  *This time I am going to use the 3 dot cards. Count by threes as I move the cards. Ready….*  *This time I am going to take the cards away. Count backwards by threes as I take the cards away. Ready…*  *Now count backwards by threes from 12, without the cards. Ready…*  *This time count forwards in 3s from 18*  *This time count forwards by 3s to 30. Count backwards by 3s from 30 etc..*  *Similarly forwards and backwards to 40s by 4s*  **Three and Four Dot Cards** |  | **8.5.8 Addition by compensation:**  *Move over 7 on the upper row and 9 on the lower row. read the numbers on each row. Now move 1 more over on the upper row and 1 back on the lower. Now read the numbers in each row. What is 7 add 9?*  Similarly for 6+8, 4+6, 9+7, etc. |
|  | **8.5.8 Subtraction by going through 10** *Move over 10 in the upper row and 3 on the lower row. What number is that? Take 4 away from 13. Take 3 in the lower row and 1 on the upper row? How many are left*  Similarly for 15-7, 12-3, 12-4, etc. |

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| Number Word Sequences  9.1 Counting by 10s and 100s | Addition and Subtraction  9.2 2-digit addition and subtraction through counting | Number Structures  9.3 Non-canonical forms of 2-digit and 3-digit Numbers | Addition and Subtraction  9.4 2 digit addition and subtraction through collections | Addition and Subtraction  9.5 Higher Decade Addition and Subtraction | Multiplication and Division  9.6 Advanced multiplication and division. |
| To develop facility with counting forwards and backwards by 10s off the decade, and counting by 100s on and off the 100, and on and off the decade | To develop counting-based strategies for 2-digit addition and subtraction | To develop facility to associate non-canonical forms of 2-digit and 3-digit numbers with their canonical forms ( e.g. 4 tens and 27 ones is a non-canonical form of 67. and 6 tens and 7 ones is a canonical form of 67) | To develop collections-based strategies for 2-digit addition and subtraction. | To develop strategies for adding numbers in the range 2 to 9, to 2-digit numbers, and subtracting numbers in the range 2-9, from 2-digit numbers. | To develop advanced multiplicative and divisional strategies. |
| **9.1.1 Counting by 10s off the decade:**  Place out x 10-strips. *How many dots are there?* Place out a y-strip (e.g. 3 strip). *How many dots are there now? Now I’m going to put out another 10… How many are there now?* And so on  **100 x 10 strips**  Place out x10-strips and a y-strip*. That are x tens and y ones. How many dots altogether?* Remove one 10-strip. *Now how many dots are there?* Remove another 10-strip. *Now how many dots?* And so on. **1-9 strips**  Place out x 10-strips and a y-strip. *How many dots altogether?* Place a screen over the strips and place a 10-strip beside the screen. *Here is another 10. How many is that altogether?* Place out another strip. *How many now?* And so on.  Place out x 10-strips and a y-strip. *How many dots altogether?* **Screen** the strips. Remove and display one strip. *There were xy dots and I’ve taken away ten. How many dots are there now?* And so on. | **9.2.1 Adding tens to a 2-digit number:** Draw an empty number line with a mark near the left-hand end. Write sum (e.g. .32+40) underneath. *Start from 32 and add 40. Tell me how you worked it out. I will write marks on the empty number line to show how you worked it out.*  Draw an empty number line with a mark near the left-hand end. Write sum (e.g. .25+20) underneath. *This time, you write marks on the ENL to show how you worked it out.*  (Similarly 46+30, 12+80 and so on.) | **9.3.1 - 2-Digit numbers in Canonical form**: Place out 5 bundles of 10 and 6 ones. *How many bundles of 10 are there? How many ones are there? How many sticks are there altogether?*  Similarly with 42, 25, 83, 17 and so on.  Place out 6 bundles of 10 and 4 ones under a screen. *Under the screen I have 64 sticks. How many tens are there? How many ones are there? Check to see if you were correct.*  Similarly 37, 94, 50, 30, 31 and so on.  Place out 4 bundles of 10 and 2 ones under a screen. *Under the screen I have 4 bundles of ten and 2 ones. How many sticks do I have altogether? Check to see if you were correct.*  Similarly 2 tens and 6 ones, 5 tens and 8 ones, 3 tens and 0 ones and so on.  **Lollipop Sticks** | 9.4.1 Adding two 2-digit numbers using visible collections. Using red sticks place out 4 bundles of ten and 2 ones. *How many red sticks are there?* Using green sticks place out 2 bundles of ten and 2 ones. *How many sticks are there altogether? Explain how you worked that out. Use the sticks to show how you worked that out.*  Similarly with 28+24, 51+34, 59+26, 77+24 and so on.  **Coloured Straws – Red and Green** | **9.5.1 Using addition facts within the decade:** Briefly display and the screen 2 red and 2 green bundling sticks. *How many red sticks? How many green sticks? How many sticks altogether?* Write 2+2=4  Place 2 bundles of red sticks and 2 single green sticks under the screen. *How many red sticks now? How many green sticks? How many sticks altogether?* Write 22+2=24  Similarly with 32+2, 42+2… 92+2  Repeat for sets of additions such as 5+2, 25+2… 95 +2  *Now answer these without using the sticks. 2+3, 22+3…92+3.*  Repeat for sets of additions such as 4+4, 24+4…94+4  **Coloured Straws – Red and Green** | **9.6.1 Word Problems - Multiplication:** *Here is a problem for you to solve. There are four children and they each have 3 books. How many books are there altogether?*  *Try to solve this problem. There are five packets and in each packet there are two pencils. How many pencils altogether?*  *There are six baskets and in each basket there are five apples. How many apples are there altogether?*  And so on |
| **9.1.2 Counting by 100s to 1000:**  Place out one 100-square. *How many dots are there?* Place out another 100 square. *How many dots are there now?* (100, 200, 300…1000)  *Now I’m going to take a 100-square away* Remove one hundred square. *How many dots are there now?(*900, 800…0)  Place out a 100-square and screen it. *How many dots are under the screen? Place another 100-square under the screen. How many dots are there now?*(100, 200,…1000)  Place out ten 100-squares. *How many dots are there?* Place a screen over the squares. *Now I’m going to take one of the 100-squares away.* Remove 100-square. *How many dots are there now?(900, 800, …0)* **10 x 100 Squares** | **9.2.2 Adding Two 2-digit Numbers without Regrouping:**  Draw an ENL with a mark near the left hand end. Write 31+53 under the ENL. *Start from 31 and add 53. Write marks on the ENL to show you how you worked it out.*  *Can you work it out another way? Draw another ENL and use that to work it out another way.*  Similarly 13+36, 27+51, 24+41 and so on. | **9.3.2 - 2-Digit Numbers in Non-Canonical Forms**: Place 2 bundles of 10 and 16 ones under the screen. *This time I have 36 sticks and there are 2 bundles of tens. How many ones are there? Check to see if you are correct?*  Similarly with 5 bundles of ten and 12 ones, 7 bundles of ten and 14 ones, and so on.  Place 3 bundles of 10 and 26 ones under the screen. *This time I have 56 sticks and there are 3 bundles of tens. How many ones are there? Check to see if you are correct?*  Similarly with 4 bundles of ten and 22 ones, 1 bundle of ten and 26 ones, and so on.  Place 6 bundles of 10 and 5 ones under the screen. *This time I have 65 sticks. If I had 5 bundles of 10 how many ones are there? What if I had 6 bundles of ten? Three bundles of ten?* And so on*.*  Place 2 bundles of ten and 42 sticks under the screen. *This time I have 2 bundles of 10 and 42 ones. How many sticks altogether? Check to see if you are correct?*  Similarly with 5 bundles of ten and 31 ones, 3 bundles of ten and 20 ones, 7 bundles of ten and 18 ones, and so on  **Lollipop Sticks** | **9.4.2 Adding two 2-digit numbers using screened collections:**  Briefly display and screen 43, using red. Briefly display then screen 23, using green. Write the number sentence 43+23. *43and 23, how many altogether? Check to see if you were correct? Explain how you worked that out. Use the sticks if you wish.*  Similarly with 41+18, 55+26, 39+29, and so on.  **Coloured Straws – Red and Green** | **9.5.2 Using Subtraction Facts within the decade:** Briefly display and then screen 5 bundling sticks. *How many sticks?* Remove and screen 2 sticks. *How many left?* Write 5-2=3  Place 2 bundles of ten and 5 single sticks under the screen. *How many sticks?* Remove and screen 2 sticks. *How many sticks are left*? Write 25-2=23Similarly 35-2, 45-2…95-2.  Repeat for sets of subtraction such as 9-6, 39-6…99-6  *Now answer these without using the sticks. 7-4, 27-4…97-4*  Repeat for sets of subtractions such as 6-3, 26-3…96-3  **Coloured Straws – Red and Green** | **9.6.2 Word Problems- Quotition Division:** *Here is a problem for you to solve. Fourteen pens are put in groups of two. How many groups are there?*  *Try this to solve. There are 20 cherries and the children are given 5 each. How many children are there?*  *Each box of chocolate had four chocolates, and there are 12 chocolates altogether. How many boxes are there?*  And so on |
| **9.1.3 Counting by 10s beyond 100:**  Place out one 100-square. *How many dots are there?* Place out a 10-strip. *How many dots are there now* (100, 110, 120…?)  *Now I’m going to take a 10-strip away.* Remove one 10-strip. *How many dots are there now?*(200, 190, …)  Place out x 100-squares. *How many dots are there?* Place out a 10-strip. *How many dots are there now* (x00, x10, x20…?)  *Now I’m going to take a 10-strip away.* Remove one 10-strip. *How many dots are there now?* (x90, x80…)  Place out x 100-squares. *How many dots are there?* Screen the 100 squares. Place a 10-strip under the screen. *How many dots are there now* (x00, x10, x20…) *Now I’m going to take a 10-strip away?* Remove and display one 10-strip. *How many dots are there now?* (x90, x80…) **10 x 100 Squares** | **9.2.3 Adding Two 2-digit Numbers with Regrouping:**  Draw an ENL with a mark near the left hand end. Write 29+63 under the ENL. *Start from 29 and add 63.Use the ENL to work it out...*  *Can you work it out another way? Draw another ENL and use that to work it out another way.*  Similarly 28+38, 35+55, 16+78 and so on. | **9.4.3 Missing Addend tasks using visible collections**: Place out 40, using red. *There are 40 red sticks. Put out some green stick so that there are 60 altogether*  Place out 33 using red. There are 33 red sticks. *Put out some green sticks so that there are 55 altogether. Write 33+□=55*  Similarly with 32*+□=51, 79+□=97, 55+□=80, 36+□=73* and so on.  **Coloured Straws – Red and Green** | **9.5.3 Using Addition Facts Across the decades:** Briefly display and then screen a red ten (9) frame and a green ten (3) frame. *How many red dots? How many green dots? How many dots altogether? 9 and 3 make 12.* Write 9+3=12  *I’m going to put another ten under here.* Place another red ten (10) frame under the screen. *Now how many red dots? How many green dots? How many dots altogether? Write 19+3=22.* Similarly 29+3, 39+3…89+3  Repeat for sets of additions such as 6+7, 16+7,…86+7  *Now answer these without using the frames. 8+6? 18+6…88+6?*  *And so on.* **Red and Green Ten Frames and 1 to 9 -10 Frames** | **9.6.3 Word Problems- Partition Division:** *Here is a problem for you to solve. Fifteen oranges are shared equally amongst three people. How many oranges does each person get?*  *Try to solve this problem. Eighteen children are put into two equal groups. How many children are there in each group?*  *Twenty books are shared equally among four children. How many books does each child get?*  And so on |
| **9.1.4 Counting by 100s off the 100:**  Place out one 100-square and x ten-strips. *How many dots are there?* Place out another 100-square. *How many dots are there now?* Place out another 100-square. *How many dots are there now?*  Remove one hundred square. *How many dots are there now?* Remove another 100 squares. *How many are there now?*  Place out x 10-strips. *How many dots are there?* Place a screen over the 10-strips. Place out a 100-square and then place it under the screen. *How many dots are there now?* Place out a 100-square and then place it under the screen. *How many dots are there now?* And so on.  Place out x 100-squares and y 10-strips. *How many dots are there?* Place a screen over the squares and strips and then remove one 100-square. *How many dots are there now?* Remove another 100-square. *How many dots are there now?*  **100 squares and 10 strips** | **9.2.4 Subtracting tens from a 2-digit number:** *Use the empty number line to work out 92-30. Use the ENL to explain how you worked it out. Can you work it out another way? Use the ENL to show another way how this can be worked out.*  Similarly with 82-20, 47-40, 63-20 and so on | **9.3.3 - 3 Digit Numbers in Canonical Form**: Place out 2 hundreds, 4 tens and 6 ones. *How many hundreds are there? How many tens are there? How many ones are there? How many are there altogether?*  Similarly with 521, 752, 138, and so on  Place out 4 hundreds, 3 tens and 5 ones under a screen. Under the screen I have 435. *How many hundreds are there? How many tens are there? How many ones are there? Check to see if you are correct.*  Similarly 193, 462, 350, 355, and so on.  Place 2 hundreds, 5 tens and 1 one under the screen. *Under the screen I have 2 hundreds, 5 tens and 1 one. How many altogether? Check to see if you are correct.*  Similarly with 1 hundred, 4 tens and 6 ones; 8 hundreds, 1 ten and 8 ones; 3 hundred, 2 tens and 0 ones, and so on  **Lollipop Sticks** | **9.4.4 Missing addend tasks using screened collections.**  Briefly display and then screen 40, using red. Ask the child to look away while placing 12 under the screen, using green. *There were 40 red sticks. Then I put some green sticks under the screen as well. Now there are 52 sticks altogether. How many green sticks did I put under the screen?* Write the number sentence 40+□=52. *Check to see if you were correct. Explain how you worked it out. Use the sticks if you wish.*  Similarly with 55+□=75, 41+□=54, 28+□=40, 59+□=82 and so on  **Lollipop Sticks** | **9.5.4 Using subtraction facts across the decade.** .Place a ten (2) frame end-to-end with a ten (10) frame. Briefly display and then screen the two frames. *How many dots? I am going to cover up 4 dots. How many dots are not covered? 12 take away 4 leaves 8.* Write 12-4=8.  *I am going to put another 10 under here.* Place a ten (10) frame under the screen. *Now how many dots? I am going to cover up 4 dots. How many dots are not covered? 22 take away 4 leaves 18.* Write 22-4=18.  Similarly 32-4…92-4  Repeat sets of subtractions  *Now answer these without using the frames 11-8…91-8*  Repeat for sets of subtractions such as 24-9…94-9 – **Ten Frames** | **9.6.4 Commutativity with arrays:** Briefly display and then screen 3x5 array. *How many rows did you see? How many columns did you see? How many dots altogether?*  *Now I am going to turn to array around.* Turn the array through 90 degrees and again briefly display it then screen it. *How many rows are there now? How many columns are there now? How many dots are there now?*  Unscreen the array. *Five rows of three.* Turn the array through 90 degrees. *Three rows of five. Can you see that these are the same? How many are there altogether?*  Similarly with other arrays.  **Arrays** |
| **9.2.5 Subtraction involving two 2-digit numbers without regrouping:** *Use the empty number line to work out 84-32. Use the ENL to explain how you worked it out. Can you work it out another way? Use the ENL to show another way how this can be worked out.*  Similarly with 96-24, 59-18, 63-21 and so on, | **9.4.5 Subtraction using visible collections:** Place out 86 sticks. *There are 86 sticks.* Write 86-20=. *If I took 20 sticks away how many would be left? Use the sticks to see of you were correct.* Complete subtraction sentence.  Similarly with 89-28, 62-34, 70-25, 96-37, and so on  **Lollipop Sticks** |  | **9.6.5 Combining two sets of equal groups:** Briefly display then screen 5 red 2-dot cards*. Here are 5 red 2-dot cards.* Briefly display then screen 2 green 2-dot cards. *Here are 2 green 2-dot cards. How many 2 dot cards are there altogether? How many dots are there altogether?*  Similarly with x-dot cards  **2,3,4, 5 Dot Cards** |
| **9.1.5 Counting by 100s off the hundred and off the decade:** Place out x- 10 strips and a y-strip. *How many dots are there?* Place a screen over the strips. Place out a 100 square and place it under the screen. *How many dots are there now?* Place out another 100 square and place it under the screen. *How many dots are there now?*  Place out x- 100-square, y 10-strips and a z-strip. *How many dots are there?* Place a screen over the squares and strips. Remove and display one 100-square. *How many dots are there now?* Remove and display one 100-square. *How many dots are there now?*  **100 Squares, 10 strips and 1 – 9 strips** | **9.2.6 Subtraction involving two 2-digit numbers with regrouping:** Posesubtraction problems on the ENL involving 84-25. *Use the ENL to show how you worked this out. Can you work it out another way using the empty number line?*  Similarly with 71-29, 80-18, 70-17, 63-26 and so on. | **9.3.4 - 3- Digit Numbers in non-canonical forms: hundreds and tens**: Place 2 hundreds and 13 tens under the screen. *This time I have 330 altogether, and there are 2 hundreds. How many tens are there? Check to see if you are correct.*  Similarly with 2 hundreds and 23 tens, 6 hundreds and 21 tens, and so on  Place 2 hundreds and 31 tens under the screen*. This time I have 510 altogether and there are 2 hundreds. How many tens are there? Check to see if you are correct.*  Similarly with 1 hundred and 35 tens, 6 hundreds and 25 tens and so on.  Place 7 hundreds and 4 tens under the screen*. This time I have 740 altogether. If I have 5 hundreds. How many tens are there? What if I had 4 hundreds? 2 hundreds?* And so on.  Place 6 hundreds and 25 tens under the screen. *This time I have 6 hundreds and 25 tens. How many altogether? Check to see if you are correct.*  Similarly 1 hundred and 25 tens, 4 hundreds and 15 tens, and so on.  **Lollipop Sticks** | **9.4.6 Subtraction using screened collections:** Briefly display and then screen 38 sticks. Write 38-22=. *There are 38 sticks and I am going to take away 22 sticks. How many sticks would be left?* Write the child’s answer on to the number sentence. *Use the sticks to see if you are correct.*  Similarly with 87-20, 45-14, 72-28 94-37 and so on.  **Lollipop Sticks** |  | **9.6.6 Partitioning Arrays:** Place out a 5x6 partitioned array card. (Partitioned into 3x6 (green) and 2x6 (red) on reverse side) with the non-partitioned side turned up. *How many rows are there? How many columns are there?* Turn the card over. *How many red rows are there? How many green rows are there? How many rows altogether? We can say 3 sixes and 2 sixes make 5 sixes. Or 5 sixes are the same as 2 sixes and 3 sixes.*  Similarly using other partitioned arrays.  **Partitioned Arrays** |
| **9.2.7 Missing addend tasks involving two 2-digit numbers**: *Here are two numbers on the ENL 44 and 66. Can you start at 44 and get to 66? How far is it from 44 to 66? Use the ENL to show how you worked it out. Can you work it out another way?*  *Use the same method to work out 75-51. Start from 51 and go to 75. Use the ENL to show how you worked it out. Can you work it out another way?*  *Use the same method to work out 82-66. Start from 66 and go to 82. Use the ENL to show how you worked it out. Can you work it out another way? And so on* |  |  |  |
| **9.1.6 Counting by 10s beyond 100 off the decade:** Place out x- 100-square, y 10-strips and a z-strip. *How many dots are there?* Place a screen over the squares and strips. Place out a 10-strip and place it under the screen. *How many dots are there now?* Place out another 10-strip and place it under the screen. *How many dots are there now?*  Place out x- 100-squares, y 10-strips and a z-strip. *How many dots are there?* Place a screen over the squares and strips. Remove and display a 10-strip from under the screen. *How many dots are there now?* Remove and display another 10-strip from under the screen. *How many dots are there now?*  **100 Squares, 10 strips and 1 – 9 strips** | **9.3.5 - 3-Digit Numbers in non-canonical Forms: Hundreds, Tens and Ones:** Place out 4 hundreds, 15 tens and 13 ones. *This time I have 4 hundreds, 15 tens and 13 ones. How many altogether?*  Similarly with 2 hundreds, 13 tens and 12 ones, and so on.  Place 4 hundreds, 5 tens and 6 ones under the screen. *This time I have 456. If there are 3 hundreds, how many tens and ones could there be?*  Similarly with 8 hundreds, 1 ten and 2 ones, and so on.  **Lollipop Sticks** |  |  |  |