



Mathematics Rubric: Updated June 2021 S.Thornton  
This rubric details the **Learning Outcomes** for Math lessons.



In all math lessons, teachers plan engaging lessons with the aim that pupils:

- master skills in maths which they are then able to apply to a range of contexts within the school and home context
- embed their new skills and understanding to a range of contexts; thus supporting application and progress in learning
- acquire core mathematical skills to support their independence as they progress through the school; such as telling the time, using money and counting.
- are able to apply their understanding to the world of work; supporting them as a young adult when they leave school.

These support and ensure that the following National Curriculum aims are consistently met.

**NATIONAL CURRICULUM AIMS (2014)**

1. become **fluent** in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate written algorithms and mental methods, underpinned by mathematical concepts
2. can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
3. can **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

Mathematical topic areas covered in this document are:

1	<b><u>Number</u></b> <ul style="list-style-type: none"><li>- Number and place value</li><li>- Addition and subtraction</li><li>- Multiplication and division</li><li>- Fractions</li></ul>
2	<b><u>Algebra (Early skills)</u></b> <ul style="list-style-type: none"><li>- Patterns</li><li>- Number sentences</li></ul>
3	<b><u>Ratio &amp; proportion (Early skills)</u></b> <ul style="list-style-type: none"><li>- Size</li><li>- Fractions</li><li>- Capacity</li></ul>
4	<b><u>Measurement</u></b> <ul style="list-style-type: none"><li>- Size, length, weight and capacity</li><li>- Time</li><li>- Money</li></ul>
5	<b><u>Geometry</u></b> <ul style="list-style-type: none"><li>- Shape</li><li>- Position and direction</li></ul>
6	<b><u>Statistics</u></b>

# 1. Number: Number and place value

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<b><u>Subject specific knowledge</u></b>  <b>What do pupils need to know?</b>	<p><u>To know</u> numbers to 5 inc. their name and shape</p> <p><u>To know</u> the order of numbers to 5</p> <p><u>To know</u> to only touch each object once as they count</p> <p><u>To know</u> re-arranging objects does not change the quantity</p> <p><u>To know</u> the last number counted represents the total number of objects</p>	<p><u>To know</u> numbers to 10 inc. their name and shape (then numbers to 20 - PS8)</p> <p><u>To know</u> the order of numbers to 10 (then numbers to 20 - PS8)</p> <p><u>To know</u> one more and one less of a given number 1-20</p> <p><u>To know</u> ordinal numbers 1<sup>st</sup> 2<sup>nd</sup> and 3<sup>rd</sup></p>	<p><u>To know</u> the order of numbers 1-20</p> <p><u>To know</u> key words 'more' and 'less'</p> <p><u>To know</u> one more and one less of a given number 1-20</p> <p><u>To know</u> which direction to move along the number line to find one more and one less of a number</p>	<p><u>To know</u> numbers 1-100 including their name and shape</p> <p><u>To know</u> 2s, 5s and 10s times tables; counting on and knowing their corresponding multiplication number sentences</p> <p><u>To know</u> and use the language 'equal to, more than and less than (fewer) correctly</p>	<p><u>To know</u> 3s, 4s and 6s times tables; counting on and their corresponding multiplication number sentence..</p> <p><u>To know</u> how many tens and ones a 2-digit number has.</p> <p><u>To know</u> comparative symbols: &lt; = and &gt;</p>	<p><u>To know</u> 7, 8, 50 and 100 times tables.</p> <p><u>To know</u> 10 or 100 more and less than a given number; knowing to use partitioning method or times tables</p> <p><u>To know</u> and identify any 3 digit/4-digit number.</p> <p><u>To know</u> how many hundreds tens and ones are needed for a 3-digit number <b>HTO</b></p> <p><u>To know</u> how many thousands, hundreds ,tens and ones are needed for a 4-digit number <b>ThHTO</b></p>

<u>Subject specific skills</u>	<u>Is able to rote count to 5</u>	<u>Is able to count to 10 fluently (then to 20)</u>	<u>Is able to read and write numerals to 100</u>	<u>Is able to count to 100</u>	<u>Is able to count in 3s, 4s and 5s starting from 0</u>	<u>Is able to count 7, 8, 50 and 100 times</u>
What do pupils need to be able to do?	<p>fluently</p> <p><u>Is able to</u> count given quantities to 5</p> <p><u>Is able to</u> count on a quantity asked for to 5</p> <p><u>Is able to</u> find numbers to 5</p> <p><u>Is able to</u> represent numbers to 5 using objects or fingers</p> <p><u>Is able to</u> write numbers to 5</p>	<p><u>Is able to</u> identify any mistakes when counting or recognise a missing number</p> <p><u>Is able to</u> order a full set of numbers to 10 (then 20)</p> <p><u>Is able to</u> order a random set of numbers to 10 e.g. 2-6-10 (then to 20)</p> <p><u>Is able to</u> state the order of objects in a range of scenarios e.g. I came 1<sup>st</sup> in the race</p>	<p>20</p> <p><u>Is able to</u> represent numbers using quantity of objects</p> <p><u>Is able to</u> move forwards and backwards along a number line</p>	<p><u>Is able to</u> count forwards and backwards from any given number</p> <p><u>Is able to</u> read and write any numeral 1-100</p> <p><u>Is able to</u> count in multiples of 2s, 5s, and 10s</p>	<p>from 0.</p> <p><u>Is able to</u> partition tens and ones in a 2 digit number. <b>TO</b></p> <p><u>Is able to</u> count forwards and backwards in 10s from any number</p> <p><u>Is able to</u> compare and order numbers 0-100 using: &lt; &gt; = symbols</p>	<p>tables.</p> <p><u>Is able to</u> count 10 or 100 more and less than a given number.</p> <p><u>Is able to</u> read and write numbers to 1000 (including words)</p> <p><u>Is able to</u> compare and order numbers 3-4 digit numbers using words and mathematical symbols</p>
<u>Suggested teaching activities</u> How should I teach this?	<p>Counting songs</p> <p>Counting stories</p> <p>Passing objects around the classroom</p> <p>Collecting up to 2 leaves/fruit/veg</p> <p>Count number of coloured balls</p>	<p>counting songs/stories</p> <p>Numicon number lines</p> <p>Ordering number cards</p> <p>Collecting correct number of objects/leaves/fruit/veg</p> <p>Counting food harvested/grown on plant</p>	<p>Numicon number lines</p> <p>Number flashcards</p> <p>Write numbers in foam/sand/gloop</p> <p>Collecting correct number of objects/leaves/fruit/veg</p>	<p>Number square - find the number game</p> <p>Count on using fingers (large number in head and count on small number using fingers)</p> <p>Timetable songs/stories</p> <p>Counting wheels on number of bikes (x2) representing</p>	<p>Counting wheels on bike (x2) lights on traffic light (x3) or wheels on car (x4) - visual representation of timetables</p> <p>Number squares to count on and backwards in 10s and find patterns</p> <p>Overlapping partition cards</p> <p>ITP partitioning (google)</p>	

		Count number of squares/triangles		times tables visually	Crocodile teeth for < > and = symbols	
		gles in the room		Give a colour / shape a specific number e.g. 2 = green .... Count up in 2s for number of green balls found- link to multiples	Count crop from two different patches/bushes/plant s. Decide which has more/less using '<' and '>' symbols Count down timer in 10s from given number to find object in the room - competition	

## 1. Number: Addition and subtraction

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
<b><u>Subject specific knowledge</u></b>	<u>To know</u> and be familiar with the word 'add'	<u>To know</u> symbols: +, - & =,  <u>To know</u> to count altogether / how many left <b>after</b> a calculation using concrete resources  <u>To know</u> to count on from first number being added (not starting from the beginning)  <u>To know</u> to count on from the largest number being added (for efficiency)	<u>To know</u> what a number bond is  <u>To know</u> and recall all number bonds to 10  <u>To know</u> what strategy to use to calculate a missing number bond. e.g. $7 + ? = 10$	<u>To know</u> and recall all number bonds to 20  <u>To know</u> how to use the counting on method (for either addition or subtraction) e.g. $11 + 7 = 12, 13, 14, 15, 16, 17, 18$  Or $21 - 19 = 20, 21 (=2)$  <u>To know</u> how to use the counting backwards method for subtraction	<u>To know</u> addition of numbers can be done in any order  <u>To know</u> the inverse of addition is subtraction and vice versa	To add and subtract numbers mentally including: 3-digit numbers and ones, 3-digit number and tens, 3-digit number and hundreds e.g. $514 + 200$  Use formal written methods for addition and subtraction of 3 digit numbers <b>HTO</b>  To be able to estimate calculations
<b><u>What do pupils need to know?</u></b>	<u>To know</u> 'add' means the same as 'more'  <u>To know</u> and be familiar with the word 'take'  <u>To know</u> and be familiar with the word 'subtract'  <u>To know</u> 'subtract/take' means the same as 'less'					

	To be familiar with appearance of symbols + and -			To know which strategy to use to calculate an addition or subtraction number sentence and which is the most efficient.		operations to check answers  To solve problems including: missing number, number facts and place value
<b><u>Subject specific skills</u></b> <b>What do pupils need to be able to do?</b>	<p><u>Is able to</u> connect (add) cubes to a tower</p> <p><u>Is able to</u> take off (subtract) cubes from a tower</p> <p><u>Is able to</u> place more items onto a pile</p> <p><u>Is able to</u> remove items from a pile</p> <p><u>Is able to</u> pick up numerous objects when asked for 2</p>	<p><u>Is able to</u> use concrete resources, to add two single digit numbers</p> <p><u>Is able to</u> use language: add, subtract, more, less, altogether</p> <p><u>Is able to</u> count on to calculate addition of two single digits</p> <p><u>Is able to</u> remove an and objects and count how many now to 10</p> <p><u>Is able to</u> read an addition / subtraction number sentence</p> <p><u>Is able to</u> represent a calculation using a</p>	<p><u>Is able to</u> read and write number sentence using the correct symbols (+, - and =)</p> <p><u>Is able to</u> represent number bonds to 10 using a variety of concrete resources.</p> <p><u>Is able to</u> add and subtract one digits numbers from 1-2 digit number to 20</p>	<p><u>Is able to</u> represent number bonds to 20</p> <p><u>Is able to</u> add and subtract 1-2 digit numbers from 1-2 digit numbers to 20 including 0</p> <p><u>Is able to</u> solve one step problems in number sentences e.g. <math>7 = 9 - ?</math></p> <p><u>Is able to</u> solve one step worded problems</p>	<p><u>Is able to</u> add and subtract: - 1digit from 2digit or 2digit from 2digit e.g.: <math>63 - 9 =</math> <math>75 + 21 =</math></p> <p><u>Is able to</u> solve simple problems using mental arithmetic</p> <p><u>Is able to</u> solve addition and subtraction problems using pictorial / jotting methods independently</p> <p><u>Is able to</u> use knowledge inverse of addition and subtraction to</p>	<p><u>Is able to</u> add and subtract numbers mentally including: 3-digit numbers and ones, 3-digit number and tens, 3-digit number and hundreds e.g. <math>514 + 200</math></p> <p><u>Is able to</u> use formal written methods for addition and subtraction of 3 digit numbers <b>HTO</b></p> <p><u>Is able to</u> estimate calculations</p> <p><u>Is able to</u> use inverse operations to check answers</p>

		simple addition/subtraction			find missing numbers in	Is able to solve problems
		number sentence. (P8-1C)			number sentence	including: missing number, number facts and place value
<b><u>Suggested teaching activities</u></b> <b>How should I teach this?</b>	<p>Make towers by adding bricks together</p> <p>Destroy towers by taking away bricks</p> <p>Collect MORE leaves/fruit/veg/soil from outside</p> <p>Placing more items into showing trolley</p> <p>Taking items out of a showing trolley</p> <p>"add" or "subtract" balls into ball suction tube</p>	<p>Adding objects together (can be done using leaves/fruit/veg)</p> <p>Use addition box to add objects</p> <p>Add numicon pieces together</p> <p>Use fingers to count on</p> <p>Frog jumps on number line (on floor or numicon number line)</p> <p>Subtraction dentist teeth</p> <p>Subtract number of leaves/veg/fruit from a patch</p>	<p>Numberbond rainbow</p> <p>Numicon pieces to represent number bonds to 10 (photocopy 10 piece for underneath)</p> <p>Bead strings for number bonds - can make bead string using large seeds</p> <p>Subtract objects</p> <p>Frog jumps backwards on numberline</p> <p>Create number sentences with shape blocks</p>	<p>Numicon numberbonds to 20</p> <p>Numicon addition/subtraction</p> <p>Frog jumps on number line</p> <p>Create number bonds with shape blocks</p>		

## 1. Number: Multiplication and division

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
<b><u>Subject specific knowledge</u></b>	To know the word 'share' and respond appropriately.	<p>To know words 'share', 'half' and 'equal'</p> <p>To know method 'one for you, one for me'</p>	To know the word 'double' and connect to multiplying by 2.	<p>To know times tables 2s and 10s</p> <p>To know what an 'array' is and how to use it.</p>	To know and use multiplication facts for 2,5 and 10	To know and recall multiplication and division facts for 3, 4 and 8

What do pupils need to know?		<u>To know</u> sharing needs to be equal and 'fair'	<u>To know</u> doubles to the total of 20 and		<u>To know</u> the multiplication of 2	<u>To know</u> how to use formal written
		<u>To know</u> cutting objects in half need to be in equal pieces  <u>To know</u> the word 'double' and connect to repeated addition.  <u>To know</u> doubles to the total of 10 and recall confidently	recall confidently  <u>To know</u> key words : multiply and divide  <u>To know</u> symbols: $\times$ and $\div$  <u>To know</u> multiplying is linked to repeated addition  <u>To know</u> division is linked to sharing		numbers can be done in any order  <u>To know</u> what a factor and multiple is	methods for multiplying 2-digit numbers
<u>Subject specific skills</u>  What do pupils need to be able to do?	<u>Is able to</u> pass / share objects amongst peers in response to being asked to 'share'  <u>Is beginning to</u> group objects in 2s and 3s	<u>Is able to</u> use vocabulary: share and half in structured and unstructured conversations  <u>Is able to</u> share objects between two people using correct method.  <u>Is able to</u> double quantities to the sum of 10 (first using concrete resources, then jottings and then recall.	<u>Is able to</u> double quantities to the sum of 20 (first using concrete resources, then jottings and then recall.  <u>Is able to</u> represent the multiplication of 2s and 5s using concrete objects  <u>Is able to</u> represent simple multiplication as a number sentence  <u>Is able to</u> represent simple division as a number sentence	<u>Is able to</u> represent the multiplication of 2, 5 and 10 using arrays  <u>Is able to</u> explore number patterns for multiplication (number square etc)  <u>Is able to</u> share any given amount equally using concrete objects  <u>Is beginning to</u> solve one step division and multiplication problems using arrays with support from an adult	<u>Is able to</u> calculate and write multiplication number sentences using $\times$ , $\div$ and $=$  <u>Is able to</u> solve contextual multiplication and division problems using a range of resources	<u>Is able to</u> use an array to give creative multiplication or division number sentences for a multiple  <u>Is able to</u> multiply 2-digit numbers by 1-digit numbers using facts they already know  <u>Is able to</u> solve problems involving multiplication and division; including scaling

			Is able to represent division by sharing			
			objects in 2s			
<b><u>Suggested teaching activities</u></b>	Have sweets/classroom objects to share during a party/celebration - passing to peers in the room	Cut things grown/bought into two	Share food onto set number of plates/people	Multiplication songs Arrays Number square - colouring squares to represent patterns	Arrays Number square - colouring squares to represent patterns	
<b>How should I teach this?</b>	Share things grown from allotment Share use of ball suction tube with turn taking	Share food onto set number of plates/people		Share food/things grown between people equally Cut food into $\frac{1}{4}$ Give colours / shape a specific value. Catch in a net and calculate e.g. if green = 2 and 5 were 'caught' = 10	Share food/things grown between people equally Cut food into $\frac{1}{4}$ Give colours / shape a specific value. Catch in a net and calculate e.g. if green = 2 and 5 were 'caught' = 10	

## 1. Number: Fractions

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<b><u>Subject specific knowledge</u></b>	<u>To know</u> cutting an object creates more smaller pieces	<u>To know</u> when two pieces haven't been cut fairly - equally	<u>To know</u> key word: fraction	<u>To know</u> representations of $\frac{1}{4}$ via images, resources and words (quarter)	<u>To know</u> half of numbers to 20	<u>To know</u> and read all fractions represented as numbers
<b>What do pupils need to know?</b>		<u>To know</u> where to cut / draw a line to	<u>To know</u> representations of $\frac{1}{2}$ via images, resources and words (half)	<u>To know</u> half of even numbers to 10	<u>To know</u> representations of $\frac{1}{3}$ and $\frac{1}{8}$ via images, resources	<u>To know</u> key word: denominator



		represent 2 equal parts halves		To know the use	and words (third/ eighths)	To know the
		To know key words: half, equal, same and fair.		'sharing model' to find $\frac{1}{4}$ of numbers/objects e.g. 4 plates, share 16 apples.	To know the equivalence of $\frac{2}{8}$ and $\frac{1}{4}$	denominator represents the number of equal pieces the whole has been split into
<u>Subject specific skills</u>  What do pupils need to be able to do?	<u>Is able to experience</u> cutting food into pieces	<u>Is able to</u> roughly cut a piece of food in half  <u>Is able to</u> say why something hasn't been cut into equal pieces  <u>Is able to</u> independently use key words 'equal' and 'fair' in structured and unstructured setting e.g. play	<u>Is able to</u> recognise and name $\frac{1}{2}$ as two EQUAL parts  <u>Is able to</u> correctly use the terminology 'Equal pieces'  <u>Is able to</u> find $\frac{1}{2}$ of a shape or quantity	<u>Is able to</u> recognise and name $\frac{1}{4}$ and 1 of 4 equal parts  <u>Is able to</u> find $\frac{1}{4}$ of an object, shape or quantity	<u>Is able to</u> recognise, find, name and write fractions : $\frac{1}{3}$ , $\frac{1}{4}$ $\frac{2}{4}$ and $\frac{3}{4}$ of a shape/set of objects  <u>Is able to</u> calculate simple fractions of number e.g. $\frac{1}{2}$ of 6 = 3	<u>Is able to</u> count up and down in tenths by dividing an objects into 10 equal parts  <u>Is able to</u> recognise and use fractions as numbers  <u>Is able to</u> show, using diagrams, equivalent fractions with small denominators  To be able to add and subtractions with the same denominator  To be able to compare and order fractions with the same denominator
<u>Suggested teaching activities</u>	<ul style="list-style-type: none"> <li>Cut up food</li> <li>Cut up playdough</li> </ul>	<ul style="list-style-type: none"> <li>Cut up food/playdough</li> </ul>	<ul style="list-style-type: none"> <li>Fair/equal story</li> </ul>	<ul style="list-style-type: none"> <li>Cut bread into <math>\frac{1}{4}</math> (can be things grown)</li> </ul>	<ul style="list-style-type: none"> <li>Place number of pieces into a fraction of a shape e.g fit two</li> </ul>	

		<ul style="list-style-type: none"> <li>• Talk about fair - fair</li> </ul>	<ul style="list-style-type: none"> <li>• Cut shapes into half</li> </ul>	<ul style="list-style-type: none"> <li>• Cut playdough into 1 - could</li> </ul>	$\frac{1}{4}$ pieces into a half block to represent equivalent fractions
I teach this?		story	could weigh pieces to see if they are roughly equal <ul style="list-style-type: none"> <li>• Have shapes made out of playdough and cut using knife</li> </ul>	weigh pieces to see if they are roughly equal <ul style="list-style-type: none"> <li>• Connect to position and direction - quarter turns to move around the soft play room</li> </ul>	<ul style="list-style-type: none"> <li>• Fraction wall</li> <li>• Lego pieces to represent fractions and equivalent fractions</li> <li>• Connect to position and direction - quarter, half, three-quarter turns when moving around soft play area</li> </ul>

## 2. Algebra (Early skills): Patterns, number and number sentences

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<u>Subject specific knowledge</u>  What do pupils need to know?	<u>Patterns:</u>  <u>To know</u> colours within a 1-2 step pattern	<u>Patterns:</u>  <u>To know</u> colours within a 2-3 step pattern  <u>To know</u> sequence of colours in a 2-step pattern e.g. blue, green, blue, green  <u>Number:</u> <u>To know</u> numbers 1-10 <u>To know</u> numbers 1-20	<u>Number:</u> <u>To know</u> 1 more and 1 less of numbers 1-20  <u>Number:</u> <u>Addition/subtraction</u>  <u>To know</u> and recall all number bonds to 10  <u>To know</u> +, - and = symbols	<u>Number:</u> <u>Addition/subtraction</u>  <u>To know</u> and recall all number bonds to 20  To know the relationship between + and -  <u>To know</u> +, - and = symbols	<u>Number:</u> <u>Addition/subtraction</u>  <u>To know</u> all 2-digit numbers inc. their order  <u>To know</u> the relationship between + and -	<u>Number:</u> <u>Addition/subtraction</u>  <u>To know</u> all 3-4 digit numbers inc. their order  <u>To know</u> the relationship between + and -

<u>Subject specific</u>	<u>Patterns:</u>	<u>Patterns:</u>	<u>Number:</u> <u>To be able to fill in missing</u>	<u>Number:</u> <u>Addition/subtraction</u>	<u>Number:</u> <u>Addition/subtraction</u>	<u>Number:</u> <u>Addition/subtraction</u>
<u>skills</u>  <b>What do pupils need to be able to do?</b>	<u>Is able to</u> continue missing colours from a 1-step pattern e.g. blue, blue, blue, blue, ? , blue ...  <u>Is able to</u> <u>copy</u> a 2-step pattern including missing colours	<u>Is able to</u> <u>continue</u> missing colours from a 2-step pattern e.g. blue, green, blue, green, ? , green ...  <u>Number:</u> <u>Is able to</u> order numbers 1-10, filling in missing numbers e.g. 1,2,3,4,5,6 __, 8, 9, __  <u>Is able to</u> order numbers 1-20, filling in missing numbers e.g. 14, 15, __, 17, 18, __, 20	numbers in a number sequence e.g. 14, __, 16, __, 18, __, 20  <u>Number:</u> <u>Addition/subtraction</u>  <u>Is able</u> to identify missing numbers to complete a number sentence e.g. $8 + ? = 10$  <u>Is able</u> to complete a + or - number sentence (to 10) by replacing letters with numbers e.g. A=2 B=6 C = 5  $2 + A = ?$ $6 - C = ?$	<u>Is able</u> to identify missing numbers to complete a number sentence e.g. $18 + ? = 20$  <u>Is able</u> to apply understanding of inverse operations to identify missing numbers in a subtraction number sentence e.g. $20 - ? = 18$  <u>Is able</u> to complete a + or - number sentence (to 20) by replacing letters with numbers e.g. A=8 B=10 C = 15  $6 + A = ?$ $18 - C = ?$	<u>ion</u>  <u>Is able</u> to identify missing numbers to complete a number sentence e.g. $88 + ? = 100$  <u>Is able</u> to apply understanding of inverse operations to identify missing numbers in a subtraction number sentence e.g. $100 - ? = 88$  <u>Is able</u> to complete a + or - number sentence (to 100) by replacing letters with numbers e.g. A=50 B=10 C = 23  $A + 20 = ?$ $A + B = ?$ $A + B + C = ?$	<u>ion</u>  <u>Is able</u> to identify missing numbers to complete a number sentence e.g. $485 + ? = 500$  <u>Is able</u> to apply understanding of inverse operations to identify missing numbers in a subtraction number sentence e.g. $500 - ? = 485$  <u>Is able</u> to complete a + or - number sentence (to 1000) by replacing letters with numbers e.g. A=500 B=100 C = 230  $A + 100 = ?$ $A + B = ?$ $A + B + C = ?$

<b><u>Suggested teaching activities</u></b>	-printing using paint logs blocks	-printing using paint logs blocks	-Use Numicon to support	-Using Numicon and 20 mats	-operation triangle (relationship)	-operation triangle (relationship)
<b><u>activities</u></b>	-threading coloured beads	-threading coloured beads	understanding of number bonds including missing numbers in number sentences	-Operation triangle	between operations)	between operations)
<b>How should I teach this?</b>		-Number songs and using number lines	-Using base ten sets and counters to calculate number bonds			

### 3. Ratio & proportion: Early skills linked to fractions, size and capacity

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<b><u>Subject specific knowledge</u></b>	<b><u>Proportionation</u></b> To know key words big/small and bigger/smaller	<b><u>Proportionation</u></b> To know comparative key words: bigger/smaller, longer/shorter & taller/shorter	<b><u>Proportionation</u></b> To know comparative key words: bigger/smaller, longer/shorter & taller/shorter	<b><u>Proportionation</u></b> To know the key word 'double'	<b><u>Proportionation</u></b> To know fractions $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{3}{4}$ , $\frac{1}{3}$ and $\frac{1}{8}$	<b><u>Proportionation</u></b> To know all fractions
<b>What do pupils need to know?</b>	To know key words more/less  <b><u>Ratio</u></b> To know and count to 5  To know the key word fill	<b><u>Ratio</u></b> To know and count to 10 To know how to accurately fill a measuring tool e.g. cup	To know the key word 'double'  <b><u>Ratio</u></b>  To be familiar with the word 'part'	To know fractions $\frac{1}{2}$ and $\frac{1}{4}$ , $\frac{3}{4}$ :		
<b><u>Subject specific skills</u></b>	<b><u>Proportionation</u></b> Is able to identify objects as big/small or bigger/smaller	<b><u>Proportionation</u></b> Is able to order objects by length and	<b><u>Proportionation</u></b> Is able to alter the size of an object to make it	<b><u>Proportionation</u></b> Is able to identify the fraction of a	<b><u>Proportionation</u></b> Is able to identify the fraction of a	<b><u>Proportionation</u></b> Is able to identify the fraction of a

What do pupils need to be able to do?	Is able to identify	size inc. comparative language	bigger/smaller or longer/shorter	shape that has been shaded	shape that has been shaded	shape that has been shaded
	when there is more or less of a quantity of objects  <b>Ratio</b> Is able to follow verbal instructions to create a mixture e.g. 1 cup of milk and 1 cup of flour	Is able to identify and describe the size of objects using comparative language  <b>Ratio</b> Is able to follow verbal instructions to create a mixture e.g. 1 cup of cordial and 5 cups of water.	Is able to double the size of a shape  Is able to double quantities up the total of 20  <b>Ratio</b> Is able to follow less detailed instructions involving ratio such as 1 part ____ and 8 parts ____ in a range of scenarios e.g. using coloured lego blocks / figurines / liquids	Is able to shade the correct fraction of a shape requested  <b>Ratio</b> Is able to verbalise the ratio of objects used in play e.g. in a block of lego in a tower: 1 red : 7 blue.	Is able to compare the range of shaded fractions of shapes  <b>Ratio</b> Is able to represent ratio of objects / mixtures e.g. 1 red block and 6 blue blocks. → 1:6 1 flour and 4 water → 1:4	<b>Ratio</b> Is beginning to apply understanding of simple ratios for bigger quantities e.g. for every 1 cup of cordial, 4 cups of water → 2 cups cordial, 8 cups water
<b>Suggested teaching activities</b>  <b>How should I teach this?</b>	-comparing objects in the classroom / mathematics figurines / 2d shapes / 3d shapes -Creating mixtures (link to science)	-comparing objects in the classroom / mathematics figurines / 2d shapes / 3d shapes -Creating mixtures (link to science)	-Building lego towers -printing to creative double the size of 2d shapes -using Numicon to double numbers but also shape	-Lego towers, - creating smoothies -shading shapes	-Lego towers -making mixtures -making drinks / smoothies -shading shapes	-Lego towers -making mixtures -making drinks / smoothies -shading shapes

#### 4. Measurement: Length, Weight and capacity

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
<b>Subject specific knowledge</b>	To know key words: big/small tall/short	To know key words: heavy/light  To know the size of object does not	To know they can measure lengths using cubes, objects or hand-spans	To know a ruler measures length  To know how to use a ruler correctly: start	To know which is the correct standard unit for a measurement	To know how to break down a worded problem related to measure

What do pupils need to know?	To know to place objects next to each other to accurately compare inc. from same starting point	always determine the weight eg. bigger does not always mean heavier	To know what a balance scale is and how to use it  To know the side of the balance then touches the table = heaviest and the side that lifts = lightest	at zero and not end of ruler, then see where the object ends  To know rulers only accurately measure straight objects - not curved.  To know cm and mm are units to measure length  To know 10 mm = 1cm  To know you can measure liquids using cups and know each cup must be full for accuracy.  To know a measuring jug measures liquids  To know liquid is measured in ml and l  To know how to use a measuring jug accurately: go to eye level and pour slowly.	e.g. mm,cm,m,g,kg etc.  To know what measuring tool is needed to measure something specific	
<u>Subject specific skills</u>	<u>Is able to</u> find big and small objects on request.	<u>Is able to</u> use every day language to talk about size in context and through play:	<u>Is able to</u> measure lengths using cubes/objects/ Hand-spans	<u>Is able to</u> measure the perimeter of 2d shapes (cm)	<u>Is able to</u> use standardised measuring tools to measure length, capacity or weight	<u>Is able to</u> solve worded problems related to measure.

What do pupils need to be able to do?	Experience	Weight, capacity, distance, time, money.	Tools to use	Is able to compare and describe lengths and heights using 'double/half' vocabulary		
	<p>by placing objects next to each other.</p> <p><u>Is able to</u> indicate which of two saucepans is the bigger.</p> <p>Experience comparing sizes by placing objects next to each other</p>	<p><u>Is beginning to</u> compare quantities of object e.g. knows whether they have more or less biscuits than their friend</p> <p><u>Is able to</u> compare and describe lengths and heights using 'long/short, tall short' vocabulary</p> <p>Is beginning to compare and describe weights of objects using heavy/light</p>	<p>balance scale to aid comparative vocabulary independently</p>	<p><u>Is beginning to</u> use standardised measuring tools to measure length e.g. ruler (start with whole cm, then move onto cm &amp; mm combined)</p> <p><u>Is able to</u> compare and describe capacity using 'half full/quarter full/empty' vocabulary</p> <p><u>Is able to</u> solve practical problems for length, weight and capacity.</p> <p><u>Is able to</u> count out number of cups taken to fill a container</p> <p><u>Is beginning to</u> use a measuring jug by reading the numbers in ml and attempting to measure this out with some accuracy</p>	<p><u>Is able to</u> compare and order measurements (cm, ml, g etc)</p>	

<u>Suggested teaching activities</u>	• Line up toys according to size	• Role play situations with comparative language e.g. shop. Please can I have a long piece of string?	• Ordering heights of children in the class	• Measure with ruler/me wheel	• Add measurements	
<b>How should I teach this?</b>	<ul style="list-style-type: none"> <li>• Measurement stories</li> <li>• Compare familiar objects one small and one big</li> </ul>	<ul style="list-style-type: none"> <li>• Order the length of carrots grown when dug out</li> </ul> <p>Compare heights of square block / steps in right hand corner of soft play room</p>	<ul style="list-style-type: none"> <li>• Measure using hand spans/bricks</li> <li>• Balance weights / hold weights and compare</li> <li>• Compare weight of two of the same food grown</li> <li>• Use certain amount of cups of water to water crops daily</li> <li>• Measure marked out areas of soft play using hand spans</li> </ul> <p>Compare weight of chn using sea-saw soft play piece</p>	<ul style="list-style-type: none"> <li>• Have competition of how far chn can run in 30 secs and measure etc</li> <li>• Fill containers with water</li> <li>• how many cups to fill this bowl</li> <li>• Measure liquids/weights according to recipe</li> <li>• Measure water needed for crops daily</li> <li>• Measure marked out areas of soft play using m and cm</li> </ul>	<ul style="list-style-type: none"> <li>• Measure liquid together and check with addition method e.g. poor 450ml with 200ml - answer should be 650ml</li> <li>• Measure water that has evaporated over the course of a day (link with science and subtraction)</li> <li>• Measure out all recipe components</li> </ul> <p>Measure area and perimeter of marked out areas of soft play</p>	



## 2. Measurement: Time

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<u>Subject specific knowledge</u>  What do pupils need to know?	<u>To know</u> the word 'wait'.  <u>To know</u> the order of morning and night.	<u>To know</u> key words: before, after next, today, yesterday, tomorrow, morning, afternoon and evening  <u>To know</u> which of the above key words links to past, present or future events.	<u>To know</u> the names of all days of the week  <u>To know</u> Mon-Friday are wee days  <u>To know</u> Saturday-Sunday and weekend dates  Note: going from vocabulary/language they are used to in the UK  <u>To know</u> all seasons  <u>To know</u> all months in the correct order	<u>To know</u> key words: 'hour, minute and second'.  <u>To know</u> clocks / watches tell the time  <u>To know</u> clocks have two 'hands' and know which represent minutes and hours  <u>To know</u> the minute hand on '12' = o'clock  <u>To know</u> the minute hand on '6' = half past	<u>To know</u> the number of minutes in an hour and hours in a day  <u>To know</u> left of the clock = past and right = to (towards the hour)  <u>To know</u> the minute hand on '3' = quarter past and '9' = quarter to  <u>To know</u> to count in 5s around the clock e.g. 1 = 5 past, 2 = 10 past - stopping at half past  <u>To know</u> to continue to use key phrased : o'clock, quarter past, half past and quarter to even when telling the time to 5 minute intervals	<u>To know</u> and use vocabulary: AM, PM, morning, after noon and night  <u>To know</u> the number of seconds in a minute, days in a month, days in a year inc. leap year

<u>Subject specific skills</u>	<u>Is able to wait for an activity / turn</u>	<u>Is able to sequence events in</u>	<u>Is able to name days of the week in order</u>	<u>Is able to read clock times</u>	<u>Is able to compare and sequence</u>	<u>Is able to tell and write the time</u>
<b>What do pupils need to be able to do?</b>	Is beginning to / able to sequence event images from morning to night.	chronological order using language: before, after, next, today, yesterday, tomorrow, morning, afternoon, evening'  <u>Is able to</u> describe and compare events and activities using 'quicker, slower, earlier' vocabulary	<u>Is able to</u> say days that come before or after another  <u>Is able to</u> identify key events for specific days  <u>Is beginning to/ able to</u> name months and seasons of the year in the correct order.  <u>Is beginning to / able to</u> link seasons to weather and month to seasons	<u>Is able to</u> read half past times  <u>Is able to</u> read a mixture of o'clock and half past times (flicking from one to another easily)	intervals of time  <u>Is able to</u> read and write the times for quarter <b>past</b> (including drawings hands on a clock)  <u>Is able to</u> read and write the times for quarter <b>to</b> (including drawings hands on a clock)  <u>Is able to</u> read and write the times for quarter to and quarter past (including drawings hands on a clock)  <u>Is able to</u> tell and write the time to 5 minute intervals (including drawing hands on a clock)	from an analogue clock; those with roman numerals  <u>Is able to</u> estimate and read time to the nearest minute  <u>Is able to</u> compare durations of events
<b><u>Suggested teaching activities</u></b>	<ul style="list-style-type: none"> <li>Waiting for snack/dinner /turn in game</li> </ul>	<ul style="list-style-type: none"> <li>Ordering pictures of bed, brush teeth, food, school</li> </ul>	<ul style="list-style-type: none"> <li>Ordering clocks</li> <li>Physical clocks resources</li> </ul>	<ul style="list-style-type: none"> <li>Saying month and year each day as part of routine in date</li> </ul>	<ul style="list-style-type: none"> <li>Asking chn to water harvest at certain times of the day e.g. quarter to 12</li> <li>Time how long a lesson lasts</li> </ul>	

How should I teach this?	• Good morning, afternoon	• Saying day and date of each day in school routine	• Looking at clock face	• Timed competitions	• Time how long it takes them to complete a task
	<ul style="list-style-type: none"> <li>Waiting for turn to water plants</li> </ul> <p>Chn to wait for their turn to use specific equipment in soft play area</p>	<ul style="list-style-type: none"> <li>Knowing what says chn go to school</li> <li>What time is it mr wolf</li> <li>Role play making a dentist appointment etc</li> <li>Watering harvest on set day of the week</li> </ul> <p>Understanding time taken for a plant to grow-how many days</p>	<ul style="list-style-type: none"> <li>Mr wolf game</li> </ul>	<ul style="list-style-type: none"> <li>Gym - exercise for certain time</li> <li>Physical clock resources</li> <li>Drawing o clock and half past</li> <li>Watering harvest at half past time every day</li> <li>Timed competitions how many ...can you do in...? - time each other to complete circuit in soft play and compare timings using number skills</li> </ul>	<p>Finish soft play task at a specific time - children to read clock and know when to finish - know how long left</p>

## 2.Measurement: Money

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
<b><u>Subject specific knowledge</u></b>	To know and be familiar with the appearance of money	<u>To know</u> key words: pounds and pence	<u>To know</u> there is a front and back to a coin	To know 'notes' are higher in value than coins	<u>To know</u> and use the symbols (£) and (p)	<u>To know</u> to round up the total and give more money

What do pupils need to know?	To know what money is - coins are money To know different coins look different To know some coins are shiny and some are not	To know and expect change to be given in money handling contexts	To know the names of all coins		To know coins can be added to make the same value of another coin  To know more coins does not always mean more money	than needed, then wait for change
<b><u>Subject specific skills</u></b>  What do pupils need to be able to do?	To experience handling money  To experience handling money to somebody and receiving an item/object.  <u>Is able to</u> separate coins based on their colour  <u>Is able to</u> role play using money	<u>Is able to</u> use key words: pounds and pence in money role play opportunities  <u>Is able to</u> hand over any coin to 'pay' for an item  <u>Is able to</u> bring the item and a coin to the counter  <u>Is able to</u> sort coins based on colour, size and shape	To be able to name all coins when placed <u>face up</u>  To be able to name all coins when placed <u>face down</u>	Is able to order coins based on their value  Is able to name all notes  Is able to give equivalent amount for each note e.g. £5 note = 5 x pound coins	<u>Is able to</u> use correct signs £ and p independently  <u>Is able to</u> find different combination of coins for the same value e.g. 5p + 5p = 10p OR 5p + 2p + 2p + 1p = 10p  <u>Is able to</u> solve simple problems for addition and subtraction of money	<u>To know</u> sensible coins to give when rounding e.g, if something is £4.50, give a £5 note and not a £10 if you have it
<b><u>Suggested teaching activities</u></b>  How should I teach this?	<ul style="list-style-type: none"> <li>• Money hidden in sand/foam</li> <li>• Putting money in and out of a purse/wallet</li> </ul> Role playing shop	<ul style="list-style-type: none"> <li>• Link with handling data - separate coins according to colour</li> <li>• Role play shop</li> <li>• Number coin flash</li> </ul> Coin snap	<ul style="list-style-type: none"> <li>• Coin snap</li> <li>• Role play shop</li> </ul> Find me the ... coin game	<ul style="list-style-type: none"> <li>• Order game... which would you rather have?</li> </ul> Role play shop - introduce notes and change	<ul style="list-style-type: none"> <li>• Role play shop.</li> <li>• Buy items using more than one coin - link with addition</li> <li>• Change - link with subtraction</li> </ul> Begin to link things grown in school that are used to make and sell food from school shop and café.	

### 3. Geometry: Shape

	B2 progression step 5	B2 progression step 6-8	B2NC step 1c-1b	B2NC Step 1b-2c	B2NC Step 2c-2a	B2NC Step 2a-3a
<b><u>Subject specific knowledge</u></b>  <b>What do pupils need to know?</b>	<u>To know</u> to pick up and look at a range of shapes available  <u>To know</u> to feel the whole shape  <u>To know</u> shapes go onto the peg board	<u>To know</u> that the shape is the same even when it is a different colour/size from the original  <u>To know</u> the shape is the same even when it is turned  <u>To know</u> a triangle by their three representations (do not need to know mathematical names - just that they are all triangles)  <u>To know</u> the name of 2D shapes: circle, square, rectangle, triangle and oval	<u>To know</u> size, colour and position do not alter the name of the shape  <u>To know</u> the word 'dimensional'  <u>To know</u> what a shape or 2D or 3D  <u>To know</u> 3D shapes: sphere, cuboid, cube and pyramid.	<u>To know</u> and name 3D shapes: sphere, cuboid, cube and pyramid.  <u>To know</u> which shapes are 3D without visuals	<u>To know</u> properties of all 2D shapes  <u>To know</u> where lines of symmetry are for 2D shapes  <u>To know</u> properties of all 3D shapes	<u>To know</u> to use a ruler to draw shapes  <u>To know</u> what a right angle is  <u>To know</u> angles: acute and obtuse
<b><u>Subject specific skills</u></b>	<u>Is able to</u> experience and handle different shapes	<u>Is able to</u> find physical shapes that are the same.	<u>Is able to</u> find 2d shapes in their environment	<u>To be able to</u> relate images to 3D shapes	<u>Is able to</u> identify and find properties of 2d shapes; including	<u>Is able to</u> draw 2d shapes accurately

What do pupils need to be able to do?	Is able to experience drawing around a shape	Is able to separate 2d and 3d shapes	Is able to name 3D shapes from a picture or symbol alone	sides and line of symmetry	Is able to create 2d shapes using pliable material
<p>shape inside a suitable space (e.g. Numicon on a pegboard)</p> <p>Is able to make marks using a shape on a page (printing)</p>	<p>shape</p> <p>Is able to name 2D shapes: Rectangles, squares, circles, triangles and ovals (P8)</p> <p>Is able to count number of sides on simple shapes</p>	<p>Is beginning to recognise and name 3D shapes: sphere, cuboid, cube and pyramid.</p>	<p>Is able to compare and sort common 2d and 3d shapes and every day objects</p>	<p>Is able to identify and describe 3d shapes; including edges, vertices and faces</p> <p>Is able to identify 2d shapes on the faces of 3d shapes</p>	<p>Is able to describe 3d shapes</p> <p>Is able to identify right angles in shapes</p> <p>Is able to be able to identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>
<p><b><u>Suggested teaching activities</u></b></p> <p><b>How should I teach this?</b></p>	<ul style="list-style-type: none"> <li>Placing shapes in a hole</li> <li>Numicon on peg boards - finding space available</li> <li>Pattern printing using shapes - link with art and colours (could use leaves/soil)</li> <li>Sensory shape in foam/sand</li> </ul>	<ul style="list-style-type: none"> <li>Shape snap</li> <li>Sensory shape in the bag</li> <li>Take photos of different shapes</li> <li>Drawing around shape - link with art and fine motor skills</li> <li>Draw around cut up fruit and veg grown to explore their shape</li> <li>Continue a pattern of two using</li> </ul>	<ul style="list-style-type: none"> <li>Describing shape in the bag/behind back to a partner game</li> <li>Take photos of different shapes in the environment</li> <li>Shape snap</li> <li>Locate a shape in the soft play area</li> </ul> <p>Continue a pattern of up to 4 using coloured balls in suction tubes of shape blocks</p>	<ul style="list-style-type: none"> <li>Print using 3d shapes - finding shape of faces</li> <li>Link orange/apples /plums etc to sphere</li> <li>Describe hidden shape to a partner - communication skills link</li> </ul> <p>Find and name 3d shapes in soft play area</p>	<ul style="list-style-type: none"> <li>Describing games</li> <li>Build with 3d shapes - link with DT</li> <li>Construct 3d shapes - link with DT</li> <li>Find right angles in the environment using card template (can be on raised beds in play area)</li> <li>Dance routine using angled turns</li> </ul> <p>Follow a map using turn and angles - link with P.E (orienteeing and geog)</p>

	<ul style="list-style-type: none"> <li>Fit balls into</li> </ul>	coloured balls			
	Continue a single colour pattern e.g. green, green, green, green	shape blocks Match shapes in the room that are different colours / sizes			

## 5. Geometry: Position and direction

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<b><u>Subject specific knowledge</u></b>  <b>What do pupils need to know?</b>	<u>To know</u> and be aware of where other people / objects are in comparison to themselves in the room. E.g. if someone is in front or behind them  <u>To know</u> where specific items live in the classroom e.g. pens and glue sticks	<u>To know</u> the meaning of quick and slow  <u>To know</u> the meaning of pull/push  <u>To know</u> key words in front and behind  <u>To know</u> to keep turning a shape / item until it fits in the box / hole	<u>To know</u> key words: forward, backward, inside, outside, underneath and ontop'.	<u>To know</u> key words: 'left, right and whole/ half /quarter turns	<u>To know</u> angles and turns: (1 turn, $\frac{1}{4}$ turn, $\frac{1}{4}$ turn etc)  <u>To know</u> their picture representation	
<b><u>Subject specific skills</u></b>	<u>Is able to</u> put rings on a peg  <u>Is able to</u> imitate circles with hand	<u>Is able to</u> move quickly and slowly on demand	<u>Is able to</u> place an object forward, backward, inside, outside, underneath and ontop'	<u>Is able to</u> describe and react to movement using 'left, right and whole/ half /quarter turns	<u>To be able to</u> order and arrange combinations of mathematical objects in	<u>To identify</u> right angles and relate these to turns (1 turn, $\frac{1}{4}$ turn, $\frac{1}{4}$ turn etc)

What do pupils need to be able to do?	Is able to pull and	Is able to place a shape in its specific hole	and react to movement using 'forward, backward, inside, outside, underneath and ontop'.		patterns and
	<p>on a peg</p> <p>Is able to look for a missing item</p> <p>Is able to put objects away in the correct place</p> <p>Is able to place objects inside a container</p>	<p>Is able to rotate a shape to fit into a specific hole</p> <p>Is able to complete a 10 piece puzzle</p> <p>Is able to place a shape on top of its double (Numicon peg pattern boards)</p>			<p>To be able to use mathematical vocabulary to describe position, direction and movement</p>
<p><b>Suggested teaching activities</b></p> <p>How should I teach this?</p>	<ul style="list-style-type: none"> <li>Doughnut ring game</li> <li>Tidy game</li> <li>Clearing up the crop area</li> </ul> <p>Planting certain plants in their areas</p>	<ul style="list-style-type: none"> <li>Pass the playdough (ask chn to pull, press, squeeze etc the material)</li> <li>Place shapes in a hole - link with Geometry</li> <li>Jigsaw puzzles</li> <li>Numicon peg board</li> <li>Planting fruit/beg in the correct place</li> </ul> <p>Move slowly or quickly around soft play area</p>	<ul style="list-style-type: none"> <li>Jigsaw puzzle</li> <li>Simple dance routine using forwards and backward commands</li> <li>Blindfold partner and guide them saying forward and backwards number of steps - link with number</li> <li>Tidy room game</li> </ul> <p>Move forwards, backwards, climb over or under in the soft</p>	<ul style="list-style-type: none"> <li>Dance routine</li> <li>Blind fold partner</li> <li>Tidy room game</li> </ul> <p>Move around maze / pathway in room using left / right vocab. Chn lead each other around room to stay away from the 'crafty crocodiles'</p>	<ul style="list-style-type: none"> <li>Dance routine</li> </ul> <p>Use fraction language for turning directions in soft play area e.g. quarter turn right then stop.</p>



## 6. Statistics

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<b><u>Subject specific knowledge</u></b>  <b>What do pupils need to know?</b>	<u>To know</u> to place things of the same colour next to each other - with a clear gap from another colour  <u>To know</u> same things go together	<u>To know</u> to line heights up to accurately sort.	<u>To know</u> to place objects into columns / squares to show categories.  <u>To know</u> to look for similarities on use, shape, size or colour	<u>To know</u> how items have been sorted.  <u>To know</u> what a pictogram is  <u>To know</u> how to read a pictogram  <u>To know</u> what a pictogram is for	<u>To know</u> what a tally is  <u>To know</u> tallies are in 5s and to cross on the 5 <sup>th</sup> stroke  <u>To know</u> what a block graph is including key features	<u>To know</u> how to read data from a range of sources  <u>To know</u> which form of data representation best suits the data they have collected
<b><u>Subject specific skills</u></b>  <b>What do pupils need to be able to do?</b>	<u>Is able to</u> sort objects/items according to colour  <u>Is able to</u> make two hand/foot prints on the same page	<u>Is able to</u> order the heights of children from big to small  <u>Is able to</u> think of suitable places in the room to put familiar items e.g. cleaning items near the sink  <u>Is able to</u> remove odd items from a pile e.g remove the odd colour items from a blue pile	<u>Is able to</u> sort familiar objects when given the criteria  <u>Is beginning to</u> think of how to separate items based on similarities and differences	<u>Is beginning to</u> explain the reason for sorting items a particular way  <u>Is able to</u> create a physical pictogram  <u>Is able to</u> say which option had the most/least counts/votes	<u>Is able to</u> read and create a simple pictogram, tally chart, block diagrams and tables  <u>Is able to</u> ask and answer simple questions about information gathered  <u>Is able to</u> ask and answer totalling	<u>Is able to</u> use and read data from a bar chart, pictogram and table  <u>Is able to</u> draw a bar chart independent to represent their own collected data including all key features.  <u>Is able to</u> solve 1 and 2-step

					questions; comparing data	questions for finding data e.g. How many more apples did jack each than sue?- chn to read data then find difference
<p><b><u>Suggested teaching activities</u></b></p> <p><b>How should I teach this?</b></p>	<ul style="list-style-type: none"> <li>• Separating bears by colour - art link</li> <li>• Separating bears by size (big and small) - link with Measure</li> <li>• Hand/foot print making - sensory</li> </ul>	<ul style="list-style-type: none"> <li>• Visual height bar chart with pupil bodies</li> <li>• Tidying activity</li> <li>• Odd one out game</li> </ul> <p>Separating fruit/beg/leaves by their colour or size</p>	<ul style="list-style-type: none"> <li>• Tidying/organising activity e.g. sort your eng and maths work into piles</li> </ul> <p>Odd one out game</p>	<ul style="list-style-type: none"> <li>• Make a concrete pictogram using physical resources</li> <li>• ITP for pictogram, tally chart and bar</li> </ul> <p>Gather information about crops grown - be done using a pictogram or making correct number of marks</p>	<ul style="list-style-type: none"> <li>• Create a story from information gathered</li> <li>• Here is the answer.... The question was?</li> <li>• Create questionnaire - eng link</li> <li>• Record data using ICT</li> <li>• Record crops grown - number</li> </ul> <p>Record length of crops grown</p>	

### Online resources

Here are suggested online resources to support the teaching of Mathematics.

- Twinkle (e.g. number cards, dice, clocks, number lines etc)
- White Rose
- NCETM (create an account which gives access to interactive editable ppts and printable resources)

### Evidencing Work

There must be a **balance** between practical and worksheet based work. Each new skill must be taught using practical style lessons with the use of physical resources. At North Ridge we use a C-P-A approach (Concrete – Pictorial – Abstract) to teach new skills and concepts.

The teaching of the Mathematics curriculum **must not** solely be worksheet led.  
See the following page for samples of practical and worksheet based evidencing.



Name: \_\_\_\_\_



Date: \_\_\_\_\_

Learning objective:



INSERT IMAGE SUMMARY OF WHAT PUPIL HAS ACHIEVED EITHER IN ONE LESSON OR FOR THE WEEK.

### My Success criteria

1	I rote count numbers to 5 independently and accurately	E/G/M
2	I touch each object once as I count	E/G/M
3	I match quantity to numeral	E/G/M
4	I find the correct number	E/G/M
5	I match Numicon to number	E/G/M

Gaining skills / Mastered



My teacher thinks:

Level of support: Signed / verbal / independent

Next step:



Name: \_\_\_\_\_



Date: \_\_\_\_\_

Learning objective:



Count the pictures below and match them to their number.

