

Year 1 Maths Scheme of Work

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 1 1	Place Value – Counting (10) <ul style="list-style-type: none"> To count to 10 forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 10. To count concrete objects and pictures up to 10, securing one to one correspondence To represent numbers up to 10 using objects and pictorial representations, including number lines. 	1NPV-1	They are just coming out of Reception so practical work will help them transition. Firm foundation in number. Counting and being to form the digits.
2	Place Value (10) <ul style="list-style-type: none"> To compare objects up to 10 using mathematical language: equal to, more than, less than, fewer, most, least. To order numbers up to 10 – including some verbal positional language: first, second, last, etc When given a number, identify one more or one less. To deepen understanding of numbers by partitioning them (e.g. 5 into 1 and 4 or 2 and 3, etc) – link to future addition work. 	1NPV-2 1AS-1	Get a sense of language and avoid symbols (> < =) until later in the year. Gain a deeper sense of number by knowing different combinations to make single digits.
3	Addition: within 10 (Calculation Policy: Steps A1 and A2) <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+) and equals (=) To add numbers using objects and pictures (A1) with answer below 10. To add numbers using number lines (A2) with answer below 10 To solve simple one step problems that involve addition, using objects and pictures, including missing numbers ($5 = _ + 2$) 	1AS-1 1AS-2	Use of practical equipment again important. Children to explore numbers within 10. An opportunity to re-enforce the partitioning from last week (e.g. investigating addition statements to 5 so $5+0$, $4+1$, $3+2$, $2+3$, $1+4$, $0+5$). Challenge chn to work methodically to find them all.
4	Subtraction: within 10 (Calculation Policy: Step S3 and S4) <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving subtraction (-) and equals (=) To subtract numbers using number lines, counting backwards, (S3) with answer below 10. 	1AS-2	<p>Gage whether S1 and S2 may need explore in one session. Previous week and ability to handle number line should inform this.</p> <p>It is important to teach Counting Back and Counting on together in this week. They</p>

	<ul style="list-style-type: none"> To subtract numbers using number lines, counting on, (S4) with answer below 10 To solve simple one step problems that involve subtraction, using objects and pictures, including missing numbers ($5 = _ - 4$) 		<p>must be taught in separate sessions initially but then a lesson looking at when to use each strategy (both strategies in the same lesson) should be used.</p> <p>Missing number work could, again, re-enforce the above work with 5 (for example).</p>
5	<p>Addition/Subtraction: Number bonds to 10</p> <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). To represent and use number bonds to 10. To solve simple one step problems that involve addition and subtraction, using objects and pictures, including missing numbers ($10 = _ - 3$) 	1AS-2	<p>Use Calculation Policy A2a to initially establish the bond and jump. Should become a memorised fact after that.</p> <p>Chn should know number bonds as rapid recall.</p>
6	<p>Shape 2D</p> <ul style="list-style-type: none"> To recognise and name common 2D shapes (e.g. rectangles, squares, circles and triangles) 	1G-1	Name shapes and discuss properties. Group and sort shapes. Recognise shapes in different orientations and sizes. Relate to everyday objects. Continue shape patterns.
7	<p>Measure (length/height)</p> <ul style="list-style-type: none"> To compare and describe lengths and heights using long/short, longer/shorter, tall/short, double/half. To measure lengths using non-standard units. To measure length using standard units (ruler, cm) To solve simple, practical addition and subtraction problems involving length. 		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 2 1	<p>Place Value (20)</p> <ul style="list-style-type: none"> To count to 20 forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 20. 	1NPV-1	Builds on from teaching in Aut 1 week 1 and 2.

	<ul style="list-style-type: none"> To count concrete objects and pictures up to 20, securing one to one correspondence To represent numbers up to 20 using objects and pictorial representations, including number lines. To count in multiples of two up to 20 from 0, including missing numbers in sequences. 	1NF-2	
2	Comparing <ul style="list-style-type: none"> To compare objects up to 20 using mathematical language: equal to, more than, less than, fewer, most, least. To order numbers up to 20 – including some verbal positional language: first, second, last, etc When given a number, identify one more or one less. To deepen understanding of numbers by partitioning them (e.g. 15 into tens and units) and recombining them (e.g. ten and five into 15) 	1NPV-2 1AS-1	
3	Addition: below 20 (Calculation Policy A2a and MA3) <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+) and equals (=) below 20 (A2a) To use number bonds to fluently add three numbers below 20 (MA3). To solve simple one step problems that involve addition, using objects and pictures, including missing numbers ($15 = _ + 2$) 	1AS-2	<p>Start with additions up to 15 where the children are using their ability to partition a single digit to support their ability to cross the 10 fluently (e.g. $8 + 4 = 8 + 2$ to get to 10 and then add the other 2 to 12). Use of counting in ones and then adding the bigger jumps on a number line (A2a) will support this.</p> <p>Re-enforce number bonds to 10 by completing addition of 3 single digits (MA3).</p>
4	Subtraction: below 20 (Calculation Policy S4 and S5) <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving subtraction (-) and equals (=): below 20. To subtract numbers using number lines, counting backwards, (S5) with numbers below 20. To subtract numbers using number lines, counting on, (S4) with numbers below 20. 	1AS-2	<p>Similar to adding: takeaway from below 20 crossing the 10 with their ability to partition single digit numbers. At this point, re-enforce the options of when to take away (count back) and when to find the difference (count on).</p>

	<ul style="list-style-type: none"> To solve simple one step problems that involve subtraction, using objects and pictures, including missing numbers ($15 = _ - 4$) 		
5	<p>Addition/Subtraction of Money (Calculation Policy – use strategies covered thus far)</p> <ul style="list-style-type: none"> To recognise the value of coins (up to 20p). To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). To represent and use number bonds to 10. To solve simple one step problems that involve addition and subtraction, using objects and pictures, including missing numbers ($20 = _ - 3$) 	1AS-2	<p>Skills taught so far but in the context of money. Use 1p, 2p, 5p, 10p and 20p. Chn could develop sense of number by making 15p, for example, in different ways with coins (with most coins, least coins, 4 coins, etc).</p> <p>Opportunity to re-enforce counting in 2s with the 2p coins.</p>
6	<p>Geometry – Position and Direction</p> <ul style="list-style-type: none"> To describe position (using left, right, top, middle, bottom, on top of, in front of, between, around, near, close and far, inside and outside). To describe movement (using up, down, left, right, forwards and backwards) To describe direction and turns including whole, half, quarter and three quarter. 	1G-2	<p>Link to shapes to re-enforce names.</p> <p>Challenge more able to make link between the clock and a clockwise turn.</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 1 1	<p>Place Value (50)</p> <ul style="list-style-type: none"> To count to 50 forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 50. To represent numbers up to 50 on a number line. To count in multiples of two from any number to establish patterns with vodd and even. To count in multiples of 5 from 0, including missing numbers in the sequences. 	<p>1NPV-1</p> <p>1NF-2</p> <p>1NF-2</p>	<p>Builds on from learning in Aut 2 week 1 and 2</p>

2	<p>Addition/Subtraction: Number bonds to 20 (Calculation Policy A2a, MA3, S4, S5)</p> <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). To represent and use number bonds to 10 and 20. To solve simple one step problems that involve addition and subtraction, using objects and pictures, including missing numbers (20= _-3) 	1AS-2	<p>Re-enforce number bonds to 10 and then apply these to 20 – making strong links. Again, if needed, use A2a and S4/S5.</p> <p>Number bonds to 20 to be memorised facts.</p>
3	<p>Fractions (1/2)</p> <ul style="list-style-type: none"> To recognise a half of a shape To recognise a half of a set of objects To recognise a half of quantities (up to 20) 		<p>Chn to know a half as two equal parts.</p> <p>Chn to also explore combining two halves to make a whole (e.g. the concept of if a half is 3 then the whole is 6)</p> <p>Very practical at every stage. When completing quantities start with counters to support the number.</p>
4	<p>Grouping and Sharing (1/2) (Calculation Policy D3 & D4)</p> <ul style="list-style-type: none"> To calculate division questions (by 2) using concrete objects and sharing D3 To calculate division questions (by 2) using pictorial representations and sharing D3 To calculate division questions (by 2) using concrete objects and grouping D4 To calculate division questions (by 2) using pictorial representations and grouping D4 To solve one-step problems involving division by calculating the answer using concrete objects and pictorial representations (D3 & D4) 		<p>Make the link to work from last week and division.</p>
5	<p>Doubles/near doubles (addition)</p> <ul style="list-style-type: none"> To calculate double calculations (as additions) using concrete objects in two piles. To calculate double calculations (as addition) using pictorial representations (arrays) 		<p>Link to prior learning of knowing half and then doubling to find the whole. Explore using equipment; start below ten and then build up to 20. In the end, doubles are facts they should just know by memory.</p>

	<ul style="list-style-type: none"> To calculate near doubles (as addition) using concrete objects. 		Near doubles: $4+4=8$ so $4+3=7$ or $3+3=6$ so $4+3=7$ – explore adding one more to a double or subtracting one more from a double.
6	Measures (time) <ul style="list-style-type: none"> To sequence events in chronological order using language such as before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. To recognise and use language related to dates, including days of the week, weeks, months and years To compare time using quicker/slower, earlier/later. To tell the time to the hour and draw hands on the clock face. To tell the time to half past the hour and draw the hand on the clock face. 		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 2 1	Place Value (50) <ul style="list-style-type: none"> To compare numbers up to 50 using mathematical language: equal to, more than, less than, fewer, most, least. To order numbers up to 50 – including some verbal positional language: first, second, last, etc When given a number, identify one more or one less. To deepen understanding of numbers by partitioning them (e.g. 45 into tens and units) and recombining them (e.g. 3 tens and five into 35) To count in multiples of 2 and 5 from any number to establish patterns in number. 	1NPV-2 1AS-1 1NF-2	Introduce = < and > at this point alongside equal to, more than and less than.
2	Addition/subtraction: up to and including number bonds to 20 (Calculation Policy A2a, MA3, S4, S5) <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) below and up to 20 (A2a) 	1AS-2	Re-enforce and deepen prior learning of crossing the ten by partitioning single digits and then re-enforce all number bond work.

	<ul style="list-style-type: none"> To use number bonds to fluently add three numbers below 20 (MA3). To subtract numbers using number lines, counting backwards (S5) and forwards (S5), with numbers below and up to 20. To solve simple one step problems that involve addition, using objects and pictures, including missing numbers ($15 = _ + 2$) 		
3	Fractions (1/4) <ul style="list-style-type: none"> To recognise a quarter of a shape To recognise a quarter of a set of objects To recognise a quarter of quantities (up to 20) 		Re-enforce half work during a starter and make link to $\frac{1}{4}$ from there. Chn to explore making a whole from a quarter (e.g. so if $\frac{1}{4}$ is 2 then the whole is 8). Use cubes and diagrams to support.
4	Grouping and Sharing (1/4) <ul style="list-style-type: none"> To calculate division questions (by 4) using concrete objects and sharing D3 To calculate division questions (by 4) using pictorial representations and sharing D3 To calculate division questions (by 4) using concrete objects and grouping D4 To calculate division questions (by 4) using pictorial representations and grouping D4 To solve one-step problems involving division by calculating the answer using concrete objects and pictorial representations (D3 & D4) 		Similar to work done with $\frac{1}{2}$ previously and strong links to last week.
5	Shape 3D <ul style="list-style-type: none"> To recognise and name common 3D shapes (e.g. cuboids, cubes, pyramids, spheres) 	1G-1	Name shapes and discuss properties. Group and sort shapes. Recognise shapes in different orientations and sizes. Relate to everyday objects. Continue shape patterns.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum1	Place Value (100)	1NPV-1	Builds on from Spr 1 week 1 and Spr 2 week 1.

1	<ul style="list-style-type: none"> To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 100. To represent numbers up to 100 on a number line. To count in multiples of two and five from any number to establish patterns with odd and even. To count in multiples of 10 from 0, including missing numbers in the sequences. 	1NF-2	
2	<p>Addition/Subtraction</p> <ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) below and up to 20 (A2a) To use number bonds to fluently add three numbers below 20 (MA3). To subtract numbers using number lines, counting backwards (S5) and forwards (S5), with numbers below and up to 20. To solve simple one step problems that involve addition, using objects and pictures, including missing numbers ($15 = _ + 2$) 	1AS-2	Methods should be well embedded – look to progress to using more advanced vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.
3	<p>Fractions (1/2 and 1/4)</p> <ul style="list-style-type: none"> To recognise, find and name a half as one of two equal parts of an object, shape or quantity. To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. 		<p>Re-enforce prior learning by doing $\frac{1}{2}$ or $\frac{1}{4}$ in all context at once; $\frac{1}{2}$ and $\frac{1}{4}$ of objects etc within the same lesson.</p> <p>Make connections when given $\frac{1}{2}$ or $\frac{1}{4}$ back to the whole.</p>
4	<p>Multiplication and Division (Calculation Policy M1 and D4)</p> <ul style="list-style-type: none"> To count in 2s, 5s and 10s from zero To learn to multiply using concrete objects (arrays for both), M1, with the support of the teacher. To learn to divide using concrete objects (arrays for both), D4, with the support of the teacher. To solve one-step problems involving multiplication and division by calculating answers using concrete objects, with the support of the teacher. 	1NF-2	<p>When calculating, keep answer 20 or below.</p> <p>All practical – chn are just beginning to make links between repeated addition and multiplication.</p>
5	<p>Multiplication and Division (Calculation Policy M1 and D4)</p>	1NF-2	

	<ul style="list-style-type: none"> To count in 2s, 5s and 10s from any number, including missing numbers in sequences. To learn to multiply using pictorial representations (arrays for both), M1, with the support of the teacher. To learn to divide using pictorial representations (arrays for both), D4, with the support of the teacher. To solve one-step problems involving multiplication and division by calculating answers using concrete objects, with the support of the teacher. 		
6	Measures (mass/weight) <ul style="list-style-type: none"> To compare and describe mass/weight using heavy/light, heavier than, lighter than. To measure mass/weight using non-standard units. To measure mass/weight using standard units (scales) To solve simple, practical addition and subtraction problems involving mass/weight. 		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum2 1	Place Value (100) <ul style="list-style-type: none"> To compare numbers up to 100 using mathematical language: equal to, more than, less than, fewer, most, least AND symbols: > < =. To order numbers up to 100 – including some verbal positional language: first, second, last, etc When given a number, identify one more or one less. To deepen understanding of numbers by partitioning them (e.g. 75 into tens and units) and recombining them (e.g. 8 tens and five into 85) To count in multiples of 2, 5 and 10 from any number to establish patterns in number. 	1NPV-2 1AS-1 1NF-2	Use symbols > < =
2	Addition/Subtraction of money (Calculation Policy A2a, MA3, S4, S5) <ul style="list-style-type: none"> To recognise the value of coins (up to 20p). 	1AS-2	Stay in pence and up to 20p. Use vocabulary, more than, less than, and

	<ul style="list-style-type: none"> To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). To represent and use number bonds to 10 and 20. To solve simple one step problems that involve addition and subtraction, using objects and pictures, including missing numbers (20= __-3) To use mathematical vocabulary and symbols to make a statement correct. 		<p>symbols from last week, $>=<$, to compare calculations (e.g. $5+2$ ___ $12-5$)</p> <p>Again, look to progress to using more advanced vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.</p>
3	<p>Multiplication and Division (Calculation Policy M1 and D4)</p> <ul style="list-style-type: none"> To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects and pictorial representations and arrays with the support of the teacher. 		<p>Re-enforce methods learned previously.</p> <p>Remember it is still very much repeated addition. Opportunities to reason and problem solve having embedded methods previously.</p>
4	<p>Measures (capacity/volume)</p> <ul style="list-style-type: none"> To compare and describe capacity/volume using full/empty, more than, less than, half, half full, quarter. To measure capacity/volume using non-standard units. To measure capacity/volume using standard units (beakers) To solve simple, practical addition and subtraction problems involving capacity/volume. 		

Year 2 Maths Scheme of Work

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
<p>Aut 1</p> <p>1</p>	<p>Place Value (to 50)</p> <ul style="list-style-type: none"> To count to 50 forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 50. To represent numbers up to 50 on a number line. To deepen understanding of numbers up to 20 by partitioning them in different ways (e.g. $12 = 10+2$ or $5+7$, etc) To recognise the place value of each digit in a two-digit number up to 50 (tens and ones) 	<p>1NPV-1</p> <p>2NPV-1</p>	<p>Chn went up to 100 at the end of Summer 2, Year 1. An opportunity to consolidate work and knowledge from Year 1 to ensure a secure foundation in number before calculations.</p> <p>Again, partitioning numbers, including single digits, in a variety of ways is important to ensure they can use these facts to add more fluently (e.g. making 5 into 3 and 2 supports mental fluency of $7+5$ by adding 3 to 10 and then the 2 to 12). Important to explore this before adding and subtracting.</p> <p>Use practical equipment when partitioning 2-digit numbers up to 50. Stay with 10s and 1s for now and use Diennes and place value counters.</p>
<p>2</p>	<p>Addition and Subtraction (Calculation Policy A2a, MA3, S4, S5)</p> <ul style="list-style-type: none"> To recall addition and subtraction facts to 10 To add numbers less than 20 across the 10 barrier (A2a) To subtract numbers less than 20 across the 10 barrier (S4, S5). To add three one-digit numbers mentally (MA3) To recall addition and subtraction facts to 20. 	<p>2AS-1</p>	<p>This learning has been covered in Year 1 and this is an opportunity to embed it before moving on.</p> <p>Give the chn opportunity to use practical equipment (cubes, Diennes, Numicon, Place Value counters) if needed but otherwise use calculation policy.</p> <p>When moving across the ten, reinforce the partitioning from last week (e.g. $7+5=7+3$ then the 2).</p> <p>Chn should be encourage to find number bonds, doubles and near doubles when adding three single digits mentally.</p> <p>Number facts should become rapid recall.</p>
<p>3</p>	<p>Addition and Subtraction (Calculation Policy A2a, MA3, S4, S5)</p> <ul style="list-style-type: none"> To show that addition of two numbers (up to 20) can be done in any order (commutative) and subtraction of one number from another cannot. 	<p>2AS-1</p>	<p>Continue to embed facts to 20 as rapid recall and introduce more problem solving.</p>

	<ul style="list-style-type: none"> To derive fact families for addition and subtraction (up to 20) To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (up to 20). To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures (up to 20) 		<p>vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.</p>
4	<p>Multiplication and Division (Calculation Policy M1, D4)</p> <ul style="list-style-type: none"> To count in 2s, 5s and 10s up to the 12th multiple. To understand multiplication and division as equal groups. To solve pictorial problems by writing repeated addition and multiplication M1 To solve pictorial and practical problems for division by grouping D4 	2MD-1 2MD-2	<p>Chn have talked about multiplication as repeated addition in Year 1 – in image form so counting pairs of socks in 2s. Division as sharing and grouping.</p> <p>Counting in 2, 5 and 10 was done in year 1 so as a counting lesson can be one lesson.</p> <p>Teach the concept of multiplication and division this week. Very practical.</p>
5	<p>Shape (2D)</p> <ul style="list-style-type: none"> To recognised and name 2D shapes including polygons (up to hexagon) To identify and describe the properties of 2D shapes. To identify a line of symmetry in a vertical line. To compare and sort common 2D shapes and everyday objects. To draw lines and shapes using a straight edge. 	2G-1	<p>In Year 1, chn have recognised and named shapes (rectangles, squares, circles, triangles) in different orientations. While they may have discussed properties, this was not a focus and is new to them.</p> <p>Use vocabulary of sides and vertices accurately.</p> <p>Using squares or geoboard chn to complete shapes by adding lines or explore drawing simple shapes with straight lines.</p>
6	<p>Measures (Length)</p> <ul style="list-style-type: none"> To choose and use an appropriate unit of measure to estimate the length or height in any direction (cm, m). To measure accurately using a ruler for length and height in cm or m. To compare lengths/heights, using <, > and = To order different lengths and heights 		<p>In Year 1, used comparative language, ordered, measured in cm with ruler and did simple addition and subtraction with length.</p> <p>Use language such as more than, difference, how much longer or shorter, combined or total (for example) and</p>

	<ul style="list-style-type: none"> To solve simple problems in a practical context involving length. 		vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.
7	Data Handling <ul style="list-style-type: none"> To construct simple tally charts and tables. To interpret tally charts and tables, answering simple questions by identifying the quantity in each category. To construct pictograms (1-1) To interpret pictograms and answer simple questions by identifying the quantity in each category. To ask and answer questions about totalling and comparing categorical data. 		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 2 1	Place Value (to 50) <ul style="list-style-type: none"> To recognise the place value of each digit in a two-digit number up to 50 (tens and ones) To count in 2 and 5 from 0 forward and backwards To compare and order numbers from 0 up to 50; use <, > and = signs. To use place value and number facts to solve problems up to 50. To estimate numbers up to 50 on a number line. 	1NPV-1 2NPV-1 2NPV-2	This time when partitioning numbers, consider $23=20+3$ and $10+13$, etc: partition in different ways to support adding later. Use equipment one day (Diennes and place value counters) and then number lines another day. Chn used <, > and = in the Summer Term of year 1 so should be familiar.
2	Addition and Subtraction (Calculation Policy A2a, MA3, S5) <ul style="list-style-type: none"> To add and subtract a two-digit number and ones (number bonds to 10 with numbers up to 50 e.g. $24+6$ or $40-7$) A2a To add a two-digit number and ones (crossing the ten by partitioning numbers, up to 50) A2a To subtract a two-digit number and ones (crossing the ten by partitioning numbers, up to 50) S5 	2AS-3	Reinforce number bond work in a different context.

	<ul style="list-style-type: none"> To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (up to 50). To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures (up to 50) 		vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.
3	Multiplication and Division (Calculation Policy M2, D5) <ul style="list-style-type: none"> To calculate multiplication statements for the 2 times table M2 To calculate division statements for the 2 times table D5 To calculate multiplication and division statements for the 2 times table and write them using multiplication (x), division (÷) and equals (=) signs M2 and D5 To solve problems involving multiplication and division, including problems in context. 	2MD-1 2MD-2	<p>Introduce the idea of using the number line but they may need understanding of it supported by cubes. Teach multiplication with repeated addition statement still there and then talk about it in the division too.</p> <p>Equal groups to be reinforced: multiplication being the total number after the groups are put together and division being the number of groups you split it in to.</p>
4	Fractions <ul style="list-style-type: none"> To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of shapes. To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of objects. To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of lengths. To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of quantities. 		<p>Chn have previously found half and quarter of shapes, objects and numbers below 20. They have also explore what the whole is when given $\frac{1}{4}$ (e.g. $\frac{1}{4}$ is 2 so the whole is 8)</p> <p>Use of equipment and pictures are essential. Must deal with fractions being equal: opportunities to reason and problem solve with shapes or quantities split unequally.</p>
5	Geometry - Position and Direction <ul style="list-style-type: none"> To use mathematical language to describe position. To describe a turn in terms of right angles for quarter, half and three quarters, using clockwise and anti-clockwise. To order and arrange combinations of mathematical objects (e.g. shapes) in patterns and sequences. To use mathematical language to describe movements, including movements in a straight line and rotation as a 		<p>In year 1, chn have described, movements (forwards, backwards, etc), position (top, middle, left, etc) and turns (full, half, quarter, etc)</p> <p>Turns to be very practical including moving themselves and physically moving objects.</p> <p>Within patterns and sequences, use shapes in different orientations to reinforce that learning.</p> <p>Beebots may be useful.</p>

	turn in terms of right angles for quarter, half and three quarter.		
6	Data Handling <ul style="list-style-type: none"> To construct pictograms (2, 5 and 10) To interpret pictograms and answer simple questions by identifying the quantity in each category. To ask and answer questions about totalling and comparing categorical data. 	2NPV-2 2MD-1	

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 1 1	Place Value (up to 100) <ul style="list-style-type: none"> To count to 100 forwards and backwards, beginning with 0 or 1, or from any given number. To read and write numbers in numerals and words up to 100. To recognise the place value of each digit in a two-digit number up to 100 (tens and ones) To deepen understanding of numbers up to 100 by partitioning them in different ways (e.g. $72 = 70+2$ or $50+22$, etc) To count in steps of 10 from any number forwards and backwards. 	1NPV-1 2NPV-1	Similar to previous work, thinking-wise, but with bigger numbers.
2	Addition and Subtraction (Calculation Policy A3, MA2, S6) <ul style="list-style-type: none"> To recall and use addition and subtraction facts to 100 (tens, related to number bond work e.g. $30+70$) To derive fact families for addition and subtraction (tens, up to 100) To add and subtract a two-digit number and tens (A3, MA2, S6) 	2AS-3	Use number bond work as a starter and then use practical representations to make the link of $2+8=10$ so $20+80=100$. MA2 in there as a challenge to those who are secure with number line work.

	<ul style="list-style-type: none"> To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (adding and subtracting 2 digits and tens). To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures (adding and subtracting 2 digits and tens) 		Reinforce commutative understanding by mixing order of calculations (e.g. 47+30 or 30+47). Need to discuss this but doesn't need to be a discrete objective here.
3	<p>Addition and Subtraction (Calculation Policy A3, A3a, S6, S8)</p> <ul style="list-style-type: none"> To add two two-digit numbers (not crossing the ten) (A3, A3a) To add two two-digit numbers (crossing the ten) (A3, A3a) To subtract two two-digit numbers (not crossing the ten) (S6, S8) To subtract two two-digit numbers (crossing the ten) (S6, S8) To add and subtract two two-digit numbers (crossing the ten) (A3, A3a, S6, S8) 	2AS-4 2AS-2	<p>Focus on methods this time. When teaching addition, introduce the term sum Use initial method A3 to then support transition to A3a (can do subtraction steps in a similar way)</p> <p>When teaching subtraction, introduce the terms difference and how many more. Teach chn to count forward and backwards and when it is best to use each. Possibly allow the chn a session to explore each and then pick their preferred method.</p>
4	<p>Multiplication and Division (Calculation Policy M2, D5)</p> <ul style="list-style-type: none"> To calculate multiplication statements for the 5 times table M2 To calculate division statements for the 5 times table D5 To calculate multiplication and division statements for the 5 times table and write them using multiplication (x), division (\div) and equals (=) signs M2 and D5 To calculate multiplication statements for the 10 times table M2 To calculate division statements for the 10 times table D5 To calculate multiplication and division statements for the 10 times table and write them using multiplication (x), division (\div) and equals (=) signs M2 and D5 	2MD-1 2MD-2	Focus on individual tables and then possibly combine a day where both are covered. Again, reinforce methods and the concept of what multiplication and division are in terms of equal groups.

5	Fractions <ul style="list-style-type: none"> To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of shapes, objects and quantities. To recognise, find and name fractions $\frac{3}{4}$ of shapes. To recognise, find and name fractions $\frac{3}{4}$ of objects. To recognise, find and name fractions $\frac{3}{4}$ of length. To recognise, find and name fractions $\frac{3}{4}$ of quantities. 		<p>First objective a recap of previous learning so should only be one session.</p> <p>$\frac{3}{4}$ is first introduction into non-unit fractions: lots of exploration.</p>
6	Shape (3D) <ul style="list-style-type: none"> To recognised and name 3D shapes including cuboids, prisms, cones, pyramids. To identify and describe the properties of 3D shapes, including number of edges, vertices and faces To identify 2D shapes on the surface of 3D shapes (for example a triangle on a pyramid) To compare and sort common 3D shapes and everyday objects. 	2G-1	<p>In year 1, chn have recognised and named common 3D shapes such as cubes, cuboids, pyramids and spheres. Looking at properties will be a first now.</p> <p>You may want to do each property on separate days – depending on the classes ability to cope.</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 2 1	Place Value (up to 100) <ul style="list-style-type: none"> To recognise the place value of each digit in a two-digit number up to 100 (tens and ones) To deepen my understanding of numbers up to 100 by partitioning and recombining numbers To estimate numbers on a number line. To count in 3 from 0 forward and backwards To compare and order numbers from 0 up to 100; use <, > and = signs. 	1NPV-1 2NPV-1 2NPV-2	<p>Opportunities to deepen learning and solve problems/reason by partitioning and recombining numbers. (e.g. $73 = 60 + __$ or 60 and $13 = __$: not written as formally as that)</p> <p>For number line work can challenge by the degree to which the number line is numbered and the degree of accuracy you expect.</p>

	<ul style="list-style-type: none"> To use place value and number facts to solve problems up to 100. 		
2	<p>Addition and Subtraction (Calculation Policy A3, A3a, S6, S8)</p> <ul style="list-style-type: none"> To add and subtract two two-digit numbers (crossing the ten) (A3, A3a, S6, S8) To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. (A3, A3a, S6, S8) To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (adding and subtracting 2 two-digit numbers) To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures (adding and subtracting 2 two-digit numbers) 		<p>Ensure method is secure before moving on.</p> <p>vocabulary: put together, add, altogether, total, take away, distance between, more than and less than, sum, difference, how many more</p>
3	<p>Multiplication and Division (Calculation Policy M2, D5)</p> <ul style="list-style-type: none"> To calculate multiplication and division statements for the 2, 5- and 10-times table and write them using multiplication (x), division (÷) and equals (=) signs M2 and D5 To recall multiplication and division facts for known tables including recognising odd and even numbers. Solve problems involving multiplication and division, including problems in context 	<p>2MD-1 2MD-2</p>	<p>Chn should become fluent with times table facts and understand the concept. Chn to investigate patterns in the tables and discuss odd and even numbers (e.g. 2x all even or 5x 5 and 0 pattern of odd, even, etc)</p>
4	<p>Time</p> <ul style="list-style-type: none"> To know the number of minutes in an hour and the number of hours in a day. To tell and write the time to the hour and half past (year 1) and draw the hands on a clock face to show these times. To tell and write the time to quarter to and quarter past and draw the hands on a clock face to show these times. 		<p>In year 1, some “time” language (before, after, morning,etc), days, months, on the hour and half past.</p>

	<ul style="list-style-type: none"> To tell and write the time to five-minute intervals and draw the hands on a clock face to show these times. 		
5	Measures (mass and capacity) <ul style="list-style-type: none"> To choose and use an appropriate unit of measure to estimate the mass (g, kg) or capacity (ml, litres). To measure accurately using scales and beakers for mass and capacity To compare and order mass and capacity, using <, > and = To solve simple problems in a practical context involving mass and capacity 		In Year 1, chn have used language associated to both and began to measure using scales as mentioned.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum1 1	Place Value <ul style="list-style-type: none"> To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward To recognise the place value of each digit in a two-digit number (tens and ones) To identify, represent and estimate numbers using different representations, including the number line. To compare and order numbers from 0 up to 100; use <, > and = To use place value and number facts to solve problems. 	1NPV-1 2NPV-1 2NPV-2	
2	Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8) <ul style="list-style-type: none"> To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ✓ 2-digit and ones ✓ 2-digit and tens ✓ Two 2-digit numbers 	2AS-1 2AS-2 2AS-3 2AS-4	Use the number line work as a starter and discussion as to how to work mentally (same steps but without drawing the picture). Place Value is essential when making mental jottings.

	✓ Three 1-digit numbers		
3	Multiplication and Division (Calculation Policy M3) <ul style="list-style-type: none"> To recall and use multiplication and division facts for the 2, 5 and 10 times table To show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot To calculate multiplication and division statements and write them using multiplication (x), division (÷) and equals (=) signs To solve problems involving multiplication and division using arrays. 	2MD-1 2MD-2	<p>Facts at this point should be rapid recall. Could introduce the 3s as they have counted in 3s in Place Value.</p> <p>Chn presented with arrays and work with it showing 3 groups of 5 or 5 groups of 3 that equal 15 and then related division ideas. Talk about 3 groups of 5 being 5x3 and 5 groups of 3 being 3x5.</p> <p>Use real world contexts to solve problems where set out in arrays.</p>
4	Fractions <ul style="list-style-type: none"> To recognise, find and name fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$ of shapes, objects and quantities. To recognise, find and name fractions $\frac{3}{4}$ of shapes, objects and quantities. To recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ of shapes and objects. To count in fractions beyond one and up to 10 on a number line. 		<p>Deepen learning of unit and non-unit fractions</p> <p>Reinforce the concept of fractions and that they can add up to more than one. Support with pictures.</p>
5	Shape (2D and 3D) <ul style="list-style-type: none"> To identify and describe the properties of 2D shapes, including the number of sides and line of symmetry in a vertical line. To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. To identify 2D shapes on the surface of 3D shapes (for example a triangle on a pyramid) To compare and sort common 2D and 3D shapes and everyday objects 	2G-1	2D and 3D shapes mixed in together this week – having already covered both separately.
6	Direction and Time		

	<ul style="list-style-type: none"> To order and arrange combinations of mathematical objects (e.g. shapes) in patterns and sequences. To use mathematical language to describe movements, including movements in a straight line and rotation as a turn in terms of right angles for quarter, half and three quarter. To compare and sequence intervals of time To tell and write the time to five minutes, including quarter past/to the hour, and draw the hands on a clock face to show these times. 		May need to reinforce clockwise and anti-clockwise in turns first.
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Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum2 1	Addition and Subtraction (Calculation Policy A4, MS1 and MS2) <ul style="list-style-type: none"> To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems To solve problems with addition and subtraction using mental methods, involving numbers, quantities and measures 	2AS-1 2AS-2 2AS-3 2AS-4	Use all calculations listed in Summer 1 Addition and Subtraction. Reinforce place value for mental work. vocabulary: put together, add, altogether, total, take away, distance between, more than and less than, sum, difference, how many more
2	Measures (money) <ul style="list-style-type: none"> To recognise the value of different coins and notes (£ and p) To combine coins or notes to make a total. To find different combinations of coins that equal the same amount of money. To order and compare money 	2AS-1 2AS-2 2AS-3 2AS-4 2NPV-2	In year 1, some money work with coins up to 20p. In recognising coins and making totals, chn learn to count up coins. For problems, £ and p to be noted as separate at all times. Either work in £ or p: not both

	<ul style="list-style-type: none"> To solve simple problems in a practical context involving addition and subtraction of money, including giving change. 		Find the total. Find the difference. Give change.
3	<p>Measures</p> <ul style="list-style-type: none"> To choose and use an appropriate unit of measure to estimate the length/height (cm, m), temperature (°C), mass (g, kg) or capacity (ml, litres). To measure accurately using rulers, thermometers, scales and beakers. To compare and order measures, using <, > and = To solve simple problems in a practical context involving length, temperature, mass and capacity 		Build on previous learning from this year. Temperature is new to them.
4	<p>Data Handling</p> <ul style="list-style-type: none"> To interpret pictograms, tally charts and simple tables by answering simple questions and identifying the quantity in each category. To construct block diagrams. To interpret block diagrams and answer simple questions by identifying the quantity in each category. To ask and answer questions about totalling and comparing categorical data. 		

Year 3 Maths Scheme of Work

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 1 1	<p>Place Value</p> <ul style="list-style-type: none"> To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward To recognise the place value of each digit in a two-digit number (tens and ones) To deepen understanding of numbers up to 100 by partitioning them in different ways (e.g. $72 = 70+2$ or $60+12$, etc) To identify, represent and estimate numbers using different representations, including the number line. To compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ To use place value and number facts to solve problems. 	<p>3NF-2 2NPV-1 2NPV-2</p>	<p>Very similar to learning at the end of Year 2 so chn should be very fluent.</p> <p>An important concept later for mental division (e.g. $84 \div 6 = 60$ and $24 \div 6$ so 10 and $4 = 14$) – in Spring</p>
2	<p>Addition and Subtraction</p> <ul style="list-style-type: none"> To recall and use addition and subtraction facts to 20 fluently. To recall and use number bonds to 10 (in larger two-digit numbers e.g. $64+6$ or $80-2$) To recall and use addition and subtraction facts to 100 (tens e.g. $40+60$) fluently. To derive fact families for addition and subtraction up to 100. To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (up to 100). To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures (up to 100) 	<p>2AS-1 2AS-3 2AS-4</p>	<p>Chn have been taught this in Year 2. Reinforce prior learning.</p> <p>Commutative should be mentioned for addition and not subtraction (can be mentioned and shown in examples (e.g. $45+5$ or $5+45$) but doesn't need its own LO)</p> <p>Can model with number lines if needed but this should be mental work and almost recall at this point.</p>

<p>3</p>	<p>Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)</p> <ul style="list-style-type: none"> To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ✓ 2-digit and ones ✓ 2-digit and tens ✓ Two 2-digit numbers ✓ Three 1-digit numbers To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and measures. 	<p>2AS-1 2AS-3 2AS-4</p> <p>3NF-1</p>	<p>This is a repeat week from Year 2 to consolidate. Chn have been taught to partition single digits to support addition (e.g. 47+6 is 47+3 and then 3 more)</p> <p>Use the number line work as a starter and discussion as to how to work mentally (same steps but without drawing the picture). Place Value is essential when making mental jottings.</p> <p>May be enough for most to stay within 100 but could challenge HA to cross 100 (e.g. 84+28)</p>
<p>4</p>	<p>Multiplication and Division (Calculation Policy M3)</p> <ul style="list-style-type: none"> To recall and use multiplication and division facts for the 2, 5 and 10 times table To show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot To calculate multiplication and division statements and write them using multiplication (x), division (÷) and equals (=) signs To derive related multiplication and division facts from arrays. To solve problems involving multiplication and division using arrays. 	<p>2MD-1 2MD-2</p>	<p>Repeat of last Year 2 week.</p> <p>Facts at this point should be rapid recall. Could introduce the 3s as they have counted in 3s in Place Value.</p> <p>Chn presented with arrays and work with it showing 3 groups of 5 or 5 groups of 3 that equal 15 and then related division ideas.</p> <p>Talk about 3 groups of 5 being 5x3 and 5 groups of 3 being 3x5.</p> <p>Use real world contexts to solve problems where set out in arrays.</p>
<p>5</p>	<p>Fractions</p> <ul style="list-style-type: none"> To recognise, find and write fractions (1/2) of shapes and discrete objects To recognise, find and write fractions (1/4) of shapes and discrete objects To recognise, find and write fractions (1/3) of shapes and discrete objects 	<p>3F-1 3F-2 3F-3</p>	<p>Chn have previously found ½, ¼, 1/3 and ¾ of images, objects and small numbers. They have counted in 1/2s and 1/4s on a number line up to 10.</p> <p>Continue to embed the fraction/whole relationship. Chn should know ½ is the whole in two equal parts so should be able to double ½ to get back to the whole (e.g. ½=7 so the whole is 7x2=14) – use of images and cubes important here.</p>

	<ul style="list-style-type: none"> To recognise and use fractions of discrete objects: unit fractions with small denominators (link to times table work so far) To count in fractions ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$) beyond one and up to 10 on a number line 		
6	Measures (length) <ul style="list-style-type: none"> To measure length in cm or m To convert and compare lengths (cm and m) To measure length in cm or mm To convert and compare lengths (cm and mm) To add lengths in the context of simple problems To subtract lengths in the context of simple problems 	3NPV-2 3NPV-3 3AS-2	Chn have previously learned to measure in m or cm separately. Comparing, ordering and solving problems involving length Avoid decimal notation. So mixed measures looks like 3m and 45cm equals 345cm or 5cm and 3mm = 53mm
7	Shape <ul style="list-style-type: none"> To name, identify and describe the properties of 2D shapes To draw 2D shapes. To identify horizontal and vertical lines. To identify perpendicular and parallel lines. To name, identify and describe the properties of 3D shapes 	3G-2	Chn have previously looked at the properties of 2D and 3D shapes and identified 2D faces on 3D shapes. Chn also explored vertical line of symmetry.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 2 1	Place Value <ul style="list-style-type: none"> To count from 0 in multiples of 4 and 8. To recognise the place value of each digit in a three-digit number (hundreds, tens and ones) To read and write numbers up to 1,000 in numerals and in words To compare and order numbers up to 1,000. 	3NPV-1 3NPV-2	Partition with place value and focus on the relationship between the columns so chn know that 10 tens are equal to 1 hundred and 100 is 10 times bigger than 10, etc

2	<p>Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)</p> <ul style="list-style-type: none"> To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ✓ 3-digit and ones (not crossing the ten) ✓ 3-digit and ones (crossing the ten) ✓ 3-digit and tens (not crossing the hundred) ✓ 3-digit and tens (crossing the hundred) ✓ 3-digit and hundreds 	3AS-3	<p>Focus on methods to secure knowledge. Use number lines during input to support understanding when working mentally.</p> <p>Teach chn to make jottings if necessary and use place value accurately when doing so (e.g. 346 + 7 they could jot 350 then 353 if needed)</p>
3	<p>Multiplication and Division (Calculation Policy visual of M2, D5 to support mental work)</p> <ul style="list-style-type: none"> To calculate multiplication statements for the 3 times table To calculate division statements for the 3 times table To calculate multiplication and division statements for the 3 times table and write them using multiplication (x), division (÷) and equals (=) signs To solve problems, including missing number problems, involving multiplication and division. 	3MD-1	<p>Chn to work mentally in counting but use the images from previous learning M2 and D5 to support conceptual understanding.</p> <p>Mix in x2, x5 and x10 with x3 at this point <i>NB – have counted in 4s and 8s so could times table links be made – particularly more able (only if appropriate)</i></p>
4	<p>Fractions</p> <ul style="list-style-type: none"> To recognise, find and write fractions (unit fractions with small denominators) of objects and quantities To recognise that tenths arise from dividing an object into 10 equal parts To count in fractions ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$) beyond one and up to 10 on a number line To count up and down in tenths To compare and order unit fractions To recognise and show, using diagrams, equivalent fractions with small denominators 	3F-1 3F-2 3F-3	<p>Progress from last time by covering multiple unit fractions in one session. Make links between the part and whole (e.g. $\frac{1}{4}=3$ so the whole is 12) Move from cubes to numbers.</p> <p>Link to number line work or size of pieces (very visual) Use diagrams and number lines to show equivalence</p>
5	<p>Time</p> <ul style="list-style-type: none"> To know the number of seconds in a minute, minutes in an hour and number of hours in the day 		<p>Chn previously told the time to 5 minute intervals</p>

	<ul style="list-style-type: none"> To know the number of days in each month, year and leap year. To tell and write the time (to the hour, half past and quarters) from an analogue clock, including using Roman Numerals I-XII To tell and write the time (to 5 minute intervals) from an analogue clock, including using Roman Numerals I-XII To calculate and compare the duration of events. 		Introduce duration and keep simple. Inside an hour on round numbers.
6	Data Handling <ul style="list-style-type: none"> To present data in tables. To interpret data in tables by solving one-step and two-step questions. To present data in pictograms (1-1, 2, 5 and 10). To interpret data in pictograms (1-1, 2, 5 and 10) by solving one-step and two-step questions. 		<p>Chn have previously done tallies, pictogram (including ratio of 2, 5 and 10) and block diagrams.</p> <p>Questions e.g. how many more? How many fewer?</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 1 1	Place Value <ul style="list-style-type: none"> To count from 0 in multiples of 50 and 100. To recognise the place value of each digit in a three-digit number (hundreds, tens and ones) To deepen understanding of numbers up to 1,000 by partitioning them in different ways (e.g. $184 = 100+80+4$ or $160+24$, etc) To identify, represent and estimate numbers using different representations (including number lines) To compare and order numbers up to 1,000. To find 10 or 100 more or less than a given number 	3NPV-1 3NPV-2 3NPV-3	<p>An important concept later for mental division (e.g. $184 \div 4 = 160$ and $24 \div 4$ so 40 and $6 = 46$) – in Spring</p> <p>Use number lines to position numbers and identify the next 10 or 100 Should be able to link this to previous learning of 3-digit plus 10, etc</p>
2	Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)	3AS-3	Progress from last time and chn to fluently cross tens and hundreds barriers where asked.

	<ul style="list-style-type: none"> To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ✓ 3-digit and ones ✓ 3-digit and tens ✓ 3-digit and hundreds To solve problems, including missing number problems, using number facts and place value. To use the inverse operations to check answers 		
3	Multiplication and Division (Calculation Policy visual of M2, D5 to support mental work) <ul style="list-style-type: none"> To calculate multiplication and division statements for the 4 times table and write them using multiplication (x), division (÷) and equals (=) signs To calculate multiplication and division statements for the 8 times table and write them using multiplication (x), division (÷) and equals (=) signs To solve problems, including missing number problems, involving multiplication and division. To solve problems involving multiplication and division, including scaling problems 	3MD-1	<p>Have previously, as part of place value, counted in 4s and 8s.</p> <p>When teaching the 2, 4 and 8 times tables, chn to make connections through doubling.</p> <p>Simple scaling such as four times as high, eight times as long, etc</p>
4	Multiplication and Division (Calculation Policy MM5 and the reverse for halving) <ul style="list-style-type: none"> To multiply two-digit numbers by one digit (doubling) To divide two-digit number by one-digit (halving) To solve problems involving multiplication and division, including scaling problems To solve problems involving multiplication and division, including correspondence problems in which n objects are connected to m objects. To solve problems, including missing number problems, involving multiplication and division 	3MD-1	<p>Chn to use MM5 to double and then when half teach the chn to partition into 10s and 1s for even tens (e.g. half 46 $40 \rightarrow 20$ and $6 \rightarrow 3$ so 23). Problem will arise with odd tens. If they know half of 30 is 15 great but if not encourage them to partition 36 into 20 and 16 so 10 and 8 = 18. This will reinforce prior place value knowledge.</p> <p>$\rightarrow n$ objects to m objects e.g. 3 hats and 4 shirts how many combinations? $3 \times 4 = 12$. Teach chn to methodically list them, etc</p> <p>Or four cakes between 8 friends</p>
5	Measures (money)		Should be familiar with all coins and making totals by counting in multiples from year 2. Have solved simple

	<ul style="list-style-type: none"> To combine coins or notes to make a total (pounds or pence separately). To find different combinations of coins that equal the same amount of money. To convert pounds and pence. To order and compare money by converting pounds and pence To solve simple problems in a practical context involving addition and subtraction of money, including giving change. 	3NPV-2 3AS-2	<p>problems using totals, difference and change. Previously worked in £ or p: not both</p> <p>Make totals in pounds and pence separately initially, then convert between the two and then...</p> <p>For problems or comparisons, £ and p can be used within same problem but never as decimal notation (Year 4). E.g. Dave has £4 and 30p; Sally has 403p – who has more? How do you know?</p>
6	<p>Shape</p> <ul style="list-style-type: none"> To recognise right angles as a description of a turn. To identify whether angles are greater than or less than a right angle To recognise that two right angles makes a half turn; three right angles make a $\frac{3}{4}$ turn; and four right angles make a full turn. To recognise angles as a property of shape 	3G-1 3G-2	<p>Chn to be more detailed in describing properties of 2D shapes, including lengths of lines, and acute or obtuse angles for angles greater or less than a right angle.</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 2 1	<p>Addition and Subtraction (Calculation Policy A6 and S10)</p> <ul style="list-style-type: none"> To add 2-digit and 3-digit numbers using formal written methods (not crossing the 10 or 100) To add 2-digit and 3-digit numbers using formal written methods (crossing the 10 or 100) To subtract 2-digit and 3-digit numbers using formal written methods (not exchanging the 10 or 100) To subtract 2-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100) 	3AS-2	<p>Use of equipment to support understanding is essential here. They should see the physical exchange in both addition and subtraction. Use Diennes and Place Value counters.</p>

	<ul style="list-style-type: none"> To estimate the answer to a calculation 		
2	<p>Multiplication (Calculation Policy M4, M4a)</p> <ul style="list-style-type: none"> To write and calculate mathematical statements for multiplication, including multiples of 10 times one-digit M4, M4a To write and calculate mathematical statements for multiplication, including multiples of two-digit times one-digit (no exchange) M4, M4a To write and calculate mathematical statements for multiplication, including multiples of two-digit times one-digit (no exchange) M4, M4a To solve problems, including missing number problems, involving multiplication and division M4, M4a 	3MD-1	<p>Gradual approach. Teach 30x4 using number line M4 and with jottings M4a.</p> <p>Then teach by partitioning on number line M4 and with jottings M4a (place value important). Progress as appropriate for your class to gage concept.</p> <p>Deepen understanding of methods by having missing number problems in parts of calculations.</p>
3	<p>Division (Calculation Policy D8, D9)</p> <ul style="list-style-type: none"> To write and calculate mathematical statements for division, including multiples of 10 by one-digit D8, D9 To write and calculate mathematical statements for division, including two-digit by one-digit D8, D9 To solve problems, including missing number problems, involving division D8, D9 To solve problems involving multiplication and division, including scaling problems 	3MD-1	<p>Same gradual approach as multiplication – identify the multiples of ten and then divide the rest then recombine (link to place value work e.g. $84 \div 6 = 60$ and $24 \div 6$ so 10 and $4 = 14$)</p> <p>Use as an opportunity to reinforce both multiplication and division methods.</p>
4	<p>Fractions</p> <ul style="list-style-type: none"> To recognise and use fractions as numbers: unit fractions with small denominators To recognise and use fractions of discrete objects: non-unit fractions with small denominators To recognise and use fractions as numbers: non-unit fractions with small denominators 	3F-1 3F-2 3F-3 3F-4	<p>Discuss unit fractions as division by integers (e.g. when they have been dividing by 4 they have been finding $\frac{1}{4}$)</p> <p>Show $\frac{3}{4}$ as cubes first so, for example, move 12 into 4 piles of 3 then collect 3 of the piles of 3 so 9.</p>

	<ul style="list-style-type: none"> To add and subtract fractions with the same denominator within one whole (e.g. $\frac{3}{7} + \frac{2}{7} = \frac{5}{7}$) To compare and order fractions with the same denominator To solve problems that involve the above 		Use images and physically colour the addition and then explore adding on number lines (given the counting element they have already done) before moving on to just a mental method of adding the numerators
5	Measures (length/perimeter) <ul style="list-style-type: none"> To measure length in mm, cm or m To solve simple problems involving addition and subtraction of lengths To solve simple scaling problems To measure the perimeter of simple 2-D shapes To calculate the perimeter of regular 2-D shapes (and rectangles) 	3NPV-2 3NPV-3 3AS-2	Scaling – Micky’s pencil is twice as long or Micky’s house is 5 times as high as... Make links between known sides and because shapes are regular, all sides are the same.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum1 1	Place Value <ul style="list-style-type: none"> To count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number To recognise the place value of each digit in a three-digit number (hundreds, tens and ones) To deepen understanding of numbers up to 1,000 by partitioning them in different ways (e.g. $184 = 100 + 80 + 4$ or $160 + 24$, etc) To identify, represent and estimate numbers using different representations (including number lines) To read, write and compare and order numbers up to 1,000. To solve number problems and practical problems involving these ideas. 	3NPV-1 3NPV-2 2NPV-3	Nothing new. Deepen understanding and reinforce learning.
2	Multiplication and Division	3MD-1	Reinforce methods here together.

	<ul style="list-style-type: none"> To write and calculate mathematical statements for multiplication and division, including multiples of two-digit times one-digit M4, M4a, D8, D9 To multiply and divide two-digit numbers by one-digit (doubling and halving) To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. To solve problems, including missing number problems, involving multiplication and division, including scaling problems and correspondence problems in which n objects are connected to m objects. 		
3	<p>Addition and Subtraction (Calculation Policy A6 and S10)</p> <ul style="list-style-type: none"> To add 3-digit and 3-digit numbers using formal written methods (not crossing the 10 or 100) To add 3-digit and 3-digit numbers using formal written methods (crossing the 10 or 100) To subtract 3-digit and 3-digit numbers using formal written methods (not exchanging the 10 or 100) To subtract 3-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100) To use the inverse to find missing numbers (where necessary e.g. $234 - _ = 112$ is still a subtraction: part whole model may help here) 	3AS-2	Should be able to follow methods without equipment? May want it as a visual on IWB during input?
4	<p>Shape</p> <ul style="list-style-type: none"> To draw and measure 2D shapes connecting decimals and rounding in cm To make 3D shapes and recognise them in different orientations and describe them. To recognise angles as a property of shape or a description of a turn Identify horizontal and vertical lines and pairs of parallel lines. 		Opportunity to reinforce and extend from prior learning.

5	Measures (mass/capacity) <ul style="list-style-type: none"> To measure and compare mass in kg and g To add and subtract mass in the context of simple problems To measure and compare capacity in l and ml To add and subtract capacity in the context of simple problems 	3NPV-2 3NPV-3 3AS-2	Chn to convert in same way as length – will be first time they see mixed units (e.g. 2kg and 300g = 2,300g)
6	Data handling <ul style="list-style-type: none"> To present data in bar charts (1-1). To interpret data in bar charts (1-1) by solving one-step and two-step questions. To present data in bar charts (2, 5 and 10). To interpret data in bar charts (2, 5 and 10) by solving one-step and two-step questions. 		Link to previous forms and show comparisons when constructing bar charts. Very visual – looking at each component, showing them how they have seen it previously and how it relates to a bar chart.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum2 1	Addition and Subtraction (Calculation Policy A4, MS1, MS2, A6 and S10) <ul style="list-style-type: none"> To add and subtract numbers mentally, including: <ul style="list-style-type: none"> ✓ 3-digit and ones ✓ 3-digit and tens ✓ 3-digit and hundreds To add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. To solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction. To estimate the answer to a calculation and use the inverse operations to check answers 	3AS-3	Look to develop fluency and sense of number this week. Chn have seen all of the methods and so should be confident. Chn to see methods mixed together and decide how best to answer them efficiently. Chn to see the varied questions within problems and again select appropriate methods to calculate.

2	<p>Multiplication and Division</p> <ul style="list-style-type: none"> To write and calculate mathematical statements for multiplication and division, including multiples of two-digit times one-digit M4, M4a, D8, D9 To multiply and divide two-digit numbers by one-digit (doubling and halving) MM5 To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. To solve problems, including missing number problems, involving multiplication and division, including scaling problems and correspondence problems in which n objects are connected to m objects. 	3MD-1	Nothing new. Lots of opportunity to deepen understanding and problem solve.
3	<p>Fractions</p> <ul style="list-style-type: none"> To count up and down in tenths, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ To recognise and use fractions as number: unit and non-unit fractions with small denominators To recognise and show, using diagrams, equivalent fractions with small denominators To compare and order unit fractions, and fractions with the same denominator To add and subtract fractions with the same denominator within one whole To solve problems that involve the above 	3F-1 3F-2 3F-3 3F-4	Reinforce and deepen learning at this point. No new concepts.
4	<p>Time</p> <ul style="list-style-type: none"> To record and compare time in terms of seconds, minutes and hours To tell and write the time (with increasing accuracy to the nearest minute) from an analogue clock, including using Roman Numerals I-XII To tell the time using 12-hour clock and use vocabulary of a.m./p.m., morning, afternoon, noon and midnight. 		

	<ul style="list-style-type: none">• To tell and write the time from analogue and digital clocks in 24-hour clock• To calculate and compare durations of events.		Chn to be aware of 24-hour clock and what time of the day it refers to. <u>Do not</u> have to convert between 12 and 24-hour.
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Year 4 Maths Scheme of Work

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 1 1	Place Value (up to 1,000) <ul style="list-style-type: none"> • To count from 0 in multiples of 6 and 25 • To read, write and compare and order numbers up to 1,000. • To recognise the place value of each digit in a three-digit number (hundreds, tens and ones), including non-standard partitioning (e.g. $184 = 100+80+4$ or $160+24$, etc) • To identify, represent and estimate numbers using different representations (including number lines) • To find 10 or 100 more or less than a given number. • To solve number problems and practical problems involving these ideas. 	 4NPV-2 4NPV-3	Up to 1,000 covered in Year 3. Important to partition in different ways for link to division and multiplication (e.g. $184 \div 4 = 160 \div 4$ and $24 \div 4$ so $40+6=46$)
2	Addition and Subtraction with money (Calculation Policy A4, MA4, MS1 and MS2) <ul style="list-style-type: none"> • To add two two-digit numbers mentally • To subtract two two-digit numbers mentally • To estimate and use inverse operations to check answers to a calculation • To solve addition and subtraction one and two-step problems in context of money. 		Keep pound and pence separate as learning in Year 3. Address decimal notation of money after teaching of fractions. Prior learning has taught chn to count on and back to subtract. Allow chn to do whichever works best for them but could also investigate when it is more fluent to do each.
3	Addition and Subtraction (Calculation Policy A6 and S10) <ul style="list-style-type: none"> • To add 2 or 3-digit and 3-digit numbers using formal written methods (crossing the 10 or 100) • To subtract 2 or 3-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100) • To add and subtract 2 or 3-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100) 		Chn to use equipment initially if required to gain a more secure understanding of exchanging (they have done this already in Year 3) but may be needed. Physical exchanges to be seen on IWB in input as minimum.

	<ul style="list-style-type: none"> To estimate and use the inverse to find missing numbers (where necessary e.g. $234 - __ = 112$ is still a subtraction: part whole model may help here) 		
4	<p>Multiplication and Division</p> <ul style="list-style-type: none"> To recall multiplication and division facts for previously learned tables To recall multiplication facts for 6 times-table. To recall division facts for 6 times-table To multiply by 0 and 1; and to divide by 1 and itself To multiply together three numbers MM2 To solve problems involving multiplication and division, including correspondence problems in which n objects are connected to m objects. 	4NF-1 4MD-2	<p>Have previously learned 2, 3, 4, 5, 8 and 10 times table.</p> <p>Counted in 6s first week of term. Keep the multiplication and division as separate sessions to embed times-table knowledge.</p> <p>Use tables covered so far. Commutative approach Done this in Year 3: n objects to m objects e.g. 3 hats and 4 shirts how many combinations? $3 \times 4 = 12$. Teach chn to methodically list them, etc Or four cakes between 8 friends</p>
5	<p>Multiplication and Division (Calculation Policy MM1a)</p> <ul style="list-style-type: none"> To recall multiplication facts for 9 times-table To recall division facts for 9 times-table To use my knowledge of place value to multiply and divide whole numbers by 10 MM1a To use my knowledge of place value to multiply and divide whole numbers by 100 MM1a To use my knowledge of place value, known and derived facts to multiply and divide mentally 	4NF-1 4MD-2 4MD-1	<p>$3 \times 4 = 12$ so $30 \times 4 = 120$ or $600 \div 2 = 300$ can be derived from $2 \times 3 = 6$.</p> <p>A combination of identifying times table facts and then place value knowledge of ten/hundred times bigger/smaller</p>
6	<p>Fractions</p> <ul style="list-style-type: none"> To recognise and use fractions as shape and objects: unit and non-unit fractions with small denominators To recognise and use fractions as number: unit and non-unit fractions with small denominators To find the whole amount from a given unit fraction 	3F-1 3F-2	<p>Chn have previously learned to find unit and non-unit fractions with small denominators – using pictures, objects and numbers; and compared unit fractions with small denominators using images and number lines</p> <p>Chn have explore half is 8 so whole is 16 previously or $\frac{1}{4}$ is 3 so the whole is 12</p>

	<ul style="list-style-type: none"> To recognise and show, using diagrams, families of common equivalent fractions To solve problems in quantities, including non-unit fractions where the answer is a whole number 		Simple problems where they apply the concept of a fraction
7	Shape <ul style="list-style-type: none"> To identify acute and obtuse angles To compare and order angles up to two right angles by size (a straight line) To compare and classify triangles To compare and classify quadrilaterals To compare and classify geometric shapes based on their properties and sizes 	4G-2	(e.g. isosceles, equilateral and scalene) (e.g. parallelogram, rhombus, trapezium) Regular or irregular polygons

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 2 1	Place Value (up to 10,000) <ul style="list-style-type: none"> To count from 0 in multiples of 9 and 1,000 To order and compare numbers beyond 1,000 To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) To identify, represent and estimate numbers using different representations (including number lines) To find 1,000 more or less than a given number. To solve number problems and practical problems involving these ideas. 	4NPV-2 4NPV-3	Include composing and decomposing numbers
2	Addition and Subtraction (Calculation Policy A6 and S10) <ul style="list-style-type: none"> To add up to four-digit numbers using formal written methods To subtract four-digit numbers using formal written methods 		No equipment. Stay expanded. More opportunity for problem solving and reasoning to secure methods before moving on next time to compact.

	<ul style="list-style-type: none"> To add and subtract four-digit numbers using formal written methods To estimate and use the inverse operation. To solve addition and subtraction two-step problems in context. 		
3	Multiplication and Division (Calculation Policy M4, M4a, D8 and D9) <ul style="list-style-type: none"> To recall multiplication and division facts for the 6 and 9 times-tables. To multiply two-digit numbers by a one-digit number M4/M4a To multiply three-digit numbers by a one-digit number M4/M4a To divide two-digit numbers by a one-digit number D8/D9 To divide three-digit numbers by a one-digit number D8/D9 To solve problems including missing number problems 	4NF-1 4MD-2 4MD-3	Tables to date: 2, 3, 4, 5, 6, 8, 9 - so use them in this week to gauge understanding of previously learned methods. Have already learned M4, M4a and D8, D9 Focus on fluency of methods. Add reasoning to deepen understanding of them. No remainders in answers
4	Fractions <ul style="list-style-type: none"> To add and subtract fractions with the same denominator (below one) To count up and down in $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ up to 10 To count up and down in $\frac{1}{6}$ and $\frac{1}{9}$ up to 10 To convert mixed numbers to improper fractions To convert improper fractions to mixed numbers To add and subtract fractions with the same denominator (above one) 	3F-4 4F-1 4F-2 4F-3	Have previously added and subtracted fractions with same denominator within a whole; and count in fractions beyond one Counting up and down on a number line supports the idea of what a fraction is and that they can total above one. Will support understanding of mixed numbers to have that visual.
5	Measures (area) <ul style="list-style-type: none"> To understand what area is To find the area of squares and rectangles by counting squares To find the area of rectilinear shapes by counting squares 		NEW CONCEPT Important to discuss language and help understand what area is (e.g. showing them shapes and asking which covers the most area). Link area of squares and rectangles to arrays (previously taught as part of multiplication) when counting squares.

	<ul style="list-style-type: none"> To compare areas of different shapes To solve problems involving area 		Find area with rectilinear. Deepen learning by finding shapes with area of $X\text{cm}^2$
6	Direction <ul style="list-style-type: none"> To describe position as co-ordinates in the first quadrant To plot position as co-ordinates in the first quadrant To translate points up/down or left/right To describe movements between positions as translations up/down and left/right 	4G-1	Use a cube on a grid and physically move

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 1 1	Place Value (up to 10,000) <ul style="list-style-type: none"> To count from 0 in multiples of 7 To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) To identify, represent and estimate numbers using different representations (including number lines) To round any number to the nearest 10 To round any number to the nearest 100 To round any number to the nearest 1,000. To solve number problems and practical problems involving these ideas. 	4NPV-1 4NPV-2 4NPV-3	Partition with place value and focus on the relationship between the columns so chn know that 10 hundreds are equal to 1 thousand and 1,000 is 10 times bigger than 100, etc Progress number line work here and use the visual to transition in to rounding (Could just do number line bit as starter as have already covered it – depends on success last time)
2	Addition and Subtraction (Calculation Policy A6&A7 and S10&S11) <ul style="list-style-type: none"> To add up to four-digit numbers using formal written methods To subtract four-digit numbers using formal written methods To add and subtract four-digit numbers using formal written methods To estimate and use the inverse operation. 		Teach compact method alongside expanded initially so chn can see all components involved. Transition to compact alone.

	<ul style="list-style-type: none"> To solve addition and subtraction two-step problems in context. 		
3	<p>Multiplication (Calculation Policy MM1a, M4a and M6)</p> <ul style="list-style-type: none"> To recall multiplication facts for the 7 times table. To use my knowledge of place value, known and derived facts to multiply mentally To multiply two-digit and three-digit numbers by one-digit M4a & M6 To multiply two-digit and three-digit numbers by one-digit M6 	<p>4NF-1</p> <p>4MD-2</p> <p>4MD-3</p>	<p>First lesson, teach the methods side by side so the chn can relate the place value and mental jotting into the formal presentation</p> <p>Teach second lesson with formal written method only M6</p>
4	<p>Fractions (Calculation Policy MM1a)</p> <ul style="list-style-type: none"> To count up and down in $\frac{1}{10}$ and $\frac{1}{100}$ To recognise and write decimal equivalent of any number of tenths To recognise and write decimal equivalent of any number of hundredth To find the effect of dividing a one-digit number by 10 To find the effect of dividing a one- or two-digit number by 100 	<p>4F-1</p> <p>4NPV-1</p>	<p>Use this week to link the idea of fractions and decimals both being part of a whole and them being equivalent. Make place value links – 1 split into 10 is tenths; 100 is hundredths; 10 hundredths is one tenth, etc</p> <p>Stay within one when looking at decimals this time</p>
5	<p>Time</p> <ul style="list-style-type: none"> To know the relationship between days and hours, hours and minutes, and minutes and seconds To know the relationship between years and months, months and days, and weeks and days To solve problems involving converting from hours to minutes; minutes to seconds; years to months; and weeks to days To read and write the time using analogue and digital 12-hour clocks To tell and write the time from analogue and digital clocks in 24-hour clock 		<p>Recap of learning in Year 3 here. Use to consolidate ability to tell time. Do not strictly convert between 12- and 24-hour yet. Use it to build a foundation and understanding of what 24-hour time is.</p>

6	<p>Data handling</p> <ul style="list-style-type: none"> To present discrete data using appropriate graphical methods, including bar charts. To interpret discrete data using appropriate graphical methods, including bar charts. To present continuous data using appropriate graphical methods, including line graphs To interpret continuous data using appropriate graphical methods, including line graphs To solve comparison, sum and difference problems using information presented in bar charts and linetime graphs 		<p>Previously learned about tally charts, pictograms and bar charts</p> <p>Establish difference between the sets of data. Take time constructing the different parts of the graph so they are more fluent when it comes to interpreting them.</p>
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Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
<p>Spr 2</p> <p>1</p>	<p>Division (Calculation Policy D9 and D10)</p> <ul style="list-style-type: none"> To recall division facts from the 7 times table To use my knowledge of place value, known and derived facts to divide mentally To divide two-digit and three-digit numbers by one-digit using formal written layout D10 To divide two-digit and three-digit numbers by one-digit using formal written layout D10 	<p>4NF-1</p> <p>4MD-2</p> <p>4MD-3</p>	<p>Teach with Diennes first time and physically split the equipment (e.g. $132 \div 4$ the 100 block can't be shared so exchange it into tens column for ten 10s. Split the 13 tens into groups of 4 giving 3 and exchange the one ten for 10 ones then divide the 12 ones by 4 to get an answer. Move away from equipment day 2?</p>
<p>2</p>	<p>Measures (length and perimeter)</p> <ul style="list-style-type: none"> To write mixed measures with decimals To convert between different units of measure cm to mm; m to cm To measure the perimeter of squares and rectangles in cm or m To calculate the perimeter of squares and rectangles in cm or m 		<p>3cm and 4mm becomes 3.4cm, etc. Reinforce links to what a decimal is (from previous fraction work)</p> <p>Apply knowledge of times ten and decimals converting from larger to smaller units.</p> <p>Chn have previously measured in mm, cm and m; solved problems involving length (including scaling); and calculated the per of simple and regular 2D shapes</p>

	<ul style="list-style-type: none"> To measure the perimeter of rectilinear shapes in cm or m To calculate the perimeter of rectilinear shapes in cm or m 		<p>Can challenge chn with the formula $2(a+b)$ for perimeter of rectangles</p> <p>Deepen learning with perimeter given and they find sides – talk difference of rectangles or squares</p> <p>Rectilinear – challenge and deepen with missing sides: links to addition and subtraction/missing numbers</p>
3	<p>Fractions (Calculation Policy MM1a)</p> <ul style="list-style-type: none"> To count up and down in $1/10$ (and 0.1) and $1/100$ (and 0.01) To recognise and write decimal equivalent of any number of tenths or hundredth To find the effect of dividing a one- or two-digit number by 10 or 100 To recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. To count up and down in $\frac{1}{4}$ (0.25) and $\frac{1}{2}$ (0.5) 	4NPV-1	<p>Count in decimals and fractions together (again beyond one)</p> <p>Using counting links and mixed number knowledge from last time can go beyond one (e.g. $42/10 = 4.2$)</p>
4	<p>Fractions</p> <ul style="list-style-type: none"> To convert fractions ($1/10$s, $1/100$s, $\frac{1}{4}$ and $\frac{1}{2}$) to decimals To represent numbers with one decimal place on a number line To round decimals with one decimal place to the nearest whole number To represent numbers with two decimal places on a number line To compare decimals with the same number of decimal places up to two decimal places To order decimals with the same number of decimal places up to two decimals 		<p>Continue to convert (beyond one where appropriate)</p> <p>Use the context of measures</p>
5	<p>Measures Money (decimal notation)</p> <ul style="list-style-type: none"> To convert pound and pence to decimal notation To understand the relationship between money decimal notation and place value To compare amounts of money 		<p>Chn have previously dealt with pound and pence separately but should be aware of all coins/notes at this point.</p>

	<ul style="list-style-type: none"> To order amount of money To estimate with money (including rounding to nearest £) 		<p>Again, deepen the concept of decimal here – link to fraction and previous measure work (e.g. £4 and 50p is £4.50)</p> <p>Embed the relationship that 1p is one hundredth of £1 so £0.01 and 10p in a tenth so £0.10. Then ten 1ps (hundredths) is one 10p (tenth) – chance to embed place value understanding.</p>
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Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum1 1	Place Value (up to 10,000) <ul style="list-style-type: none"> To order and compare numbers beyond 1,000. To round any number to the nearest 10, 100 or 1,000. To find 10, 100 or 1,000 more or less than a given number. To count backwards through zero to include negative numbers. To read Roman Numerals to 100 (I to C) and know that over time, the number system changed to include the concept of zero and place value. To solve number problems and practical problems involving these ideas. 	4NPV-3	Objectives were separate last time. Challenge fluency and deepen understanding by combining them.
2	Addition and Subtraction (Calculation Policy A4, MA4, A7 and MS1, MS2, S11) <ul style="list-style-type: none"> To add and subtract numbers mentally To add and subtract four-digit numbers using formal written methods To estimate and use the inverse operation. To solve addition and subtraction two-step problems in context, deciding which operations and methods to use and why 		Focus on chn using most efficient methods (e.g. no need for columns when two two-digit numbers or counting on to solve 4,001 – 3,998)

<p>3</p>	<p>Multiplication and Division (Calculation Policy MM1a, M4a, M6, D9 and D10)</p> <ul style="list-style-type: none"> • To recall multiplication and division facts for multiplication tables up to 12x12 • To recognise and find factor pairs. • To multiply two-digit and three-digit numbers using formal written methods M6 • To divide two-digit and three-digit numbers using formal methods D10 • To efficiently solve multiplication and division calculations MM1a, M4a, M6, D9 and D10 • To solve problems involving scaling, with multiplication and adding 	<p>4NF-1</p> <p>4MD-1 4MD-2 4MD-3</p>	<p>Multiplication particularly important for tables check</p> <p>Embed methods</p> <p>Chn to decide on which methods are best to use for different types of questions. Chn reason as to why they chose each method</p> <p>Four times as long or half as much etc</p>
<p>4</p>	<p>Fractions</p> <ul style="list-style-type: none"> • To recognise and show, using diagrams, families of common equivalent fractions • To recognise and use fractions as number: unit and non-unit fractions with small denominators • To find the whole amount from a given unit fraction • To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number • To add and subtract fractions with the same denominator (above one) 	<p>4F-1 4F-2 4F-3</p>	<p>Challenge more able to discuss decimals too?</p> <p>Make links to multiplication and division here, including with tenths and hundredths</p>
<p>5</p>	<p>Shape</p> <ul style="list-style-type: none"> • To compare and classify geometric shapes based on their properties and sizes • To identify lines of symmetry in 2-D shapes • To identify lines of symmetry in 2-D shapes presented in different orientations 	<p>4G-2</p> <p>4G-3</p>	<p>Practical and folding shapes in first lesson</p> <p>Identify in diagrams and different orientations</p>

	<ul style="list-style-type: none"> To complete a simple symmetric figure with respect to horizontal and vertical lines of symmetry To complete a simple symmetric figure with respect to diagonal lines of symmetry 		
6	Direction <ul style="list-style-type: none"> To describe positions on a 2-D grid as co-ordinates in the first quadrant To describe movements between positions as translations up/down and left/right To plot specified points and draw sides to complete a given polygon 	4G-1	<p>First two objectives are repeats so lots of opportunity to reason and deepen understanding.</p> <p>Focus on completing shapes as challenge</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum2	Multiplication and Division (Calculation Policy MM1a, MM2, M4a, M6, D9 and D10)		Nothing new method-wise so deepen understanding, reason further and solve more problems.
1	<ul style="list-style-type: none"> To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers To multiply and divide two-digit and three-digit numbers by one-digit numbers using formal written layout M6 & D10 To solve problems involving correspondence problems such as n objects are connected to m objects 	4NF-1 4MD-1 4MD-2 4MD-3	<p>Build on from correspondence in Autumn term to 3 numbers (e.g 2 pairs of trainers, 5 t shirts and 3 pairs of trousers (2x5x3 so 30 combos)</p>
2	Measures Money <ul style="list-style-type: none"> To solve addition and subtraction problems with money. To solve multiplication and division problems with money. To solve fraction problems with money To solve scaling problems involving money 		<p>Last money focus was on embedding the decimal notation concept. Focus on calculating and problem solving with money</p> <p>Opportunity to reinforce fraction work (e.g. $\frac{1}{4}$ of Micky's pocket money is spent on sweets. He spends 90p on sweets; how much pocket money does he get?</p>

	<ul style="list-style-type: none"> To solve multi step problems involving all four operation and money 		Scaling – 4 mars bars cost 80p how much would 12 cost?
3	<p>Time</p> <ul style="list-style-type: none"> To read and write the time on an analogue or digital clock To convert time from 12-hour to 24-hour clock and vice versa To solve problems involving duration To solve problems involving converting from hours to minutes; minutes to seconds; years to months and weeks to day 		<p>Build on knowledge of times of day to directly convert between 12- and 24-hour clock</p> <p>No mention of duration as such but they do cover it in year 3, so an opportunity to reinforce.</p>
4	<p>Data handling</p> <ul style="list-style-type: none"> To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and line graphs To solve comparison, sum and difference problems using information presented in bar chart, pictograms, tables and other graphs 		

Year 5 Maths Scheme of Work

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 1 1	Place Value (up to 100,000) <ul style="list-style-type: none"> To read and write numbers up to 100,000. To determine the value of each digit in numbers up to 100,000 To order and compare numbers up to 100,000. To round any number to the nearest 10, 100 or 1,000. To find 10, 100 or 1,000 more or less than a given number. To solve number problems and practical problems involving these ideas. 	5NPV-2 5NPV-3	<p>Chn have previously used the skills from this week with numbers up to 10,000.</p> <p>Number lines to support understanding.</p>
2	Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11) <ul style="list-style-type: none"> To add and subtract numbers mentally A4, MA4, MA5 & MS1, MS2 To add four-digit numbers using formal written methods A7 To subtract four-digit numbers using formal written methods S11 To use the inverse operation with addition and subtraction. To solve addition and subtraction two-step problems in context, deciding which operations and methods to use and why 		<p>All mental methods taught previously except for round and adjust – MA5. Stick with 3 digits for most?</p> <p>Already done both formal written methods so a recap and deepening of understanding here.</p>
3	Multiplication (Calculation Policy M6 & M7) <ul style="list-style-type: none"> To understand the term multiples and identify them To recognise and use square numbers and the notation for square numbers (2) To recognise and use cube numbers and the notation for square numbers (3) To multiply two-digit and three-digit numbers by one-digit using formal written methods M6 	5NF-1	<p>Chn should know tables up to 12x12, have previously multiplied using expanded method – Calculation Policy M6</p> <p>Multiples: opportunity to reinforce tables knowledge Squares and Cubes: visual of cubes important but actually building is a waste of time. Establish 16 is the square number and 4x4 is the calculation.</p>

	<ul style="list-style-type: none"> To multiply three-digit numbers by one-digit using formal written methods M6 & M7 To multiply two-digit and three-digit numbers by one-digit using formal written methods M7 	5MD-3	<p>Ensure concepts and terms understood (problem solve later in year).</p> <p>Calculating: use expanded and then show them expanded alongside compact method to aid understanding.</p> <p>Focus on getting method correct.</p>
4	<p>Division (Calculation Policy D9 & D10)</p> <ul style="list-style-type: none"> To identify factors including finding factor pairs of a number. To identify common factors of two numbers To know and use the vocabulary prime numbers, prime factors and composite (non-prime) numbers. To divide two-digit and three-digit numbers by one-digit numbers D9 To divide three-digit numbers by one-digit numbers using the formal written method of division D10 	5NF-1 5MD-2 5MD-4	<p>Chn have previously found factor pairs in year 4. Have used D9 for smaller numbers and mental division and transitioned to formal written methods D10</p> <p>Ensure concepts and terms understood (problem solve later in year)</p>
5	<p>Measures (Area)</p> <ul style="list-style-type: none"> To calculate the area of rectangles (including squares) using square centimetres (cm²) and square metres (m²) To deepen my understanding of area by finding missing sides with rectangles and squares in cm and m To calculate the area of rectilinear shapes using square centimetres (cm²) and square metres (m²) To estimate volume (for example using 1cm³ blocks to build cubes and cuboids) and capacity (e.g. water) 	5G-2	<p>Taught in year 4 largely by counting squares. Could start here in input; link to arrays to then link to formula $l \times w = a$</p> <p>Link to times tables, factor pairs, etc from last week</p> <p>Give shapes split. Then with only sides needed and then all info and challenge to split in different ways</p> <p>Largely practical and the concept of how much is in a can, etc but some link to previous cube number work?</p>
6	<p>Fractions</p> <ul style="list-style-type: none"> To recognise and show, using diagrams, families of common equivalent fractions To recognise and show, using a number line, families of common equivalent fractions To find fractions of amounts: unit and non-unit fractions 	5F-1	<p>Chn have previously counted in fractions above 1; converted improper fractions and mixed numbers; found unit and non-unit fractions; added and subtracted fractions with same denominator; compared fractions with small denominators; found equivalent fractions using images</p>

	<ul style="list-style-type: none"> To find the whole amount from a given unit fraction To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number 		
7	Shape <ul style="list-style-type: none"> To distinguish between regular and irregular polygons based on reasoning about equal sides and angles To compare and classify triangles and quadrilaterals To name and describe 3D shapes To identify 3D shapes, including cubes and other cuboids, from 2-D representations To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles 	5G-1	Regular and irregular shapes covered previously. Types of triangles and quadrilaterals Y4 so should have good base. Previously done acute and obtuse but not reflex.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Aut 2	Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11) <ul style="list-style-type: none"> To add and subtract numbers mentally with increasingly large numbers A4, MA4, MA5 & MS1, MS2 To add and subtract whole numbers with more than four-digits using formal written methods A7 & S11 To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. To solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why 		Same strategies but bigger numbers e.g. $12,462 - 2,300 = 10,162$ or $11,453 + 3,999 = 15,452$, $2,002 - 1999 = 3$, etc
2	Multiplication and Division (Calculation Policy MM1a, M7 & D10) <ul style="list-style-type: none"> To fluently multiply and divide three-digit numbers by a one-digit number M7 & D10 	5MD-4	

	<ul style="list-style-type: none"> To interpret remainders appropriately for the context when dividing D10 To multiply and divide whole numbers and decimals by 10, 100 and 1,000 MM1a To multiply and divide numbers mentally drawing upon known facts To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	5NF-2 5MD-1	<p>Interpret: rounding up for number of taxis or down for full boxes, etc. $\frac{1}{4}$ for chocolate?</p> <p>Link between times tables and $\times 10, \times 100$ (e.g. 3×400 or $4,800 \div 60$)</p>
3	<p>Fractions</p> <ul style="list-style-type: none"> To count forwards and backwards in fractions with simple denominators To convert improper fractions to mixed numbers To convert mixed number to improper fractions To compare and order fractions whose denominators are all multiples of the same number To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths 	5F-2	<p>Go above one. Opportunity to reinforce previous counting, equivalent fractions as they appear and a prelude to converting and add/sub</p> <p>Start with comparisons of $\frac{1}{4}$ and $\frac{1}{3}$ (for example): don't need to convert as $\frac{1}{4}$ is a smaller portion then move to $\frac{2}{3}$ or $\frac{5}{6}$ and convert. Could be two lessons?</p>
4	<p>Fractions</p> <ul style="list-style-type: none"> To add and subtract fractions with the same denominator To add and subtract fractions with denominators that are multiples of the same number To add mixed numbers with the same denominator To subtract mixed numbers with the same denominator 	5F-2	<p>Where the answer exceeds 1, chn should be encouraged to write answer as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \text{ \& } \frac{1}{5}$)</p> <p><i>This will be conceptually difficult...</i></p> <p>Exploration of methods is important here:</p> <ol style="list-style-type: none"> Add wholes and then fraction and exchange the whole (or for subtraction exchange the fraction and then subtract) Convert the mixed number to an improper fraction, calculate and then present answer as a mixed number

5	Data handling (tables) <ul style="list-style-type: none"> To read and interpret information in tables To complete and construct tables of information To read and interpret information from two-way tables To complete information in two-way tables To read and interpret timetables To solve problems involving timetables 		<p>Previously learned about bar charts and line graphs using terms such as continuous and discrete data in year 4; and tally charts, pictograms and bar charts earlier in school</p> <p>Progress from simple tables to two-way tables, this should then help reading of timetables.</p>
6	Direction <ul style="list-style-type: none"> To describe and plot positions on a 2-D grid as co-ordinates in the first quadrant To describe and plot movements between positions as translations up/down and left/right To plot specified points and draw sides to complete a given polygon To identify, describe and represent the position of a shape following a translation, using appropriate language, and know that the shape has not changed. 		<p>First three objectives are repeats of year 4 so progress should be quick and opportunities to deepen understanding plentiful</p> <p>To ensure challenge, chn to translate with co-ordinates as well.</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 1 1	Place Value (up to 1,000,000) <ul style="list-style-type: none"> To read and write numbers up to 1,000,000 To determine the value of each digit in numbers up to 1,000,000 To order and compare numbers up to 1,000,000 To count forward or backwards in steps of 10, 100, 1,000, 10,000 or 100,000 from any number up to 1,000,000 To round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100,000 To solve number problems and practical problems involving these ideas. 	5NPV-2 5NPV-3	<p>Much the same learning as last time but with bigger numbers and more range in adding/subtracting or rounding.</p>

2	Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11) <ul style="list-style-type: none"> To use the inverse operation with addition and subtraction. To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. To solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why 		<p>Methods should be very fluent at this point. Look to deepen understanding, reason and solve problems involving addition and subtraction.</p>
3	Measures (perimeter) <ul style="list-style-type: none"> To convert between units of measure (km to m, cm to m, cm to mm) To measure and calculate the perimeter of squares and rectangles in cm To deepen understanding of perimeter by finding missing sides with rectangles and squares in cm and m To measure the perimeter of composite rectilinear shapes in cm To calculate the perimeter of composite rectilinear shapes in cm and m 	5NPV-5	<p>Chn have previously done this in year 4 so very much consolidation with squares and rectangles. Can challenge chn with the formula $2(a+b)$ for perimeter of rectangles</p> <p>Challenge to express working algebraically e.g. $4 + 2b = 20$ for a rectangle with sides 2cm and b cm and perimeter of 20cm Opportunity in measuring to point out the mathematical relationship between sides. Rectilinear – challenge and deepen with missing sides: links to addition and subtraction/missing numbers/inverse (last week)</p>
4	Fractions (Decimals) <ul style="list-style-type: none"> To understand the place value of each digit up to 2d.p. To convert fractions ($\frac{1}{10}$s, $\frac{1}{5}$, $\frac{1}{4}$ and $\frac{1}{2}$) to decimals To read and write decimal numbers as fractions To round decimals with two decimal places to one decimal place To round decimals with two decimal places to the nearest whole number 	5NPV-2 5NPV-4 5F-3	<p>Chn have previously converted tenths and hundredths; and $\frac{1}{2}$ and $\frac{1}{4}$ to decimals Include multiples of these fractions (e.g. $\frac{1}{5}=0.2$ $\frac{3}{5}=0.6$) Focus on $\frac{1}{10}$ and $\frac{1}{100}$s but challenge to recognise 0.25 as $\frac{1}{4}$ where appropriate</p> <p>Number lines to support concept and position of numbers</p>
5	Fractions (Decimals) <ul style="list-style-type: none"> To recognise and use thousandths and relate them to tenths and hundredths 		

	<ul style="list-style-type: none"> To recognise and use thousandths and relate them to decimals To order and compare numbers with up to 3 d.p. (same number of decimal places) To compare decimals with mixed decimal places up to 3d.p. To order decimals with mixed decimal places up to 3d.p. 	5NPV-1	Establish 10/1,000 is the same as 1/100 and 100/1,000 is the same as 1/10
6	Shape <ul style="list-style-type: none"> To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles To identify and calculate missing angles in a quarter turn (total 90°) To identify and calculate missing angles on a straight line and half turn (total 180°) To identify and calculate missing angles at a point and one whole turn (total 360°) To use the properties of rectangles to deduce related facts and find missing lengths and angles 	5G-1	<p>... links to missing number problems</p> <p>Opposite angles at a cross?</p> <p>Diagonal lines and equal angles?</p>

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Spr 2 1	Multiplication and Division <ul style="list-style-type: none"> To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers To know and use the vocabulary prime numbers, prime factors and composite (non-prime) numbers. To establish whether a number up to 100 is prime and recall prime numbers up to 19 To recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) 	5MD-2	Introduced to all concepts slowly in Autumn. Opportunity to deepen understanding and solve problems involving them.

	<ul style="list-style-type: none"> To solve problems involving multiplication and division including their knowledge of factors and multiples, squares and cubes 		
2	Fractions (Decimals) <ul style="list-style-type: none"> To add and subtract decimals within one To add and subtract decimals across one To mentally add and subtract tenths, and one digit whole numbers and tenths. To add and subtract decimals (and whole numbers) up to 3d.p. with the same number of decimal places To add and subtract decimals (and whole numbers) up to 3d.p. with mixed decimal places To solve problems involving numbers up to 3d.p. 		<p>Could reinforce previous mental methods adding decimals up to 2d.p. to and across one.</p> <p>Links to money and measure</p>
3	Fractions (Percentages) <ul style="list-style-type: none"> To recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred' To write percentages as fractions with denominator 100 To write percentages as decimals To convert percentages, fractions and decimals To calculate percentages of amounts for $\frac{1}{2}$ and $\frac{1}{4}$ 		<p>Can include fractions that will simplify down to 100 (e.g. $\frac{360}{400}$ is $\frac{90}{100}=90\%=0.9$)</p>
4	Measures (converting units) <ul style="list-style-type: none"> To convert between units of metric measure g to kg, ml to l, including decimal notation To calculate using mixed measures (e.g. kg to g; ml to l), including decimal notation To solve one step problems, involving all four operations, including decimal notation, using mixed measures (e.g. kg to g; ml to l) To use all four operations to solve problems involving measures (length, mass, volume), including decimal notation 	5NPV-5	<p>Have previously convert measures kg to g; l to ml but not since year 3 and always as separate measures (not decimals) e.g. $2,500\text{g}=2\text{kg}$ and 500g. Idea of decimals has been explored for money so may have some concept otherwise it is new</p> <p>Link back to multiplication and division work $\times 10$, $\times 100$, $\times 1,000$</p> <p>Build gradually teaching the chn to work in one unit of measure so first step is to convert.</p>

5	Data Handling (line graph) <ul style="list-style-type: none"> To complete and read line graphs To construct and draw line graphs To solve comparison, sum and difference problems using information presented in line graphs To solve comparison, sum and difference problems using information presented in bar charts To begin to decide which representations of data are most appropriate and why 		<p>Previously learned about bar charts and line graphs using terms such as continuous and discrete data in year 4</p> <p>Main focus on line charts – making strong links with work done on co-ordinates and scales to construct</p> <p>When deciding how to present data, chn need to think if it is discrete or continuous</p>
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Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum1 1	Place Value <ul style="list-style-type: none"> To count forwards and backwards through zero including negative numbers To interpret negative numbers in context To read Roman Numerals to 100 (I to C) To read Roman Numerals to 1,000 (M) and recognise years written in Roman Numerals To order and compare numbers up to 1,000,000 and determine the value of each digit To count forward or backwards in steps of 10, 100, 1,000, 10,000 or 100,000 from any number up to 1,000,000 To round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100,000 To solve number problems and practical problems involving these ideas 	5NPV-2 5NPV-3	<p>Introduced to negative numbers in counting only last year</p> <p>Roman Numerals to 100 in year 4</p> <p>Opportunity to cover any objectives here that need addressed from previous place value weeks. It does not have to be all of them if the chn have a good understanding: be selective and plan effectively.</p>
2	Multiplication and Division (Calculation Policy MM1a, M9 & D9) <ul style="list-style-type: none"> To multiply and divide decimals by 10, 100 and 1,000 MM1a	5NF-2 5MD-1 5MD-3	Consolidate and deepen understanding with missing numbers

	<ul style="list-style-type: none"> To multiply two-digit and three-digit numbers by two-digit using formal written methods M9 To multiply four-digit numbers by two-digit using formal written methods M9 To divide four-digit numbers by one-digit numbers D9 To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	5MD-4	For SEND may want to split calculation into unit and ten when multiplying (e.g. $43 \times 27 = 43 \times 7 + 43 \times 20$)
3	Money <ul style="list-style-type: none"> To calculate using all four operations in the context of money To solve addition and subtraction problems involving money To solve multiplication and division problems involving money, including decimal notation To solve one step problems involving all four operations with money, including decimal notation To solve multi step problems involving all four operations with money, including decimal notation 	5NPV-5	<p>Encourage chn to work in whole numbers and decimals when adding and subtracting. Chn to be fluent in changing pound to pence to allow multiplication and division to stay in whole numbers.</p> <p>Slow approach so chn have a secure concept of when they are doing each operation. They tend to struggle with identifying the correct operation so a lot of practical content and discussion required.</p>
4	Fractions (Percentages) <ul style="list-style-type: none"> To convert percentages, fractions and decimals To calculate percentages of amounts for 50% ($\frac{1}{2}$) and 25% ($\frac{1}{4}$) To calculate percentages of amounts for 10% ($\frac{1}{10}$) and 20% ($\frac{1}{5}$) To calculate percentages of amount for 1% ($\frac{1}{100}$) To solve problems involving percentages 		
5	Fractions <ul style="list-style-type: none"> To add and subtract fractions with denominators that are multiples of the same number To add and subtract mixed numbers with the same denominator 		Previously done separately. Progress in fluency doing them in the same session. May still need split into addition, subtraction and then a day combined.

	<ul style="list-style-type: none"> To multiply unit and non-unit fractions by whole numbers To multiply mixed numbers by whole numbers To solve problems involving mixed numbers, addition, subtraction and multiplication 		MULTPLYING NEW CONCEPT – use of images to support understanding must be used.
6	Shape <ul style="list-style-type: none"> To identify and calculate missing angles at a point (90°-360°) To measure angles in degrees ($^\circ$) To draw given angles To draw shapes to scale including accurate measurements of lengths and angles 	5G-1	Chn use conventional marking for parallel lines and right angles

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud...
Sum2 1	All Four Operations <ul style="list-style-type: none"> To add and subtract with whole numbers and mixed decimals To multiply numbers up to 4 digits by one- and two-digit numbers and divide four-digit numbers by one digit To multiply and divide whole numbers and decimals by 10, 100 and 1,000 To solve one-step problems involving all four operations. To solve multi-step problems involving all four operations. To solve scaling problems. 		Use the context of measures in the same way the money week ran in Summer 1 Week 3
2	Fractions/Decimals/Percentages <ul style="list-style-type: none"> To compare and order fractions whose denominators are all multiples of the same number To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths 		All concepts already taught so an opportunity to consolidate or deepen understanding wherever required. Not expected to cover everything in that box obviously.

	<ul style="list-style-type: none"> • To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $5\frac{2}{4} + 5\frac{4}{4} = 5\frac{6}{4} = 1\frac{5}{1}$] • To add and subtract fractions with the same denominator and denominators that are multiples of the same number • To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • To read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • To round decimals with two decimal places to the nearest whole number and to one decimal place • To read, write, order and compare numbers with up to three decimal places • To solve problems involving number up to three decimal places • To recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal • To solve problems which require knowing percentage and decimal equivalents of $\frac{2}{1}$, $\frac{4}{1}$, $\frac{5}{1}$, $\frac{5}{2}$, $\frac{5}{4}$ and those fractions with a denominator of a multiple of 10 or 25. 		
3	<p>Measures (converting units)</p> <ul style="list-style-type: none"> • To use all four operations to solve problems involving measures (length, mass, volume), including decimal notation • To solve problems involving measures (length, mass, volume), including decimal notation, including scaling 	5NPV-5	<p>Chance to build and challenge from last time.</p> <p>Scaling single values up to recipes. A line four times longer or how many grams needed for 16 cakes (from a recipe that serves 4), etc</p>

	<ul style="list-style-type: none"> • To understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • To solve problems involving converting between units of time 		<p>Including conversions of days to weeks and expressing answers as weeks and days</p>
4	<p>Direction</p> <ul style="list-style-type: none"> • To describe and plot positions on a 2-D grid as co-ordinates in the first quadrant • To plot specified points and draw sides to complete a given polygon • To identify shapes or objects that are reflected correctly • To reflect shapes in horizontal or vertical lines • To reflect shapes in horizontal or vertical lines in the first quadrant with co-ordinates 		<p><i>First two objectives are repeats: reflection is new...</i></p> <p>Reflection must always be parallel to the axes (vertical or horizontal; not diagonal)</p> <p>Progress from the shape touching the reflection line to having a gap</p> <p>Challenge to reflect in both horizontal and vertical?</p>