Autumn 2 is one week short to account for assessment and Xmas
Spr 2 has 3 extra days unaccounted for – again assessment
Sum 2 2 days - assessment

Class 1:

Week	Learning Objective	Teacher Notes
Aut 1 1	• Baseline • Baseline	
2	• Baseline • Baseline	
3	• RWI • Phonics Assessment • Core skills	
4	• Match, sort and compare • Match objects • Match pictures and objects • Identify a set •	
5	• Match, sort and compare • Sort objects to a type • Explore sorting techniques • Compare amounts	
6	• Talk about measure and patterns • Compare size • Compare mass Compare capacity	
7	• Talk about measure and patterns • Explore simple patterns • Copy and continue simple patterns • Create simple patterns	

Week	Learning Objective	Teacher Notes
Aut 2 1	• It's me 1, 2, 3 • Find 1, 2, 3 • Subitise 1, 2, 3 • Represent 1, 2, 3	
2	• It's me 1, 2, 3	

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	• 1 more • 1 less • Composition of 1, 2 and 3	
3	• Circles and Triangles	
	• Identify and name circles and triangles • Shapes in the environment • Describe position	
4	• 1, 2, 3, 4, 5	
	• Find 4 and 5 • Subitise 4 and 5 • Represent 4 and 5	
5	• 1, 2, 3, 4, 5	
	• 1 more • 1 less • Composition of 4 and 5	
6	• Shapes with 4 sides	
	• Identify and name shapes with 4 sides • Combine shapes with 4 sides • Shapes in the environment	

Week	**Learning Objective**	**Teacher Notes**
Spr 1	• Alive in 5	***Recount of World Book Day****
1	• Introduce zero • Find 0 to 5 • Subitise 0 to 5 • Represent 0 to 5	
2	• Alive in 5	
	• 1 more • 1 less • Composition • Conceptual subitising to 5	
3	• Mass and capacity	
	• Compare mass • Find a balance • Explore capacity • Compare capacity	
4	• Growing 6, 7, 8	1 more/1 less
	• Find 6, 7, 8 • Represent 6, 7, 8 • Composition of 6, 7, 8	
5	• Growing 6, 7, 8	

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	• Make pairs – odd and even • Double to 8 find a double • Double to 8 make a double	
6	• Growing 6, 7, 8	
	• Combine two groups • Conceptual subitising • 1 more/ 1 less	

Week	**Learning Objective**	**Teacher Notes**
Spr 2 1	• Length, Height and Time	***Recount of Trip****
	• Explore length • Compare length • Talk about time	
2	• Length, Height and Time	
	• Explore height • Compare height • Order and sequence time	
3	• Building 9 and 10	
	• Find 9 and 10 • Compare numbers to 10 • Represent 9 and 10 • Conceptual subitising to 10 • 1 more/ 1 less	
4	• Building 9 and 10	
	• Composition to 10 • Bonds to 10 • Bonds to 10 • Doubles • Odd and even	

Week	**Learning Objective**	**Teacher Notes**
Sum 1 1	• Explore 3D shapes	3D shapes in the environment
	• Recognise and name 3-D shapes • Find 2-D shapes within 3-D shapes • Use 3-D shapes for tasks	
2	• Explore 3D shapes	
	• Identify more complex patterns • Copy and continue patterns • Patterns in the environment	

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3	• To 20 and Beyond	Verbal counting beyond 20 Verbal counting patterns
	• **Build numbers beyond 10 (10-13)** • **Continue patterns beyond 10 (10-13)** • **Build numbers beyond 10 (14-20)** • **Continue patterns beyond 10 (14-20)**	
4	• How many now?	
	• Add more • How many did I add? • Take away • How many did I take away?	
5	• Manipulate, compose and decompose	
	• Select shapes for a purpose • Rotate Shapes • Manipulate shapes • Explain shape arrangements	
6	• Manipulate, compose and decompose	
	• Compose shapes • Decompose shapes • Copy 2D shapes pictures • Find 2D shapes within 3D shapes	
7	• Sharing and Grouping	
	• Explore sharing • Sharing • Even and odd sharing	

Week	**Learning Objective**	**Teacher Notes**
Sum 2 **1**	• Sharing and Grouping	*PSC*
	• Explore grouping • Grouping • Play with and build doubles	
2	• Visualise, build and map	
	• Identify units of repeating patterns • Create own pattern rules • Explore own pattern rules • Replicate and build scenes and constructions	
3	• Visualise, build and map	
	• Visualise from different positions • Describe position • Give instruction to build • Explore maps	

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4	• Make connections	
	• Deepen understanding • Patterns and relationships	

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value – Counting (10)** • 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)** • 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)** • 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)** • 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	Gage whether S1 and S2 may need explore in one session. Previous week and ability to handle number line should inform this. It is important to teach Counting Back and Counting on together in this week. They

	• 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)		**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. Missing number work could, again, re-enforce the above work with 5 (for example).
5	**Addition/Subtraction: Number bonds to 10** • 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	Use Calculation Policy A2a to initially establish the bond and jump. Should become a memorised fact after that. Chn should know number bonds as rapid recall.
6	**Shape 2D** • 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	**Measure (length/height)** • 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**	**Place Value (20)** • 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 1and 2.

	• 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** • 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)** • 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	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). Children may not understand as long as they are fluent in adding. Use of counting in ones and then adding the bigger jumps on a number line (A2a) will support this. Re-enforce number bonds to 10 by completing addition of 3 single digits (MA3).
4	**Subtraction: below 20 (Calculation Policy S4 and S5)** • 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.	1AS-2	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).

	• To subtract numbers using number lines, counting on, (S4) with numbers below 20. • To solve simple one step problems that involve subtraction, using objects and pictures, including missing numbers (15 = __ -4)		
5	**Addition/Subtraction of Money (Money focus)** • 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. (could do 7+3 but they would have to make the 7p and 3p with physical coins) • To solve simple one step problems that involve addition and subtraction, using objects and pictures, including missing numbers (20=__-3)	1AS-2	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). Opportunity to re-enforce counting in 2s with the 2p coins.
6	**Geometry – Position and Direction** • 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	Link to shapes to re-enforce names. Challenge more able to make link between the clock and a clockwise turn.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 1 **1**	**Place Value (50)** • 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 odd and even. • To count in multiples of 5 from 0, including missing numbers in the sequences.	1NPV-1 1NF-2 1NF-2	Builds on from learning in Aut 2 week 1 and 2

2	**Addition/Subtraction: Number bonds to 20 (Calculation Policy A2a, MA3, S4, S5)** • 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	Re-enforce number bonds to 10 and then apply these to 20 – making strong links. Again, if needed, use A2a and S4/S5. Number bonds to 20 to be memorised facts.
3	**Fractions (1/2)** • 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)		Chn to know a half as two equal parts. 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) Very practical at every stage. When completing quantities start with counters to support the number.
4	**Grouping and Sharing (1/2) (Calculation Policy D3 & D4)** • 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)		Make the link to work from last week and division.
5	**Doubles/near doubles (addition)** • To calculate double calculations (as additions) using concrete objects in two piles. • To calculate double calculations (as addition) using pictorial representations (arrays)		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.

	• 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)** • 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)** • 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 **<u>alongside</u>** equal to, more than and less than.
2	**Addition/subtraction: up to and including number bonds to 20 (Calculation Policy A2a, MA3, S4, S5)** • 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.

	• 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)		Partitioning might be challenge for HA – ensure other are fluent in adding and subtracting using counting on and back.
3	**Fractions (1/4)** • 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 ¼ from there. Chn to explore making a whole from a quarter (e.g. so if ¼ is 2 then the whole is 8). Use cubes and diagrams to support.
4	**Grouping and Sharing (1/4)** • 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 ½ previously and strong links to last week.
5	**Shape 3D** • 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	• 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	**Addition/Subtraction** • 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	**Fractions (1/2 and ¼)** • 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.		Re-enforce prior learning by doing ½ or ¼ in all context at once; ½ and ¼ of objects etc within the same lesson. Make connections when given ½ or ¼ back to the whole.
4	**Multiplication and Division (Calculation Policy M1 and D4)** • 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	When calculating, keep answer 20 or below. All practical – chn are just beginning to make links between repeated addition and multiplication.
5	**Multiplication and Division (Calculation Policy M1 and D4)**	1NF-2	

	• 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)** • 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)** • 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	**Money and adding and subtracting (Calculation Policy A2a, MA3, S4, S5)** • To recognise the value of coins (up to 20p). • To recognise coins up to £2. • To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). • To find different combinations of coins to total the same amount. • 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.	1AS-2	Stay in pence and up to 20p. Use vocabulary, more than, less than, and symbols from last week, ><=, to compare. All addition and subtraction to be done practically with coins up to 20p (recap number bonds within this) Again, look to progress to using more advanced vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.
3	**Multiplication and Division (Calculation Policy M1 and D4)** • 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.		Re-enforce methods learned previously. Remember it is still very much repeated addition. Opportunities to reason and problem solve having embedded methods previously.
4	**Measures (capacity/volume)** • 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.		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value (to 50)** • 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)	1NPV-1 2NPV-1	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. 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. 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.
2	**Addition and Subtraction (Calculation Policy A2a, MA3, S4, S5)** • 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.	2AS-1	This learning has been covered in Year 1 and this is an opportunity to embed it before moving on. Give the chn opportunity to use practical equipment (cubes, Diennes, Numicon, Place Value counters) if needed but otherwise use calculation policy. When moving across the ten, HA may attempt partitioning (e.g. 7+5=7+3 then the 2). Chn should be encourage to find number bonds, doubles and near doubles when adding three single digits mentally. Number facts should become rapid recall.
3	**Addition and Subtraction (Calculation Policy A2a, MA3, S4, S5)** • 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.	2AS-1	Continue to embed facts to 20 as rapid recall and introduce more problem solving.

	• 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)		vocabulary: put together, add, altogether, total, take away, distance between, more than and less than.
4	**Multiplication and Division (Calculation Policy M1, D4)** • 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	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. Counting in 2, 5 and 10 was done in year 1 so as a counting lesson can be one lesson. Teach the concept of multiplication and division this week. Very practical.
5	**Shape (2D)** • 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	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. Use vocabulary of sides and vertices accurately. Using squares or geoboard chn to complete shapes by adding lines or explore drawing simple shapes with straight lines.
6	**Measures (Length)** • 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		In Year 1, used comparative language, ordered, measured in cm with ruler and did simple addition and subtraction with length. Use language such as more than, difference, how much longer or shorter, combined or total (for example) and

	• 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** • 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)** • 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)** • 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. A2a - When moving across the ten, HA may attempt partitioning (e.g. 7+5=7+3 then the 2). Ensure children are fluent before this.

	• 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)** • 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	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. 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.
4	**Fractions** • To recognise, find and name fractions ½, ¼, 1/3 of shapes. • To recognise, find and name fractions ½, ¼, 1/3 of objects. • To recognise, find and name fractions ½, ¼, 1/3 of lengths. • To recognise, find and name fractions ½, ¼, 1/3 of quantities.		Chn have previously found half and quarter of shapes, objects and numbers below 20. They have also explore what the whole is when given ¼ (e.g. ¼ is 2 so the whole is 8) 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.
5	**Geometry - Position and Direction** • 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.		In year 1, chn have described, movements (forwards, backwards, etc), position (top, middle, left, etc) and turns (full, half, quarter, etc) Turns to be very practical including moving themselves and physically moving objects. Within patterns and sequences, use shapes in different orientations to reinforce that learning.

	• 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.		Beebots may be useful.
6	**Data Handling** • 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)** • 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)** • 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)	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.

	• To add and subtract a two-digit number and tens (**A3, MA2, S6)** • 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)		MA2 in there as a challenge to those who are secure with number line work. 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	**Addition and Subtraction (Calculation Policy A3, A3a, S6, S8)** • 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	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) 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.
4	**Multiplication and Division (Calculation Policy M2, D5)** • 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 (÷) 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	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.

	• To calculate multiplication and division statements for the 10 times table and write them using multiplication (x), division (÷) and equals (=) signs M2 and D5		
5	**Fractions** • To recognise, find and name fractions ½, ¼, 1/3 of shapes, objects and quantities. • To recognise, find and name fractions ¾ of shapes. • To recognise, find and name fractions ¾ of objects. • To recognise, find and name fractions ¾ of length. • To recognise, find and name fractions ¾ of quantities.		First objective a recap of previous learning so should only be one session. ¾ is first introduction into non-unit fractions: lots of exploration.
6	**Shape (3D)** • 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	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. You may want to do each property on separate days – depending on the classes ability to cope.
7	**Time** • 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. • To tell and write the time to five-minute intervals and draw the hands on a clock face to show these times.		In year 1, some “time” language (before, after, morning,etc), days, months, on the hour and half past.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 2 **1**	**Place Value (up to 100)** • 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. • To use place value and number facts to solve problems up to 100.	1NPV-1 2NPV-1 2NPV-2	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) For number line work can challenge by the degree to which the number line is numbered and the degree of accuracy you expect.
2	**Addition and Subtraction (Calculation Policy A3, A3a, S6, S8)** • 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)		Ensure method is secure before moving on. vocabulary: put together, add, altogether, total, take away, distance between, more than and less than, **sum, difference, how many more**
3	**Multiplication and Division (Calculation Policy M2, D5)** • To calculate multiplication and division statements for the 2, 5- and 10-times table and write them using	2MD-1 2MD-2	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)

	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		
4	**Measures (mass and capacity)** • 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** • 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)** • To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.	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.

	• To add and subtract numbers **mentally,** including: • 2-digit and ones • 2-digit and tens • Two 2-digit numbers • Three 1-digit numbers		
3	**Multiplication and Division (Calculation Policy M3)** • 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	Facts at this point should be rapid recall. Could introduce the 3s as they have counted in 3s in Place Value. 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. Use real world contexts to solve problems where set out in arrays.
4	**Fractions** • To recognise, find and name fractions ½, ¼, 1/3 of shapes, objects and quantities. • To recognise, find and name fractions ¾ of shapes, objects and quantities. • To recognise the equivalence of 2/4 and ¼ of shapes and objects. • To count in fractions beyond one and up to 10 on a number line.		Deepen learning of unit and non-unit fractions Reinforce the concept of fractions and that they can add up to more than one. Support with pictures.
5	**Shape (2D and 3D)** • 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.	2G-1	2D and 3D shapes mixed in together this week – having already covered both separately.

	• 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		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Sum2 **1**	**Addition and Subtraction (Calculation Policy A4, MS1 and MS2)** • 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)** • 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 • To solve simple problems in a practical context involving addition and subtraction of money, including giving change.	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** Find the total. Find the difference. Give change.
3	**Measures** • 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).		Build on previous learning from this year. Temperature is new to them.

	• To measure accurately using rulers, thermometers, scales and beakers. • To compare and order measures, using <, > and = • 4		
4	**Data Handling** • 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.		
5	**Direction and Time** • 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.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value** • 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.	3NF-2 2NPV-1 2NPV-2	Very similar to learning at the end of Year 2 so chn should be very fluent. An important concept later for mental division (e.g. 84÷6 = 60 and 24 ÷ 6 so 10 and 4 = 14) – in Spring
2	**Addition and Subtraction** • 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)	2AS-1 2AS-3 2AS-4	Chn have been taught this in Year 2. Reinforce prior learning. 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) Can model with number lines if needed but this should be mental work and almost recall at this point.

3	**Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)** • To add and subtract numbers **mentally,** including: • 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.	2AS-1 2AS-3 2AS-4 3NF-1	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) 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. May be enough for most to stay within 100 but could challenge HA to cross 100 (e.g. 84+28)
4	**Multiplication and Division (Calculation Policy M3)** • 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.	2MD-1 2MD-2	Repeat of last Year 2 week. Facts at this point should be rapid recall. Could introduce the 3s as they have counted in 3s in Place Value. 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. Use real world contexts to solve problems where set out in arrays.
5	**Fractions** • 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	3F-1 3F-2 3F-3	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. 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.

	• To recognise and use fractions of discrete objects: unit fractions with small denominators (link to times table work so far) • To count in fractions (1/4, 1/3, ½) beyond one and up to 10 on a number line		
6	**Measures (length)** • 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** • 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** • 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	**Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)** • To add and subtract numbers **mentally,** including: • 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	Focus on methods to secure knowledge. Use number lines during input to support understanding when working mentally. 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)
3	**Multiplication and Division (Calculation Policy visual of M2, D5 to support mental work)** • 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	Chn to work mentally in counting but use the images from previous learning M2 and D5 to support conceptual understanding. Mix in x2, x5 and x10 with x3 at this point *NB – have counted in 4s and 8s so could times table links be made – particularly more able (only if appropriate)*
4	**Fractions** • 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 (1/4, 1/3, ½) 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	Progress from last time by covering multiple unit fractions in one session. Make links between the part and whole (e.g. ¼=3 so the whole is 12) Move from cubes to numbers. Link to number line work or size of pieces (very visual) Use diagrams and number lines to show equivalence
5	**Time** • To know the number of seconds in a minute, minutes in an hour and number of hours in the day		Chn previously told the time to 5 minute intervals

	• 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** • 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.		Chn have previously done tallies, pictogram (including ratio of 2, 5 and 10) and block diagrams. Questions e.g. how many more? How many fewer?

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 1 **1**	**Place Value** • 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	 An important concept later for mental division (e.g. 184÷4 = 160 and 24 ÷ 4 so 40 and 6 = 46) – in Spring 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
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.

	• To add and subtract numbers **mentally,** including: • 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)** • 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	Have previously, as part of place value, counted in 4s and 8s. When teaching the 2, 4 and 8 times tables, chn to make connections through doubling. Simple scaling such as four times as high, eight times as long, etc
4	**Multiplication and Division (Calculation Policy MM5 and the reverse for halving)** • 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	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→20 and 6→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. →n objects to m objects e.g. 3 hats and 4 shirts how many combinations? 3x4=12. Teach chn to methodically list them, etc Or four cakes between 8 friends
5	**Measures (money)**		Should be familiar with all coins and making totals by counting in multiples from year 2. Have solved simple

	• 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	problems using totals, difference and change. Previously worked in £ or p: **not both** Make totals in pounds and pence separately initially, then convert between the two and then… 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?
6	**Shape** • 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 ¾ turn; and four right angles make a full turn. • To recognise angles as a property of shape	3G-1 3G-2	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.
7	**Measures (length/perimeter)** • 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…

Spr 2 **1**	**Addition and Subtraction (Calculation Policy A6 and S10)** • 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) • To estimate the answer to a calculation	3AS-2	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.
2	**Multiplication (Calculation Policy M4, M4a)** • 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	Gradual approach. Teach 30x4 using number line M4 and with jottings M4a. Then teach by partitioning on number line M4 and with jottings M4a (place value important). Progress as appropriate for your class to gage concept. Deepen understanding of methods by having missing number problems in parts of calculations.
3	**Division (Calculation Policy D10)** • To write and calculate mathematical statements for division, including multiples of 10 by one-digit • To write and calculate mathematical statements for division, including two-digit by one-digit D10 • To solve problems, including missing number problems, involving division **D10** • To solve problems involving multiplication and division, including scaling problems	3MD-1	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÷6 = 60 and 24 ÷ 6 so 10 and 4 = 14) Teach with Diennes first time and physically split the equipment (e.g. 132÷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. No exchanges or remainders. Move away from equipment day 2?

			Use as an opportunity to reinforce both multiplication and division methods.
4	**Fractions** • 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 • To add and subtract fractions with the same denominator within one whole (e.g. 3/7+2/7=5/7) • To compare and order fractions with the same denominator • To solve problems that involve the above	3F-1 3F-2 3F-3 3F-4	Discuss unit fractions as division by integers (e.g. when they have been dividing by 4 they have been finding ¼) Show ¾ as cubes first so, for example, move 12 into 4 piles of 3 then collect 3 of the piles of 3 so 9. 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

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Sum1 **1**	**Place Value** • 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.	3NPV-1 3NPV-2 2NPV-3	Nothing new. Deepen understanding and reinforce learning.

	• To solve number problems and practical problems involving these ideas.		
2	**Multiplication and Division** • To write and calculate mathematical statements for multiplication, including multiples of two-digit times one-digit M4, M4a • To write and calculate mathematical statements for division, including multiples of two-digit times one-digit D10. • 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.	3MD-1	Reinforce methods here together. Heavily resourced – introduced exchanges when using short division method.
3	**Addition and Subtraction (Calculation Policy A6 and S10)** • 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	**Shape** • To draw and measure 2D shapes connecting decimals and rounding in cm		Opportunity to reinforce and extend from prior learning.

	• 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.		
5	**Measures (mass/capacity)** • 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)
	•		

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)** • To add and subtract numbers **mentally,** including: • 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	**Multiplication and Division** • To write and calculate mathematical statements for multiplication, including multiples of two-digit times one-digit M4, M4a • To write and calculate mathematical statements for division, including multiples of two-digit times one-digit D10. • 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. Use resources with equipment and include exchanges,
3	**Fractions** • To count up and down in tenths, ½, ¼, 1/3, 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	**Time** • 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. • 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. **Do not** have to convert between 12 and 24-hour.
5	**Data handling** • 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…
Aut 1 **1**	**Place Value (Year 4; Year 3)** • To count from 0 in multiples of 6 and 25. To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • To read and write numbers up to 1,000. • To compare and order numbers from 0 up to 1,000; use <, > and = • To recognise the place value of each digit in a three-digit number (hundreds, tens and ones) • To identify, represent and estimate numbers using different representations (including number lines) • To solve number problems and practical problems involving these ideas.	3NF-2 3NPV-1 3NPV-2 4NPV-3	Up to 1,000 will be revision for Year 4 and new to Year 3 (stay practical?) ***Taken away time to do individual weeks based on times tables as in Year 3 and Year 4. Will have to be skilful with "times table lesson".***
2 & 3	**Addition and Subtraction (Calculation Policy A4 with support of A3, A3a and MS1 & MS2 with support of S6, S8)** • To add and subtract numbers mentally, including 2-digit and ones; and 2-digit and tens. • To add two two-digit numbers mentally • To subtract two two-digit numbers mentally • To add and subtract numbers **mentally,** including: • 3-digit and ones (crossing the ten) • 3-digit and tens (crossing the hundred) • 3-digit and hundreds • To estimate and use inverse operations to check answers to a calculation • To solve problems with addition and subtraction using concrete objects and pictorial representations, involving numbers, quantities and money.	2AS-1 2AS-3 2AS-4 3NF-1 3AS-3	Recap of year 2 pretty much. Practical resources may help the lower ability: Diennes, PV counters, 100 square, etc. Focus on methods to secure knowledge. 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. May be enough for most to stay within 100 but could challenge HA to cross 100 (e.g. 84+28) Plenty of time to explore with equipment, ensure secure and develop a depth through missing numbers, etc
4	**Multiplication and Division**		Y4 Have previously learned 2, 3, 4, 5, 8 and 10 times table.

	• To recall multiplication and division facts for previously learned tables • To recall multiplication and division facts for 6 (3) 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	Counted in 6s first week of term. Keep the multiplication and division as separate sessions to embed times-table knowledge. 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? 3x4=12. Teach chn to methodically list them, etc Or four cakes between 8 friends
5	**Multiplication and Division (Calculation Policy MM1a)** • To recall multiplication facts for 9 (4 & 8) times-table • To recall division facts for 9 (4 & 8) 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** (not a Year 3 LO but they should cope. Focus on Year 4 achieving this) • To use my knowledge of place value, known and derived facts to multiply and divide mentally	4NF-1 4MD-2 4MD-1	3x4=12 so 30x4=120 or 600÷2=300 can be derived from 2x3=6. A combination of identifying times table facts and then place value knowledge of ten/hundred times bigger/smaller
6	**Fractions** • 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 (1/4, 1/3, ½) 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	Progress from last time by covering multiple unit fractions in one session. Make links between the part and whole (e.g. ¼=3 so the whole is 12) Move from cubes to numbers. Link to number line work or size of pieces (very visual) Use diagrams and number lines to show equivalence

7	**Shape** • 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 identify lines of symmetry in 2-D shapes • To complete a simple symmetric figure with respect to horizontal and vertical lines of symmetry • To name, identify and describe the properties of 3D shapes	3G-2 4G-3	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.
Aut 2 **1**	**Place Value (Year 4; Year 3)** • To count from 0 in multiples of 9 and 1,000. 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), including non-standard partitioning (e.g. 184 = 100+80+4 or 160+24, etc). To deepen understanding of numbers up to 100 by partitioning them in different ways (e.g. 72 = 70+2 or 60+12, etc) • To find 10 or 100 more or less than a given number. **(Year 4 up to 10,000; Year 3 up to 1,000)** • To order and compare numbers beyond 1,000/100. • To recognise the place value of each digit in a four-digit/three-digit number (thousands, hundreds, tens and ones/HTU) • To identify, represent and estimate numbers using different representations (including number lines)	4NPV-2 3NPV-1 3NPV-2	Important to partition in different ways for link to division and multiplication (e.g. 184÷4= 160÷4 and 24÷4 so 40+6=46) An important concept later for mental division (e.g. 84÷6 = 60 and 24 ÷ 6 so 10 and 4 = 14) – in Spring 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. 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
2	**Addition and Subtraction (Calculation Policy A4 and S6; then A6 and S11)** • To add and subtract numbers mentally, including 3-digit and ones; 3-digit and tens; and 3-digit and hundreds. • To add 2-digit and 3-digit numbers using formal written methods (not crossing the 10 or 100)	3AS-3 3AS-2	Consolidate mental addition and subtraction as one LO – was separate last time

	• 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) • 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)		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. Year 4 have seen this so should be more familiar: can't imagine it will do any harm though.
3	**Multiplication (Calculation Policy M4, M4a)** • 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 (exchange) M4, M4a • To solve problems, including missing number problems, involving multiplication and division **M4, M4a**	3MD-1	Gradual approach. Teach 30x4 using number line M4 and with jottings M4a. Then teach by partitioning on number line M4 and with jottings M4a (place value important). Progress as appropriate for your class to gage concept. Deepen understanding of methods by having missing number problems in parts of calculations.
4	**Division (Calculation Policy D8, D9)** • To write and calculate mathematical statements for division, including multiples of 10 by one-digit • To write and calculate mathematical statements for division, including two-digit by one-digit D10 • To solve problems, including missing number problems, involving division **D10** • To solve problems involving multiplication and division, including scaling problems	3MD-1	***Option to embed the multiplication partition as a starter or first lesson before making the link to division.*** 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÷6 = 60 and 24 ÷ 6 so 10 and 4 = 14) D10 - Teach with Diennes first time and physically split the equipment (e.g. 132÷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? Use as an opportunity to reinforce both multiplication and division methods.
5	**Fractions** • 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 • To add and subtract fractions with the same denominator within one whole (e.g. 3/7+2/7=5/7) • 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) • To solve problems that involve the above	3F-1 3F-2 3F-3 3F-4	Discuss unit fractions as division by integers (e.g. when they have been dividing by 4 they have been finding ¼) Show ¾ as cubes first so, for example, move 12 into 4 piles of 3 then collect 3 of the piles of 3 so 9. 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 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.
6	**Time** 1. To know the number of seconds in a minute, minutes in an hour and number of hours in the day 2. To know the number of days in each month, year and leap year. 3. To tell and write the time (to the hour, half past and quarters) from an analogue clock, including using Roman Numerals I-XII 4. To tell and write the time (to 5 minute intervals) from an analogue clock, including using Roman Numerals I-XII 5. To calculate and compare the duration of events.		Chn previously told the time to 5 minute intervals Introduce duration and keep simple. Inside an hour on round numbers.
Spr 1 **1**	**Place Value (Year 4 up to 10,000; Year 3 up to 1,000)** • To count from 0 in multiples of 50 and 100. To count from 0 in multiples of 7	4NPV-1	

	• 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 recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) • To find 10 or 100 more or less than a given number. To find 1,000 more or less than a given number. • To round any number to the nearest 10 (not a Year 3 LO but they should cope. Focus on Year 4 achieving this) • To round any number to the nearest 100 (not a Year 3 LO but they should cope. Focus on Year 4 achieving this) • To solve number problems and practical problems involving these ideas.	3NPV-2 4NPV-2 4NPV-3	An important concept later for mental division (e.g. 184÷4 = 160 and 24 ÷ 4 so 40 and 6 = 46) – in Spring Include composing and decomposing numbers ***Use this LO (**To identify, represent and estimate numbers using different representations (including number lines)**) as a starter to *position numbers and identify the next 10 or 100*** (3NPV-3)
2	**Addition and Subtraction (Calculation Policy A6 and S11)** • To add 3-digit and 3-digit numbers using formal written methods (crossing the 10 or 100). To add up to four-digit numbers using formal written methods • To subtract 3-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100). To subtract four-digit numbers using formal written methods • To add and subtract 3-digit and 3-digit numbers using formal written methods (exchanging the 10 or 100). To add and subtract four-digit numbers using formal written methods • To estimate the answer to a calculation • To solve addition and subtraction two-step problems in context.	3AS-2	Should be able to follow methods without equipment? May want it as a visual on IWB during input? No equipment. Stay expanded. More opportunity for problem solving and reasoning to secure methods before moving on next time to compact. Opportunity to recap last week's rounding.
3	**Multiplication and Division (Calculation Policy MM1a, M4a and M6)** • To use my knowledge of place value, known and derived facts to multiply and divide mentally • (To multiply two-digit numbers by a one-digit number M4/M4a) – use as a starter for the LO below	4NF-1 4MD-2 4MD-3	Make sure 180/3 or 70x4 are automatic and mental.

	• To multiply two-digit and three-digit numbers by one-digit M4a & M6 Year 3 two-digit only • To multiply two-digit and three-digit numbers by one-digit M6 Year 3 two-digit only • (To divide two-digit numbers by a one-digit number D8/D9) – use as a starter for the LO below • To divide two-digit and three-digit numbers by one-digit using formal written layout D10 Year 3 two-digit only • To divide two-digit and three-digit numbers by one-digit using formal written layout D10 Year 3 two-digit only		First lesson, teach the methods side by side so the chn can relate the place value and mental jotting into the formal presentation Teach second lesson with formal written method only M6 Teach with Diennes and physically split the equipment (e.g. 132÷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 include exchanges within question. Move away from equipment day 2?
4	**Measures (length)** 1. To measure length in cm or m 2. To convert and compare lengths (cm and m) 3. To measure length in cm or mm 4. To add lengths in the context of simple problems 5. 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 Could use the measuring to pre-teach perimeter stuff (e.g. measure one side of a regular pentagon and rest are the same so x5 or measure a rectilinear shape, etc)
5	**Data handling** • 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.		1. To present data in pictograms (1-1, 2, 5 and 10). 2. To interpret data in pictograms (1-1, 2, 5 and 10) by solving one-step and two-step questions. ***Above LOs done in KS1 use as starter to link to bar charts***
6	**Measures (area)** 1. To understand what area is 2. To find the area of squares and rectangles by counting squares 3. To find the area of rectilinear shapes by counting squares 4. To compare areas of different shapes 5. To solve problems involving area		NEW CONCEPT Important to discuss language and chn 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. Find area with rectilinear. Deepen learning by finding shapes with area of Xcm^2

7	**Data handling** 1. To present data in tables. 2. To interpret data in tables by solving one-step and two-step questions. 3. To present continuous data using appropriate graphical methods, including line graphs 4. To interpret continuous data using appropriate graphical methods, including line graphs 5. To solve comparison, sum and difference problems using information presented in bar charts and linetime graphs		Previously learned about tally charts, pictograms and bar charts 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.
Spr 2 **1**	**Addition and Subtraction (Calculation Policy A6&A7 and S11)** • 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. • To solve addition and subtraction two-step problems in context.		***No multiplication/Division in this half term: may need to stay on top of methods as part of times table lesson?*** Teach compact method alongside expanded initially so chn can see all components involved. Transition to compact alone. Keep Year 3 away from the compact method. They should follow LOs but to 3-digit numbers using expanded methods. Use this as an opportunity to develop fluency then progress to reasoning and problem solving with them. They will have to be more independent while you model and **focus on Year 4s**
2	**Fractions (Calculation Policy MM1a)** • To count up and down in 1/10 and 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	4F-1 4NPV-1	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 **Stay within one when looking at decimals this time**

3	**Fractions (Calculation Policy MM1a)** • 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 ¼, ½, ¾. • To count up and down in ¼ (0.25) and ½ (0.5)	4NPV-1	Count in decimals and fractions together (again beyond one) Using counting links and mixed number knowledge from last time can go beyond one (e.g. 42/10 = 4.2)
4	**Measures Money (Year 4 decimal notation; Year 3 only need to be separate)** 1. To combine coins or notes to make a total (pounds or pence separately). 2. To find different combinations of coins that equal the same amount of money. 3. To convert pounds and pence. 4. To order and compare money by converting pounds and pence 5. To solve simple problems in a practical context involving addition and subtraction of money, including giving change.	3NPV-2 3AS-2	***Original guidance for separate SoW. Do what fits your learners*** Should be familiar with all coins and making totals by counting in multiples from year 2. Have solved simple problems using totals, difference and change. Previously worked in £ or p: **not both** Make totals in pounds and pence separately initially, then convert between the two and then… 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? Chn have previously dealt with pound and pence separately but should be aware of all coins/notes at this point. Again, deepen the concept of decimal here – link to fraction and previous measure work (e.g. £4 and 50p is £4.50) 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.
Sum 1 **1**	**Place Value (Year 4 up to 10,000; Year 3 up to 1,000)** • 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 numbers on a number line. To round any number to the nearest 10, 100 or 1,000. • To read, write and compare and order numbers up to 1,000. To order and compare numbers beyond 1,000. • To find 10, 100 or 1,000 more or less than a given number.	3NPV-3	***Starters over the week*** To count from 0 in multiples of 4, 8, 50 and 100. (3NPV-1) Rounding to 1,000 is new Use your own discretion here and prioritise LOs. If they have shown beyond doubt they can partition and order numbers then don't teach these ones and focus on others (for example).

	• To count backwards through zero to include negative numbers. (not a Year 3 LO but they should cope. Focus on Year 4 achieving this) • 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. (not a Year 3 LO but they should cope. Focus on Year 4 achieving this) • To solve number problems and practical problems involving these ideas.		**Must cover negative numbers and Roman Numerals.**
2	**Addition and Subtraction (Calculation Policy A4, MA4, A7 and MS1, MS2, S11)** • To add and subtract numbers mentally • To add and subtract four-digit (three-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)
3	**Multiplication and Division (Calculation Policy MM1a, M4a, M6, D9 and D10)** • 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 Year 3 two-digit only • To divide two-digit and three-digit numbers using formal methods D10 Year 3 two-digit only • To efficiently solve multiplication and division calculations **MM1a, M4a, M6, D9 and D10** • To solve problems involving scaling, with multiplication and adding	4NF-1 4MD-1 4MD-2 4MD-3	Multiplication particularly important for tables check Embed methods Equipment if required. Chn to decide on which methods are best to use for different types of questions. Chn reason as to why they chose each method Four times as long or half as much etc
4	**Fractions**		Continue to convert (beyond one where appropriate)

	• To convert fractions (1/10s, 1/100s, ¼ and ½) 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		Use the context of measures
5	**Shape** 1. To identify whether angles are greater than or less than a right angle. To identify acute and obtuse angles 2. To recognise that two right angles makes a half turn; three right angles make a ¾ turn; and four right angles make a full turn. To compare and order angles up to two right angles by size (a straight line) 3. To compare and classify triangles • To compare and classify quadrilaterals • To recognise angles as a property of shape	3G-1 4G-2 3G-2	(e.g. isosceles, equilateral and scalene) (e.g. parallelogram, rhombus, trapezium) 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.
Sum 2 **1**	**Multiplication and Division (Calculation Policy MM1a, MM2, M4a, M6, D9 and D10)** • 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 Year 3 two-digit only • To solve problems involving correspondence problems such as n objects are connected to m objects	4NF-1 4MD-1 4MD-2 4MD-3	Nothing new method-wise so deepen understanding, reason further and solve more problems. 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)

2	**Measures Money** 1. To solve addition and subtraction problems with money. 2. To solve multiplication and division problems with money. 3. To solve fraction problems with money 4. To solve scaling problems involving money 5. To solve multi step problems involving all four operation and money		***Again, make judgement on Year 3 and decimals. Fine not to use them.*** Last money focus was on embedding the decimal notation concept. Focus on calculating and problem solving with money Opportunity to reinforce fraction work (e.g. ¼ of Micky's pocket money is spent on sweets. He spends 90p on sweets; how much pocket money does he get? Scaling – 4 mars bars cost 80p how much would 12 cost?
3	**Time** 1. To read and write the time on an analogue or digital clock 2. To tell and write the time (with increasing accuracy to the nearest minute) from an analogue clock, including using Roman Numerals I-XII 3. To tell the time using 12-hour clock and use vocabulary of a.m./p.m., morning, afternoon, noon and midnight. 4. To tell and write the time from analogue and digital clocks in 24-hour clock 5. To convert time from 12-hour to 24-hour clock and vice versa 6. To solve problems involving duration 7. To solve problems involving converting from hours to minutes; minutes to seconds; years to months and weeks to day		Chn to be aware of 24-hour clock and what time of the day it refers to. **Do not** have to convert between 12 and 24-hour. Build on knowledge of times of day to directly convert between 12- and 24-hour clock No mention of duration as such but they do cover it in year 3, so an opportunity to reinforce.
4	**Direction** 1. To describe position as co-ordinates in the first quadrant 2. To plot position as co-ordinates in the first quadrant 3. To translate points up/down or left/right 4. To describe movements between positions as translations up/down and left/right 5. To plot specified points and draw sides to complete a given polygon	4G-1	Use a cube on a grid and physically move Focus on completing shapes as challenge
5	**Measures (length and perimeter)**		***Original guidance for separate SoW. Do what fits your learners***

	6. To write mixed measures with decimals To convert and compare lengths (cm and mm) 1. To convert between different units of measure cm to mm; m to cm 2. To calculate the perimeter of squares and rectangles in cm or m 3. To calculate the perimeter of regular 2-D shapes 4. To calculate the perimeter of rectilinear shapes in cm or m		Avoid decimal notation. So mixed measures looks like 3m and 45cm equals 345cm or 5cm and 3mm = 53mm 3cm and 4mm becomes 3.4cm, etc. Reinforce links to what a decimal is (from previous fraction work) Apply knowledge of times ten and decimals converting from **larger** to **smaller** units. 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 Can challenge chn with the formula 2(a+b) for perimeter of rectangles Deepen learning with perimeter given and they find sides – talk difference of rectangles or squares Rectilinear – challenge and deepen with missing sides: links to addition and subtraction/missing numbers

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value (Year 5 up to 100,000; Year 4 up to 10,000)** • To count from 0 in multiples of 6 and 25 • To read and write numbers up to 100,000. To read, write and compare and order numbers up to 10,000. • To determine the value of each digit in numbers up to 100,000. To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) • To order and compare numbers up to 100,000. 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 solve number problems and practical problems involving these ideas.	5NPV-2 4NPV-2 4NPV-3 5NPV-3	***No time to do individual tables during taught multiplication weeks. Be skilful with MTC weekly lesson to cover this.*** Year 5 Chn have previously used the skills from this week with numbers up to 10,000. Include composing and decomposing numbers Number lines to support understanding … missed that LO from Year 4 SoW (To identify, represent and estimate numbers using different representations (including number lines). ***Yr 4 first time rounding: could just do 10 or 10 and 100 – judge it by your class.***.
2	**Addition and Subtraction (Calculation Policy A6&A7 and S10&S11)** • 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. • To solve addition and subtraction two-step problems in context.		Teach compact method alongside expanded initially so chn can see all components involved. Transition to compact alone.
3	**Multiplication (Calculation Policy M6 & M7)** • To understand the term multiples and identify them • To recognise and use square numbers and the notation for square numbers (^{2})	5NF-1	Year 5: Chn should know tables up to 12x12, have previously multiplied using expanded method – Calculation Policy M6 → New to Year 4 Multiples: opportunity to reinforce tables knowledge

	• 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 • To multiply three-digit numbers by one-digit using formal written methods M6 & M7 (two-digit and three-digit by one) • To multiply two-digit and three-digit numbers by one-digit using formal written methods M7	5MD-3	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. Ensure concepts and terms understood (problem solve later in year). Calculating: use expanded and then show them expanded alongside compact method to aid understanding. Focus on getting method correct.
4	**Division (Calculation Policy D9 & D10)** • 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 **D8/D9** • To divide three-digit numbers by one-digit numbers using the formal written method of division **D10**	5NF-1 5MD-2 5MD-4	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 Ensure concepts and terms understood (problem solve later in year) D8/D9 will progress to mental method over the year. Use equipment. Use equipment for D10 to demonstrate understanding. Maybe two lessons?
5	**Measures (Area)** • To find the area of squares and rectangles by counting squares • To find the area of rectilinear shapes by counting squares • To calculate the area of rectangles (including squares) using square centimetres (cm^2) and square metres (m^2) • 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 (cm^2) and square metres (m^2)	5G-2	Taught in year 4 largely by counting squares. Could start here in input; link to arrays to then link to formula l x w = a Link to times tables, factor pairs, etc from last week Give shapes split. Then with only sides needed and then all info and challenge to split in different ways
6	**Fractions**		Chn have previously counted in fractions above 1; converted improper fractions and mixed numbers; found

	• 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 • 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	5F-1	unit and non-unit fractions; added and subtracted fractions with same denominator; compared fractions with small denominators; found equivalent fractions using images •
7	**Shape** • To distinguish between regular and irregular polygons based on reasoning about equal sides and angles • To identify acute and obtuse angles • To compare and classify triangles • To compare and classify quadrilaterals • To identify lines of symmetry in 2-D shapes • To name and describe 3D shapes • To identify 3D shapes, including cubes and other cuboids, from 2-D representations	5G-1	Regular and irregular shapes covered previously. Types of triangles and quadrilaterals in Y4 so Y5s should have good base. Previously done acute and obtuse. New to Year 4s (e.g. isosceles, equilateral and scalene) (e.g. parallelogram, rhombus, trapezium)
Aut 2 **1**	**Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11)** • To add and subtract numbers mentally **A4, MA4, MA5 & MS1, MS2** • To add four-digit numbers using formal written methods. To add whole numbers with more than four-digits using formal written methods **A7** • To subtract four-digit numbers using formal written methods **S11** To subtract whole numbers with more than four-digits using formal written methods • To use the inverse operation with addition and subtraction.		All mental methods taught previously except for round and adjust – MA5. Stick with 3 digits for most? 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)

	• To solve addition and subtraction two-step problems in context, deciding which operations and methods to use and why		
2	**Multiplication and Division (Calculation Policy MM1a, M7 & D10)** • 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 fluently multiply and divide three-digit numbers by a one-digit number **M7 & D10** (two-digit and three-digit by one) • 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 solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	5MD-4 5NF-2 5MD-1	Interpret: rounding up for number of taxis or down for full boxes, etc. ¼ for chocolate? Link between times tables and x10,x100 (e.g. 3x400 or 4,800 ÷ 60)
3	**Fractions** • 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 identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • To compare and order fractions whose denominators are all multiples of the same number	5F-2	Go above one. Opportunity to reinforce previous counting, equivalent fractions as they appear and a prelude to converting and add/sub Start with comparisons of ¼ and 1/3 (for example): don't need to convert as ¼ is a smaller portion then move to 2/3 or 5/6 and convert. Could be two lessons?
4	**Fractions** • 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	5F-2	Where the answer exceeds 1, chn should be encouraged to write answer as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 & 1/5) ***This will be conceptually difficult…***

	• To subtract mixed numbers with the same denominator		Exploration of methods is important here: • 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)** • To read and interpret information in tables • To read and interpret bar charts. • 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		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 Progress from simple tables to two-way tables, this should then help reading of timetables.
6	**Direction** • 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 reflect shapes in horizontal or vertical lines • To identify, describe and represent the position of a shape following a translation, using appropriate language, and know that the shape has not changed.	4G-1	First three objectives are repeats of year 4 so progress should be quick and opportunities to deepen understanding plentiful To ensure challenge, chn to translate with co-ordinates as well. Progress from the shape touching the reflection line to having a gap
Spr 1 **1**	**Place Value (Year 5 up to 1,000,000; Year 4 up to 10,000)** • To count from 0 in multiples of 7 • To read and write numbers up to 1,000,000 (10,000) • To determine the value of each digit in numbers up to 1,000,000 (10,000) • To order and compare numbers up to 1,000,000 (10,000)	4NPV-1 5NPV-2 4NPV-2 5NPV-3 4NPV-3	Much the same learning as last time but with bigger numbers and more range in adding/subtracting or rounding. 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

	• 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 (10, 100, 1,000) • To round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100,000 (10, 100, 1,000) • To solve number problems and practical problems involving these ideas.		Year 4 build rounding from last time.
2	**Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11)** • 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		Methods should be very fluent at this point. Look to deepen understanding, reason and solve problems involving addition and subtraction.
3	**Measures (perimeter)** • 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	***Check Yr4 SoW Spr2wk2 but they should cope with as is*** 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 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)
4	**Fractions** • To recognise and write decimal equivalent of any number of tenths and hundredths • To convert fractions (1/10s, 1/100s, ¼ and ½) to decimals		1/10=0.1 42/10=4.2 0.7 as 7/10 and 70/100, etc – use images

	• 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 and order decimals with the same number of decimal places up to two decimal places		Use the context of measures
5	**Fractions (Decimals)** • To understand the place value of each digit up to 2d.p. • To convert fractions (1/10s, 1/5, ¼ and ½) 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	Chn have previously converted tenths and hundredths; and ½ and ¼ to decimals Include multiples of these fractions (e.g. 1/5=0.2 3/5=0.6) Focus on 1/10 and 1/100s but challenge to recognise 0.25 as ¼ where appropriate Number lines to support concept and position of numbers
6	**Shape** • 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	Reflex is new … links to missing number problems Opposite angles at a cross? Diagonal lines and equal angles?
7	**Data Handling (line graph)** • 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		Previously learned about bar charts and line graphs using terms such as continuous and discrete data in year 4 Main focus on line charts – making strong links with work done on co-ordinates and scales to construct

	• 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		When deciding how to present data, chn need to think if it is discrete or continuous
Spr 2 **1**	**Multiplication and Division** • 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}) • To solve problems involving multiplication and division including their knowledge of factors and multiples, squares and cubes	5MD-2	Introduced to all concepts slowly in Autumn. Opportunity to deepen understanding and solve problems involving them.
2	**Fractions (Decimals)** • To recognise and use thousandths and relate them to tenths and hundredths • 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	Year 4 can stay 1dp and 2dp if needed. 3dp meant for Year 5. Establish 10/1,000 is the same as 1/100 and 100/1,000 is the same as 1/10
3	**Fractions (Decimals)** • 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.		Could reinforce previous mental methods adding decimals up to 2d.p. to and across one. Could keep year 4 to 1dp and 2dp. ***Year 5 are the focus***

	• 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.		Links to money and measure
4	**Measures (converting units)** • 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	Have previously convert measures kg to g; l to ml but not since year 3 and always as separate measures (not decimals) e.g. 2,500g=2kg and 500g. Idea of decimals has been explored for money so may have some concept otherwise it is new Link back to multiplication and division work x10, x100, x1,000 Build gradually teaching the chn to work in one unit of measure so first step is to convert.
Sum 1 **1**	**Place Value (Year 5 up to 1,000,000; Year 4 up to 10,000)** • To count forwards and backwards through zero including negative numbers • To interpret negative numbers in context (Year 4 don't need to do this but should cope: focus on Yr 5 getting it) • 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 (10,000) • 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 (10, 100, 1,000) • To round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100,000 (10, 100, 1,000)	5NPV-2 5NPV-3	Introduced to negative numbers in counting only last year Deeper Roman Numerals to 100 for Year 4s while Year 5 extend to 1,000. 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.

	• To solve number problems and practical problems involving these ideas		
2	**Multiplication and Division (Calculation Policy MM1a, M9 & D9)** • To multiply and divide decimals by 10, 100 and 1,000 **MM1a** • 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 two and three digit numbers mentally D8/D9 • To divide four-digit numbers by one-digit numbers D10 (two-digit and three-digit by one) • To solve problems involving scaling, with multiplication and adding • 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 5MD-3 5MD-4	Consolidate and deepen understanding with missing numbers For SEND may want to split calculation into unit and ten when multiplying (e.g. 43 x 27 = 43x7 & 43x20) ***Year 4 don't need to go beyond (two-digit and three-digit by one) But if they can cope then go for it. Do not prioritise their understanding over the Year 5's though: focus on Year 5*** Four times as long or half as much etc ***Mental division – children should write jottings down to support understanding. Model with equipment.***
3	**Measures Money (decimal notation)** 5. To convert pound and pence to decimal notation 6. To understand the relationship between money decimal notation and place value – ***might be a starter depending on success of fraction/decimal weeks*** 7. To order and compare amounts of money 8. To solve addition and subtraction problems involving money 9. To solve multiplication and division problems involving money, including decimal notation 10. To solve one step problems involving all four operations with money, including decimal notation 11. To solve multi step problems involving all four operations with money, including decimal notation		Chn have previously dealt with pound and pence separately but should be aware of all coins/notes at this point. Again, deepen the concept of decimal here – link to fraction and previous measure work (e.g. £4 and 50p is £4.50) 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. 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.
4	**Fractions (Percentages)**		

	• 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 ½ and ¼		***Year 5 are the focus*** Can include fractions that will simplify down to 100 (e.g. 360/400 is 90/100=90%=0.9)
5	**Fractions (Percentages)** • To convert percentages, fractions and decimals • To calculate percentages of amounts for 50% (½) and 25% (¼) • To calculate percentages of amounts for 10% (1/10) and 20% (1/5) • To calculate percentages of amount for 1% (1/100) • To solve problems involving percentages		***Year 5 are the focus***
Sum 2 **1**	**All Four Operations** • 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** • To add and subtract fractions with denominators that are multiples of the same number • To add and subtract mixed numbers with the same denominator • To multiply unit and non-unit fractions by whole numbers • To multiply mixed numbers by whole numbers		Previously done separately. Progress in fluency doing them in the same session. May still need split into addition, subtraction and then a day combined. MULTPLYING NEW CONCEPT – use of images to support understanding must be used. ***Year 5 are the focus***

	• To solve problems involving mixed numbers, addition, subtraction and multiplication		
3	**Measures (converting units)** • 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 • 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	5NPV-5	Chance to build and challenge from last time. 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 Including conversions of days to weeks and expressing answers as weeks and days
4	**Time** • 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 • To convert time from 12-hour to 24-hour clock and vice versa • To solve problems involving duration		First three combine into less lessons?
5	**Shape** • To identify and calculate missing angles at a point (90^{o}-360^{o})	5G-1	

	• To measure angles in degrees (°) • To draw given angles • To draw shapes to scale including accurate measurements of lengths and angles		Chn use conventional marking for parallel lines and right angles

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value** 12. To learn to read and write numbers up to 10,000,000. 13. To understand the place value of each digit in numbers up to 10,000,000. 14. To order and compare numbers up to 10,000,000. 15. To round any whole to the nearest 10, 100, 1,000, 10,000, etc • To solve number and practical problems that involve all of the above.	6NPV-2 6NPV-3	*Might want a times table lesson in to audit early doors.* Opportunity to reason with standard and non-standard partitioning. Use of number lines and positioning numbers (the same number) on different number lines will help discussion and understanding of how to round to different accuracies. Think SATs style questions and all the different ways the information is presented.
2	**Decimals** 16. To understand the place value of each digit up to 3 decimal places. 17. To be able to partition decimal numbers with standard and non-standard partitioning. 18. To order and compare numbers with mixed decimal places up to 3dp. 19. To learn to round decimals to the nearest whole number, tenth and hundredth. 20. To learn to multiply and divide by 10, 100, 1,000, etc up to 3dp. • To solve number and practical problems that involve all of the above.		Chn need to understand the relationship between U, t, h and th … other notes similar to last week.
3	**Addition and Subtraction** **Calculation Policy A7 and S11** 21. To learn to add and subtract large and decimal numbers mentally. 22. To learn to add and subtract 1, 10, 100, 1,000, 10,000, etc to any number. 23. To learn to use written methods to add and subtract numbers up to 1,000,000 (with mixed digits)		Thinking those quick marks – 300 + 47; 3,000 – 70; 0.7 + 0.2, etc, etc (look at first 16 questions historically on SATs papers) Reinforce place value and again should be mental.

	24. To learn to add and subtract numbers with mixed number of decimal places. 25. To find missing numbers, including the inverse, with addition and subtraction. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.		Written methods should be solid. Check place value by adding 5 and 6-digit numbers, 2dp and 3dp, etc. Should be a lot of opportunity to reason or problem solve. Ensure they don't just "do the inverse" when it isn't always the case for a missing number (e,g. 300 - ___ = 100) Chn have been taught through the school to be efficient – they should take away to do 2002 – 1998, they should count on.
4	**Multiplication Calculation Policy M7 and M9** 26. To learn to multiply mentally, using times table and place value knowledge. 27. To learn to multiply up to 4-digit numbers by 1-digit using formal written method **M7** 28. To learn to multiply up to 4-digits by a two-digit whole number using formal written method **M9** 29. To learn to multiply decimals by 1-digit whole numbers using formal written method **M7** • To learn to multiply decimals by 2-digit whole numbers using formal written method **M9**		300 x 7 = 2,100 because 3x7=21 and 100 times bigger or 0.7x3=2.1, etc. Challenge AGT with missing numbers. Method should be solid – opportunities to reason quickly Precursor to % work. Can be taught to do 5.4 x 3 as 54x3 and divide by 10 or 6.74x5 as 674x5 and divide by 100. A lot of discussion to aid understanding and links back to the first lesson this week with place value. *Could apply multiplication to rectangles and rectilinear shapes if you have additional maths lesson but would suspect some of the x2D may need more than one lesson.*
5	**Division Calculation Policy D10 and D12** 30. To learn to divide mentally, using times table and place value knowledge. 31. To learn to divide up to 4-digit numbers by 1-digit using formal written method **D10** 32. To learn to divide up to 4-digits by a two-digit whole number using formal written method **D12** 33. To learn to divide decimals by 1-digit whole numbers using formal written method **D10** • To learn to interpret remainders as decimals or wholes and apply this to problems.		As last week: 2,100/3=700 or 2.4/3=0.8 relate tables and PV. Be careful with 2,100/300 may need discussion as 7. Teach as multiples so 156/13 13,26,39,52 etc Teach chn to round for 9s. e.g. 29 write multiples of 30 and take off 1,2,3 etc. ALL ANSWERS TO BE WHOLE NUMBERS. e.g. decimal for money and measure problems. Remainders for how many taxis or how many full trays, etc.

6	**All four operations** 34. To calculate mentally using all four operations. 35. To use written methods for all four operations. 36. To learn to identify factors, factor pairs and prime numbers. 37. To learn to find common factors and common multiples. 38. To learn to calculate square and cube numbers. 39. To use their knowledge of the order of operations to carry out calculations involving the four operations. • To understand the relationship between operations and use this to reason.	6AS/MD-2	Thinking those first 16 questions or so, including x1, x0 and divide by 1. BODMAS e.g. How can we use 1,064/56=19 to calculate 56x18 or 56x19=1,064 so what is 5.6x19? 56x190? 5.6x190? etc
7	**Fractions** 40. To learn to find fractions of amounts. 41. To learn to find fractions of shapes and objects. 42. To solve problems involving fractions of amounts. 43. To find equivalent fractions, including simplifying. 44. To learn to convert mixed numbers and improper fractions (and vice versa) • To compare and order fractions, including fractions >1.	6F-1 6F-2 6F-3	Keep it about fractions and numbers in times table type range 3/5 of 250, etc. Emphasise same process – turn the shape or objects into a number. Take time to talk about the wording and again keep maths simple. E.g. Bill cycles 3/5 on Sat and the rest on Sunday. He cycles 150 mile altogether. How far does he cycle on Sunday? Link to common factors and multiples This learning shouldn't be new. Use as an opportunity to look at 264/2 etc and turning such big and obvious numbers into whole numbers.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 2 **1**	**All four operations** 1. To solve problems mentally using all four operations. 2. To solve problems using written methods using all four operations. 3. To use their knowledge of the order of operations to carry out calculations involving the four operations.	6AS/MD-1	Thinking money and measures to allow for large numbers and decimals. Use day one to talk a lot about identifying the correct operations and then day 2 similar in identifying but more difficult maths (see 2/3 mark SATs questions on Testbase)

	4. To solve problems and reason using the terms factor, factor pair, common factor, common multiple and prime number. • To learn to find missing numbers using all four operations.		
2	**Fractions (add and subtract)** 1. To learn to add and subtract fractions with mixed denominators. 2. To learn to add mixed numbers with mixed denominators. 3. To learn to subtract mixed numbers with mixed denominators. 4. To learn to add and subtract fractions and mixed numbers. • To learn to solve problems and reason using the above.		Start with same denominator and possibly the visual image to aid understanding then quickly progress. Link to last week to find same denominator. Chn to look for multiples and change only one fraction if possible. Teach them to cross multiply if stuck as will always work. Start with mixed numbers and same denominator: explore two methods – adding the wholes and fractions separately then dealing with the exchange; or mixed number →improper fraction→same denominator→ calculate. All +/- same denominator, fractions, mixed num etc etc
3	**Fractions (multiply and divide)** 1. To learn to multiply proper fractions by whole numbers. 2. To learn to multiply mixed numbers by whole numbers. 3. To learn to multiply simple pairs of proper fractions. 4. To learn to divide proper fractions by a whole number. • To learn to calculate with all four operations and fractions.		Link to repeated addition and the visual if needed. Again, two methods: multiply whole and fraction separately and combine dealing with exchange; or make it improper → multiply → make it mixed number again. In talk, discuss how the answer is smaller because not multiplying by 1. E.g. 1/4x1 is ¼ but if you have 1/4x1/2 then you don't have a full ¼ so answer (1/8) is smaller. Also, multiply across. Again, use visual to see how it gets smaller. ½ share by 4 becomes 1/8. Multiply denominator but show them why. Buy pizzas?
4	**Percentages** 1. To convert simple fractions and percentages (1/100; 1/10; 1/5; ¼; ¾; 1/3; ½) 2. To find simple percentages of amounts (1%, 10%, 20%, 25%, 50%, 75%) 3. To learn to find percentages of amounts. • To learn to solve problems with percentages.		Still linked to fractions at this point so 50% would be divide by 2. Challenge HA to make 70% in different ways? • Link to prior learning multiplying decimals. A lot of talk to understand. Probably two lessons.

5	**Measures (perimeter)** • 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	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 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)
6	Data handling (tables) • 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		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 Progress from simple tables to two-way tables, this should then help reading of timetables.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 1 **1**	**Place Value (up to 1,000,000)** • 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	5NPV-2 5NPV-3	Much the same learning as last time but with bigger numbers and more range in adding/subtracting or rounding.

	• 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.		
2	**Addition and Subtraction (Calculation Policy A4, MA4, MA5, A7 and MS1, MS2, S11)** • 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		Methods should be very fluent at this point. Look to deepen understanding, reason and solve problems involving addition and subtraction.
3	**Measures (Area)** • 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 Taught in year 4 largely by counting squares. Could start here in input; link to arrays to then link to formula l x w = a		Link to times tables, factor pairs, etc from last week Give shapes split. Then with only sides needed and then all info and challenge to split in different ways Largely practical and the concept of how much is in a can, etc but some link to previous cube number work?
4	**Fractions (Decimals)** • To understand the place value of each digit up to 2d.p. • To convert fractions (1/10s, 1/5, ¼ and ½) to decimals • To read and write decimal numbers as fractions • To round decimals with two decimal places to one decimal place	5NPV-2 5NPV-4 5F-3	Chn have previously converted tenths and hundredths; and ½ and ¼ to decimals Include multiples of these fractions (e.g. 1/5=0.2 3/5=0.6) Focus on 1/10 and 1/100s but challenge to recognise 0.25 as ¼ where appropriate Number lines to support concept and position of numbers

	• To round decimals with two decimal places to the nearest whole number		
5	**Fractions (Decimals)** • To recognise and use thousandths and relate them to tenths and hundredths • 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** • 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	… links to missing number problems Opposite angles at a cross? Diagonal lines and equal angles?
7	**Data Handling (line graph)** • 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		Previously learned about bar charts and line graphs using terms such as continuous and discrete data in year 4 Main focus on line charts – making strong links with work done on co-ordinates and scales to construct When deciding how to present data, chn need to think if it is discrete or continuous

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 2 **1**	**Multiplication and Division** • 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}) • To solve problems involving multiplication and division including their knowledge of factors and multiples, squares and cubes	5MD-2 5G-2	Introduced to all concepts slowly in Autumn. Opportunity to deepen understanding and solve problems involving them. Taught in year 4 largely by counting squares. Could start here in input; link to arrays to then link to formula l x w = a Link to times tables, factor pairs, etc from last week Give shapes split. Then with only sides needed and then all info and challenge to split in different ways Largely practical and the concept of how much is in a can, etc but some link to previous cube number work?
2	**Fractions (Decimals)** • 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.		Could reinforce previous mental methods adding decimals up to 2d.p. to and across one. Links to money and measure
3	**Fractions (Percentages)** • 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 ½ and ¼		Can include fractions that will simplify down to 100 (e.g. 360/400 is 90/100=90%=0.9)
4	**Measures (converting units)** • 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	Have previously convert measures kg to g; l to ml but not since year 3 and always as separate measures (not decimals) e.g. 2,500g=2kg and 500g. Idea of decimals has been explored for money so may have some concept otherwise it is new Link back to multiplication and division work x10, x100, x1,000 Build gradually teaching the chn to work in one unit of measure so first step is to convert.

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Sum1 **1**	**Place Value** • 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	5NPV-2 5NPV-3	Introduced to negative numbers in counting only last year Roman Numerals to 100 in year 4 Opportunity to cover any objectives here that need addressed from previous place value weeks. It does **not**

	• To solve number problems and practical problems involving these ideas		have to be all of them if the chn have a good understanding: be selective and plan effectively.
2	**Multiplication and Division (Calculation Policy MM1a, M9 & D9)** • To multiply and divide decimals by 10, 100 and 1,000 **MM1a** • 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	5NF-2 5MD-1 5MD-3 5MD-4	Consolidate and deepen understanding with missing numbers For SEND may want to split calculation into unit and ten when multiplying (e.g. 43 x 27 = 43x7 & 43x20)
3	**Money** • 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	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. 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.
4	**Fractions (Percentages)** • To convert percentages, fractions and decimals • To calculate percentages of amounts for 50% (½) and 25% (¼) • To calculate percentages of amounts for 10% (1/10) and 20% (1/5) • To calculate percentages of amount for 1% (1/100) • To solve problems involving percentages		

5	**Fractions** 4. To add and subtract fractions with denominators that are multiples of the same number 5. To add and subtract mixed numbers with the same denominator 6. To multiply unit and non-unit fractions by whole numbers 7. To multiply mixed numbers by whole numbers 8. To solve problems involving mixed numbers, addition, subtraction and multiplication		Previously done separately. Progress in fluency doing them in the same session. May still need split into addition, subtraction and then a day combined. MULTPLYING NEW CONCEPT – use of images to support understanding must be used.
6	**Shape** 1. To identify and calculate missing angles at a point (90^{o}-360^{o}) 2. To measure angles in degrees (^{o}) 3. To draw given angles 4. To draw shapes to scale including accurate measurements of lengths and angles • 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	Chn use conventional marking for parallel lines and right angles 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…
Sum2 **1**	**All Four Operations** • To add and subtract with whole numbers and mixed decimals		Use the context of measures in the same way the money week ran in Summer 1 Week 3

	• 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.		
2	**Fractions/Decimals/Percentages** • 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 • 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 2 + 5 4 = 5 6 = 1 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 = 100 71] • 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		All concepts already taught so an opportunity to consolidate or deepen understanding wherever required. Not expected to cover everything in that box obviously.

	• 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 2 1 , 4 1 , 5 1 , 5 2 , 5 4 and those fractions with a denominator of a multiple of 10 or 25.		
3	**Measures (converting units)** • 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 • 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	5NPV-5	Chance to build and challenge from last time. 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 Including conversions of days to weeks and expressing answers as weeks and days
4	**Direction** • 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		*First two objectives are repeats: reflection is new…* Reflection must always be parallel to the axes (vertical or horizontal; not diagonal) Progress from the shape touching the reflection line to having a gap Challenge to reflect in both horizontal and vertical?
5	Direction (From year 5 Autumn 1) • 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. First three objectives are repeats of year 4 so progress should be quick and opportunities to deepen understanding plentiful **1.** To ensure challenge, chn to translate with co-ordinates as well.		

Autumn to be taught week by week. From Spring teacher has discretion to teach in weeks or different strands per day; also, the freedom to swap weeks around depending on the classes need

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 1 **1**	**Place Value** • To learn to read and write numbers up to 10,000,000. • To understand the place value of each digit in numbers up to 10,000,000. • To order and compare numbers up to 10,000,000. • To round any whole to the nearest 10, 100, 1,000, 10,000, etc • To solve number and practical problems that involve all of the above.	6NPV-2 6NPV-3	*Might want a times table lesson in to audit early doors.* Opportunity to reason with standard and non-standard partitioning. Use of number lines and positioning numbers (the same number) on different number lines will help discussion and understanding of how to round to different accuracies. Think SATs style questions and all the different ways the information is presented.
2	**Decimals** • To understand the place value of each digit up to 3 decimal places. • To be able to partition decimal numbers with standard and non-standard partitioning. • To order and compare numbers with mixed decimal places up to 3dp. • To learn to round decimals to the nearest whole number, tenth and hundredth. • To learn to multiply and divide by 10, 100, 1,000, etc up to 3dp. • To solve number and practical problems that involve all of the above.		Chn need to understand the relationship between U, t, h and th … other notes similar to last week.
3	**Addition and Subtraction** **Calculation Policy A7 and S11** • To learn to add and subtract large and decimal numbers mentally. • To learn to add and subtract 1, 10, 100, 1,000, 10,000, etc to any number. • To learn to use written methods to add and subtract numbers up to 1,000,000 (with mixed digits)		Thinking those quick marks – 300 + 47; 3,000 – 70; 0.7 + 0.2, etc, etc (look at first 16 questions historically on SATs papers) Reinforce place value and again should be mental.

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	• To learn to add and subtract numbers with mixed number of decimal places. • To find missing numbers, including the inverse, with addition and subtraction. • To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.		Written methods should be solid. Check place value by adding 5 and 6-digit numbers, 2dp and 3dp, etc. Should be a lot of opportunity to reason or problem solve. Ensure they don't just "do the inverse" when it isn't always the case for a missing number (e,g. 300 - ___ = 100) Chn have been taught through the school to be efficient – they should take away to do 2002 – 1998, they should count on.
4	**Multiplication** **Calculation Policy M7 and M9** • To learn to multiply mentally, using times table and place value knowledge. • To learn to multiply up to 4-digit numbers by 1-digit using formal written method **M7** • To learn to multiply up to 4-digits by a two-digit whole number using formal written method **M9** • To learn to multiply decimals by 1-digit whole numbers using formal written method **M7** • To learn to multiply decimals by 2-digit whole numbers using formal written method **M9**		300 x 7 = 2,100 because 3x7=21 and 100 times bigger or 0.7x3=2.1, etc. Challenge AGT with missing numbers. Method should be solid – opportunities to reason quickly Precursor to % work. Can be taught to do 5.4 x 3 as 54x3 and divide by 10 or 6.74x5 as 674x5 and divide by 100. A lot of discussion to aid understanding and links back to the first lesson this week with place value. *Could apply multiplication to rectangles and rectilinear shapes if you have additional maths lesson but would suspect some of the x2D may need more than one lesson.*
5	**Division** **Calculation Policy D10 and D12** • To learn to divide mentally, using times table and place value knowledge. • To learn to divide up to 4-digit numbers by 1-digit using formal written method **D10** • To learn to divide up to 4-digits by a two-digit whole number using formal written method **D12** • To learn to divide decimals by 1-digit whole numbers using formal written method **D10** • To learn to interpret remainders as decimals or wholes and apply this to problems.		As last week: 2,100/3=700 or 2.4/3=0.8 relate tables and PV. Be careful with 2,100/300 may need discussion as 7. Teach as multiples so 156/13 13,26,39,52 etc Teach chn to round for 9s. e.g. 29 write multiples of 30 and take off 1,2,3 etc. ALL ANSWERS TO BE WHOLE NUMBERS. e.g. decimal for money and measure problems. Remainders for how many taxis or how many full trays, etc.

Autumn to be taught week by week. From Spring teacher has discretion to teach in weeks or different strands per day; also, the freedom to swap weeks around depending on the classes need

6	**All four operations** • To calculate mentally using all four operations. • To use written methods for all four operations. • To learn to identify factors, factor pairs and prime numbers. • To learn to find common factors and common multiples. • To learn to calculate square and cube numbers. • To use their knowledge of the order of operations to carry out calculations involving the four operations. • To understand the relationship between operations and use this to reason.	6AS/MD-2	Thinking those first 16 questions or so, including x1, x0 and divide by 1. BODMAS e.g. How can we use 1,064/56=19 to calculate 56x18 or 56x19=1,064 so what is 5.6x19? 56x190? 5.6x190? etc
7	***Week Spare for Assessment and identified gaps*** • *Assessment probably early doors – either before teaching week 1 or between week 1 and 2*		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Aut 2 **1**	**All four operations** • To solve problems mentally using all four operations. • To solve problems using written methods using all four operations. • To use their knowledge of the order of operations to carry out calculations involving the four operations. • To solve problems and reason using the terms factor, factor pair, common factor, common multiple and prime number. • To learn to find missing numbers using all four operations.	6AS/MD-1	Thinking money and measures to allow for large numbers and decimals. Use day one to talk a lot about identifying the correct operations and then day 2 similar in identifying but more difficult maths (see 2/3 mark SATs questions on Testbase)
2	**Fractions** • To learn to find fractions of amounts. • To learn to find fractions of shapes and objects.		Keep it about fractions and numbers in times table type range 3/5 of 250, etc. Emphasise same process – turn the shape or objects into a number.

Autumn to be taught week by week. From Spring teacher has discretion to teach in weeks or different strands per day; also, the freedom to swap weeks around depending on the classes need

	• To solve problems involving fractions of amounts. • To find equivalent fractions, including simplifying. • To learn to convert mixed numbers and improper fractions (and vice versa) • To compare and order fractions, including fractions >1.	6F-1 6F-2 6F-3	Take time to talk about the wording and again keep maths simple. E.g. Bill cycles 3/5 on Sat and the rest on Sunday. He cycles 150 mile altogether. How far does he cycle on Sunday? Link to common factors and multiples This learning shouldn't be new. Use as an opportunity to look at 264/2 etc and turning such big and obvious numbers into whole numbers.
3	**Fractions (add and subtract)** • To learn to add and subtract fractions with mixed denominators. • To learn to add mixed numbers with mixed denominators. • To learn to subtract mixed numbers with mixed denominators. • To learn to add and subtract fractions and mixed numbers. • To learn to solve problems and reason using the above.		Start with same denominator and possibly the visual image to aid understanding then quickly progress. Link to last week to find same denominator. Chn to look for multiples and change only one fraction if possible. Teach them to cross multiply if stuck as will always work. Start with mixed numbers and same denominator: explore two methods – adding the wholes and fractions separately then dealing with the exchange; or mixed number →improper fraction→same denominator→ calculate. All +/- same denominator, fractions, mixed num etc etc
4	**Fractions (multiply and divide)** • To learn to multiply proper fractions by whole numbers. • To learn to multiply mixed numbers by whole numbers. • To learn to multiply simple pairs of proper fractions. • To learn to divide proper fractions by a whole number. • To learn to calculate with all four operations and fractions.		Link to repeated addition and the visual if needed. Again, two methods: multiply whole and fraction separately and combine dealing with exchange; or make it improper → multiply → make it mixed number again. In talk, discuss how the answer is smaller because not multiplying by 1. E.g. 1/4x1 is ¼ but if you have 1/4x1/2 then you don't have a full ¼ so answer (1/8) is smaller. Also, multiply across. Again, use visual to see how it gets smaller. ½ share by 4 becomes 1/8. Multiply denominator but show them why. Buy pizzas?
5	**Percentages** • To convert simple fractions and percentages (1/100; 1/10; 1/5; ¼; ¾; 1/3; ½) • To find simple percentages of amounts (1%, 10%, 20%, 25%, 50%, 75%) • To learn to find percentages of amounts.		Still linked to fractions at this point so 50% would be divide by 2. Challenge HA to make 70% in different ways? Link to prior learning multiplying decimals. A lot of talk to understand. Probably two lessons.

Autumn to be taught week by week. From Spring teacher has discretion to teach in weeks or different strands per day; also, the freedom to swap weeks around depending on the classes need

	• To learn to solve problems with percentages.		
6	***Week Spare for Assessment and identified gaps*** • *Assessment probably early doors – either before teaching week 1 or between week 1 and 2*		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 1 **1**	**PV** • To read, write, order and compare numbers up to 10,000,000, including decimals, and determine the value of each digit. • To use negative numbers in context, and calculate intervals across zero. • To read and write Roman Numerals. • To multiply and divide numbers by 10, 100 and 1,000 (up to 3dp). • To solve number and practical problems that involve all of the above.	6NPV-2 6NPV-3 6NPV-1	Took the below red out but keep ticking over during arithmetic Monday sessions weekly. Opportunity to link in measures with temperature or money. **All Four Operations** • To use their knowledge of the order of operations to carry out calculations involving the four operations. • To fluently calculate using all four operations with large numbers and decimals. • To solve problems mentally using all four operations. • To solve problems using written methods using all four operations. • To understand the relationship between operations and use this to reason, including missing numbers.
2	**Geometry** • To learn to draw and measure angles with a protractor. • To find missing angles on a straight line and right angle turn. • To find missing angles in a full turn. • To find missing angles in a triangle • To find missing angles in a quadrilateral.		Deal with angles opposite on a cross as input during full turn lesson. Properties of a triangle important – isosceles two same angles, etc

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	• To learn to solve problems with missing angles.		Applying the full week to 2 mark questions
3	**Decimals/Fractions/Percentages** • To fluently find fractions and percentages of amounts. • To learn to convert between fractions, decimals and percentages, and order and compare them. • To add and subtract decimals, and fractions fluently. • To learn to find the whole from a given fraction. • To learn to solve problems involving fractions, decimals and percentages.		Progression in to problem solving and reasoning questions, presenting the information in a variety of ways including visuals. e.g. 0.4-0.283 or 1/3+4/9, etc
4	**Measures** • To learn to convert units of measure. • To order and compare units of measure. • To solve multi step problems involving all four operations and measure, including decimal notation. • To solve multi step problems involving all four operations and money. • To learn to convert between miles and kilometres.		Reinforce x10, 100, etc from prior learning. Include temperature to get in extra negative work. Can be fractions or decimals when comparing e.g. 3.25m __ 3 1/2m. Graphical representation
5	**Ratio** • To learn to use ratio language to deepen understanding • To learn to calculate ratios. • To learn to solve problems involving unequal grouping where the ratio is known. • To problem solve using ratio • To solve problems using similar shapes where the scale factor is known or can be found		A lot of time talking about ratio. Tim buys 2 cans to every 4 bottles so he buys 1 can to ___bottles. Talk about how ¼ would be 1:3 – 4 parts in total: 1 red and three yellow. Should calculate from missing out the ratio eg 2:7 so __:49 link to multiples. e.g. Ben gets 4 to Micks 1. There are 20 sweets. Share by 5 so mick gets 4 then Ben 16 (4x4). Probably recipe-esq but only parts of it. See CGP for example pg11 Enlarge shapes or write ratios for enlarged shapes.
6	**Geometry** • To draw 2D shapes given dimensions and angles. • To name parts of a circle (radius, diameter and circumference) and know the diameter is twice the radius. • To compare and classify 2D shapes based on properties • To recognise, describe and build simple 3D shapes, including making nets.		

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7	**Algebra** • To learn to generate and describe number sequences. • To learn to solve algebraic equations. • To apply my understanding of algebraic equations to find missing numbers (represented by symbols) • To solve algebraic problems using all four operations. • To find pairs of numbers that satisfy an equation with two unknowns		Relate to missing numbers to ease the fear of algebra: been doing it since year 1 5+a=7 2a+7 where a is 5 so = 17 2a+7=47. 47-7 then half so a=20 Think pictures. Like the things you see on Fb but SATs related e.g. a+b=6 or c x d = 48

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Spr 2 **1**	**Measures** • To learn to calculate the perimeter of rectangles. • To learn to calculate the perimeter of regular shapes and rectilinear shapes. • To learn to calculate the area of squares and rectangles. • To reason and solve problems, including missing numbers, relating to the area of squares and rectangles. • To learn to find the area of rectilinear shapes. • To learn to calculate the area of triangles. • To learn to calculate the area of parallelograms.		Investigate that the shapes with the same area can have different perimeters and vice versa. Link factor work.
2	**Statistics** • To learn to solve problems by reading and interpreting bar charts and pictograms. • To learn to solve problems by reading and interpreting tables. • To interpret and construct line graphs. • To interpret and construct pie charts. • To calculate and interpret the mean as an average.		Calculate mean but also find missing values: the mean is 3 and I have 3 and 2 and ___ (3x3=9; 3+2=5 so missing 4)
3	**Fractions**		

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	• To learn to find fractions of amounts. • To learn to find fractions of shapes and objects. • To solve problems involving fractions of amounts. • To find equivalent fractions, including simplifying. • To learn to convert mixed numbers and improper fractions (and vice versa) • To compare and order fractions, including fractions >1. • To learn to add and subtract fractions with mixed denominators. • To learn to add mixed numbers with mixed denominators. • To learn to subtract mixed numbers with mixed denominators. • To learn to add and subtract fractions and mixed numbers. • To learn to solve problems and reason using the above. • To learn to multiply proper fractions by whole numbers. • To learn to multiply mixed numbers by whole numbers. • To learn to multiply simple pairs of proper fractions. • To learn to divide proper fractions by a whole number. • To learn to calculate with all four operations and fractions. • To fluently find fractions and percentages of amounts. • To learn to convert between fractions, decimals and percentages, and order and compare them. • To add and subtract decimals, and fractions fluently. • To learn to find the whole from a given fraction. • To learn to solve problems involving fractions, decimals and percentages.		Nothing new here. Teacher's discretion as to what the cohort require. Deepen understanding through reasoning and problem solving.
4	**Geometry** • To describe and plot coordinates in the first quadrant. • To describe and plot coordinates on all four quadrants. • To learn to translate shapes and be able to describe the translation.		

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	• To learn to reflect shapes in horizontal, vertical and diagonal lines.		

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Sum1 **1**	**Measures** • To learn to calculate the areas of shapes. • To learn to calculate the volume of cubes and cuboids. • To solve missing number problems with area and volumes. • To learn to tell the time using digital and analogue clock. • To convert time between 12 and 24-hour clock. • To learn to read scales with different intervals. • To learn to read a timetable and solve duration problems.		Cubes and cuboids are always a very specific question. Calculate one and then the other is same volume but a missing side.
2	**Algebra** • To learn to express missing number problems algebraically. • To learn to follow one step formulas. • To learn to follow two-step formulas. • To apply my knowledge of formula to find missing numbers.		Start with symbols like last time and then move to more real-world situations. 7a where a is 3 so 21 or a + 5 would be 8. It costs £3 a colour so £3 x no. of colours so 21. £3 for the colour plus £5 for the tshirt colour + tshirt= 3+ 5 = £8 Two step – chicken or electrician 40minutes a kg + 20; £30 and hour + £50 for callout. Apply would be to do the inverse. The electrician cost £140 how long was he there. Subtract 50 for call out is £90 share by £30 gives 3 hours.
3	**Revision – Do what you got to do…**		
4	**TYPICALLY, SATs WEEK**		
5	**CONSOLIDATION AND PROJECT WORK (APPLYING MATHS TO REAL WORLD)**		
6			

Week	Objective	Link to DfE Ready to Progress Doc	Thinking out loud…
Sum2	**CONSOLIDATION AND PROJECT WORK (APPLYING MATHS TO REAL WORLD)**		

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1			
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