Maths Curriculum Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	**Unit 2 Multiples of 1,000**	**Unit 1 Calculating using knowledge of structures**				**Unit 3 Numbers up to 10,000,000**			**Unit 4 Draw, compose, decompose shape**		**Unit 9 Ratio and proportion**	**Assessment**	**Unit 9 Ratio and proportion**
Term 3/4	**Unit 5 Multiplication & Division**				**Unit 6 Area, perimeter, position & direction**	**Unit 7 Fractions & percentages**						**Assessment**	**Unit 10 Calculating using knowledge of structures**
Term 5/6	**Unit 11 Solving problems with two unknowns**	**Unit 12 Order of operations**	**Unit 13 Mean average**	**Summative assessment**	**TPLT Secondary-Ready Scheme**								

Unit	Block	Number of lessons and weeks
1	Calculating using knowledge of structures (1)	20 lessons, 4 weeks (instead of 6)
2	Multiples of 1,000	5 lessons, 1 week (instead of 2)
3	Numbers up to 10,000,000	15 lessons, 3 weeks (instead of 4)
4	Draw, compose, decompose shape	10 lessons, 2 weeks
5	Multiplication and division	20 lessons, 4 weeks
6	Area, perimeter, position and direction	10 lessons, 2 weeks
7	Fractions and percentages	25 lessons, 5 weeks (instead of 6)
8	*Statistics*	*This is to be covered elsewhere in the curriculum*
9	Ratio and proportion	10 lessons, 2 weeks
10	Calculating using known structures (2)	5 lessons, 1 week
11	Solving problems with two unknowns	5 lessons, 1 week (instead of 2)
12	Order of operations,	5 lessons, 1 week
13	Mean Average	5 lessons, 1 week

NB the decision to place the units in certain orders is down to the school – those who go on residential in early September may wish to begin with a short unit rather than the longer, suggested one. The NCETM guidance advises 'teachers should check what their pupils need for SATs, and dip into the post-SATs content where necessary. After SATs, these units can be covered in depth'. We believe all content is needed pre-SATs and therefore the units have been made smaller to allow for this. As always, teachers should respond adaptively to the needs of their classes.

Unit 1 – Calculating using knowledge of structures (1)

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Calculating using knowledge of structures	Common structures and the part-part whole relationship	Y6 Ready to Progress
1	Learning Outcomes 1&2 Pupils explain how a combination of different parts can be equivalent to the same whole and can represent this in an expression Pupils identify structures within stories and use their knowledge of structures to create stories **WALT identify**	Teaching point 1 Steps 1:1-1:6 (pgs. 5-11)	
2	Learning Outcome 3 Pupils identify the missing part using their knowledge of part whole relationships and structures **WALT identify**	Teaching point 1 Step 1:7 (pg. 12) *NB lessons 2 and 3 could overlap.*	
3	Learning Outcomes 4,5&6 Pupils interpret and represent a part-whole problem with 3 addends using a model Pupils create stories to correctly match a structure presented in a model Pupils use their knowledge of additive structures to solve problems **WALT represent**	Teaching point 2 Steps 2:1-2:7 (pgs. 13-19)	
4	Learning Outcomes 7&8 Pupils calculate the value of a missing part **WALT calculate**	Teaching point 3 Steps 3:1-3:5 (pgs. 20-24) *NB lessons 4 and 5 could overlap.*	
5	Learning Outcome 9 Pupils correctly represent an equation in a part-whole model **WALT represent**	Teaching point 3 Steps 3:6-3:7 (pgs. 25-27)	
		Using equivalence and the compensation property to calculate	
6	Learning Outcomes 10&11 Pupils explain how adjusting both addends affects the sum (2 digit numbers) Pupils explain how adjusting both addends affects the sum (decimal fractions) **WALT explain**	Teaching point 1 Steps 1:1-1:4 (pgs. 5-8)	

7	Learning Outcome 12 Pupils use the 'same sum' rule to balance equations **WALT calculate**	Teaching point 1 Steps 1:5-1:7 AND 1:10 (pgs. 8-10 and 12-13)	
8	Learning Outcome 13 Pupils use the 'same sum' rule to balance equations with an unknown **WALT calculate**	Teaching point 1 Steps 1:8-1:10 (pgs. 10-13)	
9	Learning Outcome 14 Pupils explain how adjusting one addend affects the sum **WALT explain**	Teaching point 2 Steps 2:1-2:4 (pgs. 14-17)	
10	Learning Outcome 15 Pupils solve addition calculations mentally by using known facts **WALT solve**	Teaching point 2 Steps 2:5-2:6 (pgs. 17-19)	
11	Learning Outcome 16 Pupils solve calculations with missing addends **WALT solve**	Teaching point 2 Steps 2:7-2:9 (pgs. 19-21)	
12	Learning Outcome 17 Pupils explain how adjusting both the minuend and subtrahend by the same amount affects the difference **WALT explain**	Teaching point 3 Steps 3:1-3:5 (pgs. 22-26)	
13	Learning Outcomes 18& 19 Pupils explain how using the 'same difference' rule can make mental calculation easier **WALT explain**	Teaching point 3 Steps 3:6-3:11 (pgs. 26-30)	
14	Learning Outcome 20 Pupils use the 'same difference' rule to balance equations **WALT calculate**	Teaching point 3 Steps 3:12-3:13 (pgs. 31-32)	
15	Learning Outcomes 21&22 Pupils explain how increasing or decreasing the minuend affects the difference **WALT explain**	Teaching point 4 Steps 4:1-4:4 (pgs. 33-37)	I See Reasoning P22
16	Learning Outcome 23 Pupils solve subtraction calculations mentally by using known facts **WALT solve**	Teaching point 4 Step 4:5 (pgs. 38-39)	

17	Learning Outcome 24 Pupils explain how adjusting the minuend can make mental calculation easier **WALT solve**	Teaching point 4 Steps 4:6-4:8 (pgs. 39-41)	
18	Learning Outcomes 25&26 Pupils explain how adjusting the subtrahend affects the difference Pupils explain how increasing or decreasing the subtrahend affects the difference **WALT explain**	Teaching point 5 Steps 5:1-5:3 (pgs. 42-45)	
19	Learning Outcomes 27&28 Pupils calculate the difference using their knowledge of an adjusted subtrahend **WALT calculate**	Teaching point 5 Steps 5:4-5:7 (pgs. 45-48)	
20	Opportunities for assessment		

Unit 2 – Multiples of 1,000

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Multiples of 1,000	Composition and calculation: multiples of 1,000 up to 1,000,000	Y6 Ready to Progress
1	Learning Outcomes 1&2 Pupils explain how ten thousand can be comprised Pupils explain how one hundred thousand can be composed **WALT explain**	Teaching point 1 Steps 1:1-1:5 (pgs. 5-9)	Teaching for Mastery Y6 P9 both activities
2	Learning Outcomes 3&4 Pupils read and write numbers up to one million **WALT record**	Teaching point 1 Steps 1:6-:12 (pgs. 9-16)	I See Reasoning P5 Spot the patterns
3	Learning Outcomes 5,6&7 Pupils identify and place the position of five-digit multiple of one thousand numbers, on a marked, but unlabelled number line Pupils identify and place the position of six-digit multiple of one thousand numbers, on a marked, but unlabelled number line Pupils count forwards and backwards in steps of powers of 10, from any multiple of 1,000 **WALT identify**	Teaching point 2 Steps 2:1-2:6 (pgs. 17-22)	I See Reasoning P6 and 7
4	Learning Outcomes 8 &9 Pupils explain that 10,000 is composed of 5,000s 2,500s and 2,000s Pupils explain that 100,000 is composed of 50,000s 25,000s and 20,000s **WALT count**	Teaching point 6 Steps 6:1-6:3 (pgs. 44-48)	
5	Learning Outcomes 9&10 Pupils read scales in graphing and measures contexts, by using their knowledge of the composition of 10,000 and 100,000 **WALT identify**	Teaching point 6 Step 6:4 (pgs. 48-49)	

Unit 3 – Numbers up to 10,000,000

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Numbers up to 10,000,000	Composition and calculation: numbers up to 10,000,000	Y6 Ready to Progress
1	Learning Outcome 1 Pupils use representations to identify and explain patterns in powers of 10 **WALT identify**	Teaching point 1 Steps 1:1-1:3 (pgs. 4-7)	
2	Learning Outcomes 2,3 Pupils compose seven or eight-digit numbers using common intervals **WALT compose**	Teaching point 1 Steps 1:4-1:8 (pgs. 7-14)	
3	Learning Outcome 4,5 Pupils explain how to read numbers with up to seven digits effectively Pupils recognise and create numbers that contain place-holding zeros **WALT identify**	Teaching point 2 Steps 2:1-2:6 (pgs. 15-19)	
4	Learning Outcome 6,7 Pupils determine the value of digits in numbers up to tens of millions Pupils explain how to compare up to eight-digit numbers **WALT identify**	Teaching point 2 Steps 2:7-2:10 (pgs. 20-22)	
5	Learning Outcome 8 Pupils use their knowledge of the composition of seven-digit numbers to solve problems **WALT apply**	Teaching point 3 Steps 3:1-3:4 (pgs. 23-26)	
6	Learning Outcome 9,10 Pupils add and subtract mentally without bridging a boundary (only one and more than one digit changes) Pupils add numbers whilst crossing the millions boundary **WALT add and subtract**	Teaching point 3 Steps 3:5-3:6 (pgs. 26-30) Teaching point 4 Steps 4:1-4:3 (pgs. 31-33)	
7	Learning Outcome 11 Pupils subtract numbers whilst crossing the millions boundary (multiples of 100,000 and different powers of 10) **WALT subtract**	Teaching point 4 Steps 4:4-4:6 (pgs. 33-35)	
8	Learning Outcome 12,13 Pupils explain how a seven-digit number can be composed and decomposed into parts/ Pupils identify and explain a pattern in a counting sequence **WALT identify**	Teaching point 4 Steps 4:7-4:8 (pgs. 35-36)	

		Y6 Ready to Progress	
9	Learning Outcome 14 Pupils identify numbers with up to seven digits on marked number lines **WALT identify**	6NPV-3 p20-24 Ppt slides 112-119	
10	Learning Outcome 15 Pupils estimate the value and position of numbers on unmarked or partially marked number lines **WALT estimate**	Ppt slides 122-129	
		Composition and calculation: numbers up to 10,000,000	
11	Learning Outcome 16, 17 Pupils explain why we round and how to round seven-digit numbers to the nearest million Pupils explain how to round seven-digit numbers to the nearest hundred thousand **WALT explain**	Teaching point 5 Steps 5:1-5:10 (pgs. 37-43)	I See Reasoning P18-21 choice of rounding activities
12	Learning Outcome 18 Pupils explain how to round up to seven-digit numbers to any power of 10 in context **WALT round**	Teaching point 5 Steps 5:11-5:13 (pgs. 43-46)	Teaching for Mastery Y6 P9&10 all activities
13	Learning Outcome 19 Pupils identify and explain the most efficient way to solve a calculation **WALT apply**	Teaching point 6 Steps 6:1-6:4 (pgs. 47-49)	
14	Learning Outcome 20 Pupils add and subtract numbers with up to seven digits using column addition and subtraction **WALT add and subtract**	Teaching point 6 Steps 6:5-6:7 (pgs. 49-50)	Teaching for Mastery Y6 P12 P14 Mastery activities 1 and 2
15	Learning Outcome 21,22 Pupils explore and explain different written and mental strategies to solving addition and subtraction problems Pupils solve addition and subtraction problems and explain whether a mental or written strategy would be most efficient **WALT solve**	Teaching point 6 Steps 6:8- 6:13 (pgs. 50-54)	I See Reasoning P23 RTP assessment questions p23/24

Unit 4 – Draw, compose and decompose shapes

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Draw, compose and decompose shapes	Y6 Ready to Progress	
1	Learning Outcome 1 Use knowledge of shape properties to draw, sketch and identify shapes **WALT draw**	Ready to Progress 6G-1 P53-57 Ppt slides 6-11	N Rich Shape Draw
2	Learning Outcome 2 The same 3D shape can be composed from different 2D nets **WALT identify**	Slides 13-15	Teaching for Mastery Y6 P36 Bottom activities for Mastery and GD I See Reasoning P80
3	Learning Outcome 3 When a 2D shape is decomposed and the parts rearranged, the area remains the same. The area of a compound shape is therefore equal to the total of the areas of the constituent parts **WALT make links**	Slides 17-18	
4	Learning Outcome 4 Any parallelogram can be decomposed and the parts rearranged to form a rectangular parallelogram **WALT make links**	Ready to Progress 6G-1 P53-57 Slides 20-25	
		Multiplicative contexts: area and perimeter 2	
5	Learning Outcome 5 Two congruent triangles can be composed to form a parallelogram **WALT make links**	Teaching point 1 Steps 1:1-1:7 (pgs. 4-10)	
6	Learning Outcome 6 Shapes with the same area can have different perimeters. Shapes with the same perimeters can have different areas **WALT make links**	Teaching point 2 Steps 2:1-2:9 (pgs. 11-20)	
7	Learning Outcome 7 We can use the relationship between area and side length, and perimeter and side length, to reason about measurements of shapes, including compound shapes **WALT reason**	Teaching point 3 Steps 3:1-3:5 (pgs. 21-25)	

	Key learning outcomes for Y6 from NC that are not covered in the NCETM CP scheme		
8	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons **WALT calculate**	See Ready to Progress 5G-1 to build upon/ revise Y5 outcomes.	I See Reasoning P78 Odd one out P79 Fill the gaps
9	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **WALT identify**		Teaching for Mastery Y6 P35 – all activities I See Reasoning P83/84/85
10	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **WALT make links**		Teaching for Mastery Y6 P36 Top activities for Mastery and GD I See Reasoning P82 Explain

Unit 5 – Multiplication and division

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Multiplication and division	Using equivalence to calculate	Y6 Ready to Progress
1	Learning Outcome 1, Pupils explain why the product stays the same when one factor is doubled and the other is halved **WALT explain**	Teaching point 1 Steps 1:1-1:5 (pgs. 3-7)	6AS/MD-2 Pgs. 33-35 Teaching for Mastery Y6 P6
2	Learning Outcome 2, 3 Pupils explain the effect on the product when scaling the factors by the same amount Pupils use their knowledge of equivalence when scaling factors to solve problems **WALT explain and apply**	Teaching point 1 Step 1:6 - 1:9 (pgs. 8-11)	I See Reasoning P28 I know so…
3	Learning Outcome 4 Pupils explain the effect on the quotient when scaling the dividend and divisor by 10 **WALT explain**	Teaching point 2 Steps 2:1-2:5 (pgs. 12-16)	
4	Learning Outcome 5 Pupils explain the effect on the quotient when scaling the dividend and divisor by the same amount **WALT explain**	Teaching point 2 Steps 2:6-2:11 (pgs. 16- 20)	
		Multiplication strategies for larger numbers and long multiplication	
5	Learning Outcome 6,7 Pupils explain how to multiply a three-digit by a two-digit number Pupils explain how to accurately use the method of long multiplication to multiply two, two-digit numbers (no regrouping of ones to tens) **WALT multiply**	Teaching point 3 Steps 3:1 – 3:3 (pgs. 18-21) Teaching point 4 Steps 4:1-4:4 (pgs. 22-25)	I See Reasoning P27 Explain the mistakes
6	Learning Outcome 8,9 Pupils explain how to accurately use the method of long multiplication (with regrouping of ones to tens) Pupils explain how to accurately use the method of long multiplication (with regrouping of ones to tens & tens to hundreds) **WALT multiply**	Teaching point 4 Steps 4:5-4:8 (pgs. 25-29)	

7	Learning Outcome 10,11 Pupils explain how to accurately use the method of long multiplication to multiply a three-digit by a two-digit number Pupils explain how to accurately use the method of long multiplication to multiply a four-digit by a two-digit number **WALT multiply**	Teaching point 4 Steps 4:9-4:13 (pgs. 29-35)	
8	Learning Outcome 12,13 Pupils explain how to use the associative law to multiply efficiently Pupils explain when it is more efficient to use long multiplication or factorising to multiply by two-digit numbers **WALT explain efficiency**	Teaching point 5 Steps 5:1-5:6 (pgs. 36-41)	I See Reasoning P34 Missing digits
		Division: dividing by two-digit divisors	
9	Learning Outcome 14 Pupils explain how to use accurately the methods of short and long division (two and three-digit number by multiples of 10) **WALT explain**	Teaching point 1 Steps 1:1-1:3 (pgs. 4-7)	I See Reasoning P38 I know so…
10	Learning Outcome 15,16 Pupils explain how to use accurately the method of long division with and without remainders (two-digit by two-digit numbers) Pupils use knowledge of long division to solve problems in a range of contexts (with and without remainders) **WALT divide**	Teaching point 1 Steps 1:4-1:7 (pgs. 7-10)	I See Reasoning P40 Explain the mistakes
11	Learning Outcome 17, 18 Pupils explain how to use a ratio chart to solve efficiently: short division Pupils explain how to use a ratio chart to solve efficiently: long division **WALT explain**	Teaching point 2 Steps 2:1 – 2:5 (pgs. 11-16)	
12	Learning Outcome 19, 20 Pupils explain how to use a ratio chart to solve efficiently: long division Pupils explain how to use accurately the method of long division with and without remainders (three-digit by two-digit, four-digit by two-digit numbers) **WALT divide**	Teaching point 2 Steps 2:6-2:9 (pgs. 16-18)	
13	Learning Outcome 21 Pupils use long division with decimal remainders (1 decimal place) **WALT divide**	Teaching point 3 Steps 3:1 – 3:2 (pgs. 19-21)	

14	Learning Outcome 22 Pupils use long division with fraction remainders **WALT divide**	Teaching point 3 Steps 3:3 – 3:4 (pgs. 21-23)	
15	Learning Outcome 23, 24 Pupils use long division with decimal remainders (2 decimal places) Pupils use knowledge of the best way to interpret and represent remainders from a range of division contexts **WALT divide**	Teaching point 3 Steps 3:5-3:7 (pgs. 23-27)	
		Using compensation to calculate	
16	Learning Outcome 25,26 Pupils explain how and why a product changes when a factor changes multiplicatively Pupils use their knowledge of multiplicative change to solve problems efficiently (multiplication) **WALT make links**	Teaching point 1 Steps 1:1-1:6 (pgs. 3-10)	I See Reasoning P41 Form of an answer
17	Learning Outcome 27 Pupils explain how and why a quotient changes when a dividend changes multiplicatively (increase or decrease) **WALT make links**	Teaching point 2 Steps 2:1-2:4 (pgs. 11-17)	
18	Learning Outcome 28 Pupils explain how and why a quotient changes when a divisor changes multiplicatively **WALT make links**	Teaching point 3 Steps 3:1-3:2 (pgs. 18-19)	
19	Learning Outcome 29 Pupils identify and explain the relationship between divisors and quotients **WALT make links**	Teaching point 3 Steps 3:3-3:4 (pgs. 20-21)	
20	Opportunities for assessment	Ready to Progress 6AS/MD-2 Assessment questions p35	Teaching for Mastery Y6 P17 All questions

Unit 6 – area, perimeter, position and direction

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Area, perimeter, position and direction	Multiplicative contexts: area and perimeter 2	Y6 Ready to Progress
1	Learning Outcome 1 Pupils explain how to calculate the area of a parallelogram **WALT calculate**	Teaching point 1 Steps 1:1-1:7 (pgs. 4-10)	
2	Learning Outcome 2 Pupils explain how to calculate the area of a triangle **WALT calculate**	Teaching point 2 Steps 2:1-2:9 (pgs. 11-20)	I See Reasoning P76
3,4,5 *These outcomes should take a lesson each with opportunity for problem solving through N Rich afterwards*	Learning Outcome 3 Pupils explain why shapes can have the same perimeters but different areas **WALT explore**	Teaching point 3 Steps 3:1-3:3 (pgs. 21-23)	
	Learning Outcome 4 Pupils explain why shapes can have the same areas but different perimeters **WALT investigate**	Teaching point 3 Steps 3:4- 3:5 (pgs. 24-25)	N Rich Through the window N Rich Warmsnug double glazing – GD challenge
6	Learning Outcome 5,6 Pupils describe the relationship between scale factors and side lengths of two shapes Pupils describe the relationship between scale factors and perimeters of two shape **WALT describe**	Teaching point 4 Steps 4:1-4:5 (pgs. 26-30)	
7	Learning Outcome 7 Pupils describe positions on the full coordinate grid (all four quadrants) **WALT describe**	As there are no representations for these outcomes, use teacher modelling on squared paper of -10 to 10 grid in all four quadrant to revise position and translation (from Y5).	Teaching for Mastery Y6 P35 Bottom two activities I See Reasoning P87/88
8 and 9	Learning Outcome 8 Pupils draw and translate simple shapes on the coordinate plane and reflect them in the axes **WALT translate**		
10	Opportunities for assessment In order to prepare pupils fully for KS2 assessments, they may need to recap reflection.		Teaching for Mastery Y6 P36 All activities

Unit 7 – fractions and percentages

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Fractions and percentages	Finding equivalent fractions and simplifying fractions	Y6 Ready to Progress
1	Learning Outcome 1,2 Pupils explain how to write a fraction in its simplest form Pupils reason and apply their knowledge of how to write a fraction in its simplest form **WALT reason**	Teaching point 3 Steps 3:1-3:9 (pgs. 36-42)	6F – 1 (p43-46) 6F – 2 (p47-50) 6F – 3 (p50-52)
2	Learning Outcome 3,4,5 Pupils use their knowledge of how to write a fraction in its simplest form when solving addition and subtraction problems Pupils use their knowledge of how to write a fraction in its simplest form when solving multiplication problems **WALT simplify**	Teaching point 3 Steps 3:10-3:15 (pgs. 42-45)	
		Common denomination: more adding and subtracting	
3	Learning Outcome 6,7 Pupils explain, using an image, how to add related fractions (unit fractions) Pupils explain what is meant by 'related fractions' **WALT add**	Teaching point 1 Steps 1:1-1:10 (pgs. 4-10)	
4	Learning Outcome 8,9 Pupils explain, without using an image, how to add related fractions Pupils use their knowledge of adding related fractions to solve problems in a range of contexts **WALT add**	Teaching point 1 Steps 1:11-1:14 (pgs. 11-16)	
5	Learning Outcome 10 Pupils explain, with and without using an image, how to subtract related fractions (unit fractions) **WALT subtract**	Teaching point 2 Steps 2:1-2:8 (pgs. 17-21)	
6	Learning Outcome 11 Pupils use their knowledge of adding and subtracting related fractions to solve problems in a range of contexts **WALT apply**	Teaching point 2 Steps 2:9-2:10 (pgs. 21-22)	

7	Learning Outcome 12,13 Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions) Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions that bridge the whole) **WALT add and subtract**	Teaching point 3 Steps 3:1-3:8 (pgs. 23-28)	
8	Learning Outcome 14 Pupils use their fraction sense to fraction addition, subtraction and comparison **WALT make links**	Teaching point 4 Steps 4:1-4:3 (pgs. 29-30)	
9	Learning Outcome 15 Pupils explain how to add or subtract non-related fractions with different denominators **WALT explain**	Teaching point 4 Steps 4:4-4:11 (pgs. 30-35)	
10	Learning Outcome 16 Pupils use their knowledge of adding or subtracting non-related fractions with different denominators to solve problems in a range of contexts (non related fractions) **WALT apply**	Teaching point 4 Steps 4:12-4:14 (pgs. 35-39)	I See Reasoning P54 Teaching for Mastery Y6 P20 bottom activities P21 Top activities
11	Learning Outcome 17,18 Pupils explain how to compare pairs of non-related fractions (converting to common denominators) Pupils explain how to compare pairs of non-related fractions (using fraction sense) **WALT compare**	Teaching point 5 Steps 5:1-5:9 (pgs. 40-45)	I See Reasoning P46 & 48
12	Learning Outcome 19.20 Pupils explain how to compare pairs of non-related fractions (using common numerators) Pupils explain which method for comparing non-related fractions is most efficient **WALT compare**	Teaching point 5 Steps 5:10-5:15 (pgs. 46-50)	RTP 6F-1, 2 and 3 Assessment questions (all)
		Multiplying fractions and dividing fractions by a whole number	
13	Learning Outcome 21 Pupils explain how to multiply two unit fractions **WALT multiply**	Teaching point 1 Steps 1:1-1:7 (pgs. 5-12)	

14	Learning Outcome 22 Pupils explain how to multiply two non-unit fractions **WALT multiply**	Teaching point 1 Steps 1:8-1:12 (pgs. 13-17)	I See Reasoning P55-57
15	Learning Outcome 23, 24 Pupils explain how to divide a unit fraction by a whole number Pupils explain how to divide a non-unit fraction by a whole number **WALT divide**	Teaching point 2 Steps 2:1-2:9 (pgs. 18-24)	I See Reasoning P58
16	Learning Outcome 25 Pupils explain when and how to divide efficiently a fraction by a whole number **WALT divide**	Teaching point 3 Steps 3:1-3:8 (pgs. 25-30)	Teaching for Mastery Y6 P22 Both top activities
		Linking fractions, decimals and percentages	
17	Learning Outcome 26, 27 Pupils explain what percent means Pupils explain how to represent a percentage in different ways **Make links**	Teaching point 4 Steps 4:1-4:3 Teaching point 5 Steps 5:1-5:3 (pgs. 22-27)	
18	Learning Outcome 28, 29 Pupils explain how to convert percentages to decimals and fractions (with a denominator of 100) Pupils explain how to convert a percentage to a fraction (without denominator of 100) **WALT convert**	Teaching point 5 Steps 5:4-5:9 (pgs. 27-32)	
19	Learning Outcome 30 Pupils use their knowledge of fraction-decimal-percentage conversions to solve conversion problems in a range of contexts **WALT apply**	Teaching point 5 Steps 5:10-5:11 (pgs. 32-34)	
20	Learning Outcome 31 Pupils use their knowledge of calculating 50%, 10% and 1% of a number to solve problems in a range of contexts **WALT calculate**	Teaching point 6 Steps 6:1-6:5 (pgs. 35-37)	
21	Learning Outcome 32 Pupils use their knowledge of calculating common percentages of a number to solve problems in a range of contexts **WALT calculate**	Teaching point 6 Steps 6:6-6:8 (pgs. 38-40)	Teaching for Mastery Y6 P21 Both middle activities

22	Learning Outcome 33 Pupils use their knowledge of calculating any percentage of a number to solve problems in a range of contexts **WALT calculate**	Teaching point 6 Steps 6:9-6:10 (pgs. 41-44)	N Rich Mathland election GD problem
23	Learning Outcome 34 Pupils explain how to solve problems where the percentage part and the size of the part is known and the whole is unknown **WALT make links**	Teaching point 6 Steps 6:11-6:13 (pgs. 44-48)	
24	Learning Outcome 35 Pupils explain how to solve problems where the known percentage part and the size of the part changes the whole **WALT explain**	Teaching point 6 Steps 6:14-6:15 (pgs. 48-50)	I See Reasoning P61
25	Opportunities for assessment and revision from Y5 (including finding fractions of quantities)	N Rich Peaches i works as a secure problem ii and iii work as GD problems	I See Reasoning P51

Unit 8 – statistics

Lesson	Curriculum Prioritisation Learning Outcomes	Supporting materials
Key links	Statistics	Y6 Ready to Progress
Teachers should read the guidance on the above web page before considering how to implement this learning. Pupils should be exposed to examples of pie charts and line graphs in context. This can be linked to science learning throughout the year (for example heart rate when studying the circulatory system or through fitness in PE). Alternately, sets of real data can be studied (again, linked to another area of learning) – see N Rich's Birdwatch data below for ideas. N Rich Birdwatch		I See Reasoning P90-92 Teaching for Mastery Y6 P25 Bottom pie chart activities only P36 All activities P37-38 (top activities on p38) N Rich Class 5's names – whole class investigation

Unit 9 - ratio and proportion

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Ratio and proportion	Scale factors, ratio and proportional reasoning	Y6 Ready to Progress
1	Learning Outcome 1 Pupils describe the relationship between two factors (in a ratio context) **WALT describe**	Teaching point 1 Steps 1:1-1:3 (pgs. 4-6)	6AS/MD-3 P36-39 N Rich Rod ratios- interactive way to use manipulatives to explore ratio
2	Learning Outcome 2 Pupils explain how to use multiplication and division to calculate unknown values (two variables) **WALT explain**	Teaching point 1 Steps 1:4-1:5 (pgs. 6-9)	I See Reasoning P60
3	Learning Outcome 3 Pupils explain how to use multiplication and division to calculate unknown values (three variables **WALT calculate**	Teaching point 1 Step 1:6 (pgs. 9-11)	Teaching for Mastery Y6 P23-25 (not bottom pie chart activities on P25) N Rich Orange drink N Rich Pumpkin pie problem
4	Learning Outcome 4 Pupils explain how to use a ratio grid to calculate unknown value **WALT calculate**	Teaching point 1 Steps 1:7-1:8 (pgs. 11-16)	
5	Learning Outcome 5 Pupils explain how to use multiplication to solve correspondence problems **WALT multiply**	Teaching point 2 Steps 2:1-2:5 (pgs. 17-21)	
6	Learning Outcome 6 Pupils explain how and why scaling is used to make and interpret maps **WALT interpret**	Teaching point 3 Steps 3:1-3:3 (pgs. 22-23)	
7	Learning Outcome 7 Pupils will use their knowledge of multiplication and division to solve scaling problems in a range of context **WALT apply**	Teaching point 3 Steps 3:4 -3:6 (pgs. 23-27)	
8	Learning Outcome 8 Pupils identify and describe the relationship between two shapes using scale factors (squares) **WALT identify and describe**	Teaching point 4 Steps 4:1-4:3 (pgs. 28-30)	

9	Learning Outcome 9 Pupils identify and describe the relationship between two shapes using scale factors and ratios (regular polygons) **WALT identify and describe**	Teaching point 4 Steps 4:4-4:6 (pgs. 30-34)	
10	Learning Outcome 10 Pupils identify and describe the relationship between two shapes using scale factors and ratios (irregular polygons) **WALT identify and describe**	Teaching point 4 Steps 4:7-4:10 (pgs. 34-39)	N Rich Growing rectangles Possible GD investigation

Unit 10 – Calculating using knowledge of structures (2)

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Calculating using knowledge of structures (2)	Using equivalence and the compensation property to calculate	Y6 Ready to Progress
1	Learning Outcome Pupils explain how to balance equations with addition expressions **WALT explain**	Teaching point 6 Steps 6:1-6:2 (pgs. 49-50)	
2	Learning Outcome Pupils explain how to balance equations with subtraction expressions **WALT explain**	Teaching point 6 Steps 6:3-6:4 (pgs. 50-52)	
3	Learning Outcome Pupils explain how to balance equations with addition or subtraction expressions **WALT explain**	Teaching point 6 Step 6:5 (pgs. 52-53)	
4	Learning Outcome Pupils explain how to balance equations with addition and subtraction expressions **WALT explain**	Teaching point 6 Step 6:6 (pgs. 53-54)	
5	Learning Outcome Pupils use their knowledge of balancing equations to solve problems **WALT solve**	Teaching point 6 Steps 6:7-6:8 (pgs. 54-55)	

Unit 11 – Solving problems with two unknowns

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Solving problems with two unknowns	Problems with two unknowns	Y6 Ready to Progress
1	Learning Outcomes 1,2, Pupils compare the structure of problems with one or two unknowns Pupils compare the structure of problems with two unknowns **WALT compare**	Teaching point 1 Steps 1:1-1:4 (pgs. 6-9)	
2	Learning Outcomes 3,4 Pupils represent the structure of contextual problems with two unknowns (using a bar model) **WALT represent**	Teaching point 2 Steps 2:1-2:5 (pgs. 10-17)	
3	Learning Outcomes 5,6,7 Pupils explain why sometimes there is only one solution to a sum and difference problem Pupils explain why sometimes there is only one solution to a sum and multiple problem Pupils explain the values a part-whole model could represent **WALT explain**	Teaching point 3 Steps 3:1-3:7 (pgs. 18-26)	
4	Learning Outcomes 8,9, 10, 11 Pupils use a bar model to visualise how to solve a problem with two unknowns Pupils use diagrams to explain how to solve a spatial problem Pupils explain how to represent an equation with a bar model Pupils solve problems with two unknowns in a range of contexts **WALT apply**	Teaching point 4 Steps 4:1-4:5 (pgs. 27-37)	Teaching for Mastery Y6 P13 Activity 2 for Mastery and GD
5	Learning Outcomes 12,13,14,15 Pupils systematically solve problems with two unknowns using 'trial and improvement' (one and several solutions) Pupils explain how I know I have found all possible solutions to problems with two unknowns Pupils explain how to balance an equation with two unknowns Pupils systematically solve problems with two unknowns using 'trial and improvement' (one, several and infinite solutions) **WALT solve**	Teaching point 5 Steps 5:1-5:7 (pgs. 38-44)	Teaching for Mastery Y6 P14 Bottom activities for Mastery and GD

NB although the NC objectives are covered in these units, the terms 'expressions' and 'equations' are not directly taught, nor are children introduced to the idea of '5n' representing 5 lots of the unknown. WRM has an algebra unit that teaches these explicitly and this can be complimented with the resources suggested.	I See Reasoning P63-65 Algebra Teaching for Mastery Y6P27,28,29

Unit 12 – order of operations

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Order of operations	Combining multiplication with addition and subtraction	Y6 Ready to Progress
1	Learning Outcomes 1,2 Pupils explain how addition and subtraction can help to solve multiplication problems efficiently **WALT explain**	Teaching point 1 Steps 1:1-1:5 (pgs. 3-9)	
2	Learning Outcomes 3, 4 Pupils explain how the distributive law applies to multiplication expressions with a common factor (addition) Pupils use their knowledge of the distributive law to solve equations including multiplication, addition and subtraction **WALT apply**	Teaching point 2 Steps 2:1-2:5 (pgs. 10-14)	Teaching for Mastery Y6 P13
		Combining division with addition and subtraction	
3	Learning Outcome 5 Pupils explain how addition and subtraction can help to solve division problems efficiently **WALT explain**	Teaching point 1 Steps 1:1-1:5 (pgs. 3-8)	
4	Learning Outcomes 6,7 Pupils explain how the distributive law applies to division expressions with a common divisor (addition) Pupils explain how the distributive law applies to division expressions with a common divisor (subtraction) **WALT explain**	Teaching point 2 Steps 2:1-2:4 (pgs. 9-16) *NB lessons 4 and 5 could overlap.*	
5	Learning Outcome 8 Pupils use their knowledge of the distributive law to solve equations including division, addition and subtraction **WALT apply**	Teaching point 2 Step 2:5 (pg. 16)	Teaching for Mastery Y6 P13 N Rich Countdown

Unit 13 – mean average

Lesson	Curriculum Prioritisation Learning Outcomes	Spine pedagogy document	Supporting materials
Key links	Mean average	Mean average and equal shares	Y6 Ready to Progress
1	Learning Outcome 1 Pupils explain the relationship between the mean and sharing equally **WALT explain**	Teaching point 1 Steps 1:1-1:4 (pgs. 4-8)	
2	Learning Outcome 2 Pupils explain how to calculate the mean of a set of data **WALT explain**	Teaching point 2 Steps 2:1-2:4 (pgs. 9-13)	Top Trumps cards are a great way to practice fluency in calculating the mean of a set of data. Any types of TT cards can be used.
3	Learning Outcome 3 Pupils explain how the mean changes when the total quantity or number of values changes **WALT explain**	Teaching point 2 Steps 2:5-2:6 (pgs. 13-16)	
4	Learning Outcome 4 Pupils explain how to calculate the mean when one of the values in the data set is zero or missing **WALT explain**	Teaching point 2 Steps 2:7-2:8 (pgs. 16-19)	
5	Learning Outcome 5,6 Pupils explain how to use the mean to make comparisons between two sets of information Pupils explain when the mean is not an appropriate representation of a set of data **WALT explain**	Teaching point 3 Steps 3:1-3:2 (pgs. 20-21) Teaching point 4 Steps 4:1-4:2 (pgs. 22-23)	I See Reasoning P94 Teaching for Mastery Y6 P38 Activity 2 Mastery and GD