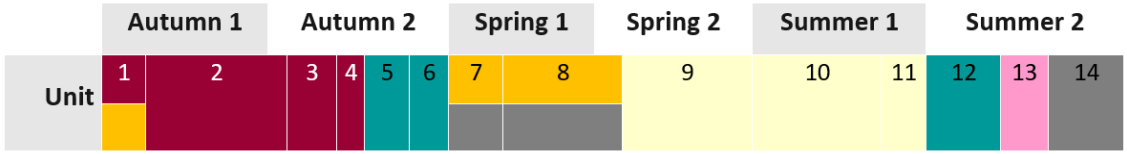
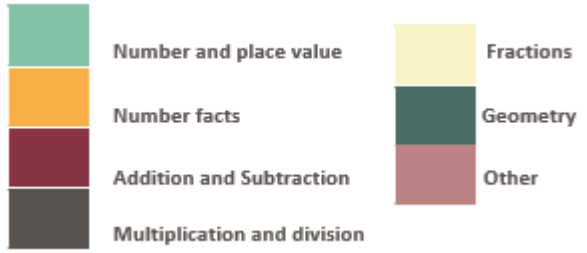
Year 3/4 Maths Curriculum – Year B





*please note that the geometry and statistics units will be taught as a whole key stage

	Year 3 and 4	NC Objectives
1	**NCETM Year 3 Unit 1 - Adding and subtracting across 10** • **2AS–1 Add and subtract across 10.** • **3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.** • 1.11 Addition and subtraction: bridging 10	**Y3 Number – Addition and Subtraction** **Solve problems with addition and subtraction:** • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing knowledge of mental and written methods • adding three one-digit numbers • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (NC Y2 NCETM Y3) **Non Statutory Notes** NAS - Pupils extend their understanding of the language of addition and subtraction to include sum and difference. NAS - Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10; 10 – 7 = 3 and 7 = 10 – 3 to calculate 30 + 70 = 100; 100 – 70 = 30 and 70 = 100 – 30. They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition. NB – This will be taught as an over teach unit in both the Year A and Year B cycle.
2	**Manipulating the additive relationship and securing mental calculation** • **3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.** • 1.19 Securing mental strategies: calculation up to 999	**Y3 Number - Addition and Subtraction** • add and subtract numbers mentally, including • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds • estimate the answer to a calculation and use inverse operations to check answers • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Non Statutory Notes** NAS - Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100. NAS - Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.
3	**NCETM Year 3 Unit 5 - Column addition (Including NCETM Year 4 Unit 1 - review of Column addition)** • **3AS–2 Add and subtract up to three-digit numbers using columnar methods.** • 1.20 Algorithms: column addition	**Number - Addition and Subtraction** • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction (Y3) • estimate the answer to a calculation and use inverse operations to check answers (Y3 and Y4) • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction (Y3) • Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtractions where appropriate (Y4) • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why (Y4) **Non Statutory Notes**

		NAS - Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent (see Mathematics Appendix 1) (Y3) NAS - Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1) (Y4) NB – This will be taught as an over teach unit in both the Year A and Year B cycle.
4	**NCETM Year 3 Unit 7 - Column subtraction (Including NCETM Year 4 Unit 1 - review of Column subtraction)** • **3AS–2 Add and subtract up to three-digit numbers using columnar methods.** • **1.21 Algorithms: column subtraction**	**Number - Addition and Subtraction** ● add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction (Y3) ● estimate the answer to a calculation and use inverse operations to check answers (Y3 and 4) ● solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction (Y3) ● Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtractions where appropriate (Y4) ● Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why (Y4) **Non Statutory Notes** NAS - Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent (see Mathematics Appendix 1).(Y3) NAS - Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1) (Y4) NB – This will be taught as an over teach unit in both the Year A and Year B cycle.
5	**NCETM Year 3 Unit 6 - 2, 4, 8 times tables** • **3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division.** • **3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.** • **3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).** • **2.7 Times tables: 2, 4 and 8, and the relationship between them**	**Y3 Number – Multiplication and Division** ● recall and use multiplication and division facts for the 2, 4 and 8 multiplication tables (3x table NC Y3 NCETM Y4) ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, **Non Statutory Notes** NMD - Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100. (3x table NC Y3 NCETM Y4) NMD - Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they connect the 2, 4 and 8 multiplication tables.
6	**NCETM Year 4 Unit 6 - Understanding and manipulating multiplicative relationships** • **4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.** • **4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.** • **4MD–3 Understand and apply the distributive property of multiplication.** • **4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)** • **2.10 Connecting multiplication and division, and the distributive law** • **2.13 Calculation: multiplying and dividing by 10 or 100**	**Y4 Number – Multiplication and Division** ● recall multiplication and division facts for multiplication tables up to 12 × 12 (year 4) ● solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit **Non Statutory Notes** NMD - Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60.

7	**NCETM Year 3 Unit 8 - Unit fractions** • **3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.** • **3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).** • **3.1 Preparing for fractions: the part–whole relationship** • **3.2 Unit fractions: identifying, representing and comparing**	**Y3 Number - Fractions** • recognise, find and write fractions of a discrete set of objects: unit fractions and non unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • compare and order unit fractions, and fractions with the same denominators • add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] • solve problems that involve all of the above. **Non Statutory Notes** NF - Pupils make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. (NC Y4 NCETM Y3) NF - They begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the [0, 1] interval, including relating this to measure. NF - Pupils understand the relation between unit fractions as operators (fractions of), and division by integers. NF - They continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.
8	**NCETM Year 3 Unit 9 - Non-unit fractions** • **3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.** • **3F–3 Reason about the location of any fraction within 1 in the linear number system.** • **3F–4 Add and subtract fractions with the same denominator, within 1.** • **3.3 Non-unit fractions: identifying, representing and comparing** • **3.4 Adding and subtracting within one whole**	**Y3 Number - Fractions** • recognise, find and write fractions of a discrete set of objects: unit fractions and non unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • compare and order unit fractions, and fractions with the same denominators • add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] • solve problems that involve all of the above. **Non Statutory Notes** NF - Pupils make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. (NC Y4 NCTM Y3) NF - They begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the [0, 1] interval, including relating this to measure. NF - They continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity. NF - Pupils practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.
9	**NCETM Year 4 Unit 9 – Introduction to Fractions greater than 1** • **4F–1 Reason about the location of mixed numbers in the linear number system.**	NB – This will be taught as an over teach in both the Year A and Year B cycle – RtP Criteria 4F-1 Reason about the location of mixed numbers in the linear number system only.
10	**NCETM Year 3 Unit 3 - Right angles** • **3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.**	**Y3 Geometry – Properties of Shape** • recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
11	**NCETM Year 4 Unit 3 - Perimeter and Right Angles** • **4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.** • **2.16 Multiplicative contexts: area and perimeter 1**	**Y4 Measure** • measure the perimeter of simple 2-D shapes (NC Y3 NCETM Y4) • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • convert between different units of measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres (NC Y5 NCETM Y4) • distinguish between regular and irregular polygons based on reasoning about equal sides and angles (NC Y5 NCETM Y4) **Y4 Geometry – Properties of Shapes** • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes **Non Statutory Notes** GPS - Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.

		GPS - Pupils continue to classify shapes using geometrical properties, extending to classifying different triangles (for example, isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, trapezium). GPS - Pupils compare and order angles in preparation for using a protractor M - Pupils calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. Missing measures questions such as these can be expressed algebraically, for example 4 + 2b = 20 for a rectangle of sides 2 cm and b cm and perimeter of 20cm. (NC Y5 NCTEM Y4)
12	**NCETM Year 4 Unit 7 - Coordinates** • **4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.**	**Y4 Geometry – Position and Direction** ● describe positions on a 2-D grid as coordinates in the first quadrant ● **describe movements between positions as translations of a given unit to the left/right and up/down** ● **plot specified points and draw sides to complete a given polygon** **Non Statutory Notes** Pupils draw a pair of axes in one quadrant, with equal scales and integer labels. They read, write and use pairs of coordinates, for example (2, 5), including using coordinate plotting ICT tools
13	**NCETM Year 3 Unit 13 - Time** • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.**	**Y3 Measurement** ● tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ● estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight ● know the number of seconds in a minute and the number of days in each month, year and leap year ● compare durations of events [for example to calculate the time taken by particular events or tasks]. **Non Statutory Notes** M - Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in year 4.
14	**NCETM Year 4 Unit 12 - Division with remainders** • **4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders.** • **2.12 Division with remainders**	**Number – Multiplication and Division** ● recall multiplication and division facts for multiplication tables up to 12 × 12

NAS	Number, Addition and Subtraction
NPV	Number and Place Value
NMD	Number, Multiplication and Division
G	Geometry
GPD	Geometry, Position and Direction
GPS	Geometry, Properties of Shape
M	Measurement

Dark grey references are ready-to-progress criteria from the DfE Guidance 2020

Light grey references are from the NCETM Primary Mastery Professional Development materials

Both are available online

	1	2	3	4	5	6	7	8	9	10	11	12	13
C1	**Unit 1 (NCETM Y3)** Adding and subtracting across 10		**Unit 2 (NCETM Y3 Unit 4)** Manipulating the additive relationship and securing mental calculation Y4 ONLY 8 times table intro Lesson				**Unit 3 (NCETM Y3 Unit 5 and Y4 Unit 1)** Column addition Review of column addition		**Unit 4 (NCETM Y3 Unit 7 and Y4 Unit 1)** Column subtraction Review of column subtraction	**Unit 5 (NCETM Year 3 Unit 6)** 2, 4 and 8 times tables Y4 ONLY 6 times table intro Lesson			Consolidation
FF Y3	Consolidate addition/subtraction facts within 10 Adding 1, Adding 2, Adding 0, Bonds to 10			Doubles 1 - 5	Add in Double 10	Add in Double 6	Add in Double 7	Add in Double 8	Add in Double 9	Near Doubles (+/-1)	Near Doubles (+/-2)	Ones without a family (5+8, 8+5, 3+6, 6+3)	All addition/ subtraction of facts within 10
FF Y4	Consolidate addition/subtraction facts within 10 and 2, 4 and 5 times tables			8 times tables (5 new facts – 8x3, 8x6, 8x7, 8x8, 8x9)			8 times tables (all) plus all previous facts learnt			3 times tables (4 new facts – 3x3, 6x3, 7x3, 9x3)			3 times tables plus all previous facts
C2	**Unit 6 (NCETM Y4 – Unit 6)** Understanding and manipulating multiplicative relationships Y4 ONLY 6 times table intro Lesson Y3 ONLY 2 times table intro Lesson 1 Y3 ONLY 2 times table commutativity Lesson 2					Y3 ONLY 2 times table division Lesson 3	**Unit 7 (NCETM Y3 Unit 8)** Unit fractions Y4 ONLY 8 times table intro lesson Y3 ONLY 5 times table intro lesson				**Unit 8 (NCETM Y3 Unit 9)** Non-unit fractions Y4 ONLY 7 times table intro lesson		Consolidation

FF Y3	All addition/ subtraction of facts within 10	Doubles 1-10	2 times tables (multiplier 1st)	2 times tables (multiplier 1st or 2nd)	2 times tables (division facts too)	2 times tables	5 times tables (2x5 to 6x5)	5 times tables (7x5 to 9x5)	5 times tables (all)			
FF Y4	3 times tables plus all previous facts	6 times tables (3 new facts – 6x6, 7x6, 9x6)		6 times tables (all) plus all previous facts			9 times tables (2 new facts – 9x7, 9x9)	9 times tables (all) plus all previous facts		7 times tables (1 new fact – 7x7)	7 times tables – **all facts now learnt!**	
C3	**Unit 9 (NCETM Y3 Unit 9)** Non-unit fractions	**Unit 10 (NCETM Y4 Unit 9)** Intro to fractions greater than 1	**Unit 11 (NCETM Y3 Unit 3)** Right Angles Y3 ONLY 4 times table intro lesson		**Unit 12 (NCETM Y4 Unit 3)** Perimeter		**Unit 13 (NCETM Y4 Unit 7)** Coordinates	**Unit 14 (NCETM Y3 Unit 11)** Time	**Unit 15 (NCETM Y4 Unit 12)** Division with remainders			
FF Y3	5 times tables and 2 times tables		4 times tables (2x4 to 6x4)	4 times tables (7x4 to 9x4)	4 times tables (all)	2, 4 and 5 times tables facts						10 times tables brush up
FF Y4	All times tables up to 9x9	All times tables – including 11 and 12 times tables (if children are ready)					MTC	All times tables – including 11 and 12 times tables				

[Ready to progress Criteria Year 3 and Year 4 with examples and assessment questions - page 82 onwards]

Year 3 and 4 Assessments:

Assess all throughout Summer Term and formatively assess during the year at following points:

RTP - Mixed Age Year 3 / 4 Year B	Last Taught in	Assess End of Cycle
• 2AS–1 Add and subtract across 10.	Year 2	1
• 3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	unit 1	1
• 3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	unit 5	2
• 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	unit 5	2
• 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders.	unit 14	3
• 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	unit 6	2
• 3AS–2 Add and subtract up to three-digit numbers using columnar methods.	unit 4	2
• 3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	unit 2	1

● 3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division.	unit 5	2
● 4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	unit 6	2
● 4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	unit 6	2
● 4MD–3 Understand and apply the distributive property of multiplication.	unit 6	2
● 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.	unit 8	3
● 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).	unit 7	3
● 3F–3 Reason about the location of any fraction within 1 in the linear number system.	unit 8	3
● 3F–4 Add and subtract fractions with the same denominator, within 1.	unit 8	3
● 4F–1 Reason about the location of mixed numbers in the linear number system.	unit 9	3
● 3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	unit 10	3
● 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	unit 12	3
● 4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.	unit 11	3
Year 3 Foundational Fluency Facts		
1. Secure fluency in addition and subtraction facts to and that bridge 10, through continued practice.	**FFF Cycle 1**	**1,2,3**
2. Recall multiplication facts, and corresponding division facts, in the 5, 2, 4, 8 and 10 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	**FFF Cycle 2 and 3**	**1,2,3**
Year 4 Foundational Fluency Facts		
1. Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4, and 10 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	**FFF Year 3 (to consolidate)**	**1,2,3**
2. Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.	**FFF Cycle 1,2,3**	**1,2,3**