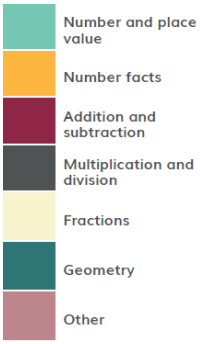
Year 4 NCETM Curriculum Map 2021



Assessment Questions for Y4 from the DFE Guidance

https://www.ncetm.org.uk/media/tfmdzvbg/cp-rtp-assessment-year-4.zip

Unit 1	**Review of column addition and subtraction (3 weeks)**
RtPs	**3AS–2 Add and subtract up to three-digit numbers using columnar methods.**
NCETM spine ref.	**1.20 Algorithms: column addition** **1.21 Algorithms: column subtraction**
Small step learning outcomes	1 Pupils identify the addends and the sum in column addition 2 Pupils use their knowledge of place value to correctly lay out column addition 3 Pupils add a pair of 2-digit numbers using column addition 4 Pupils add using column addition 5 Pupils use their knowledge of column addition to solve problems 6 Pupils add a pair of 2-digit numbers using column addition with regrouping in the ones column 7 Pupils add a pair of 2-digit numbers using column addition with regrouping in the tens column 8 Pupils add using column addition with regrouping 9 Pupils use known facts and strategies to accurately and efficiently calculate and check column addition 10 Pupils use their knowledge of column addition to solve problems 11 Pupils identify the minuend and the subtrahend in column subtraction 12 Pupils subtract using column subtraction 13 Pupils subtract from a 2-digit number using column subtraction with exchanging from tens to ones 14 Pupils subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens (1) 15 Pupils subtract from a 3-digit number using a column subtraction with exchanging from hundreds to tens (2) 16 Pupils evaluate the efficiency of strategies for subtraction
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/nosnozfc/cp-year-4-unit-1-review-of-column-addition-and-subtraction.pptx ***Specific RtP Link*** 3AS-2 Page 109 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/a0ohgpky/ncetm_mm_sp1_y3_se20_teach.pdf#page=4

Unit 2	Numbers to 10,000 (5 weeks)
RtPs	**4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.** **4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.** **4NPV–3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.** **4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.**
	4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100).
NCETM spine ref.	**1.22 Composition and calculation: 1,000 and four-digit numbers**
Small step learning outcomes	1 Pupils explain how many tens, hundreds and ones 1,000 is composed of 2 Pupils use knowledge of 1,000 to explain common measure conversions 3 Pupils use knowledge of 1,000 to solve problems 4 Pupils use different strategies to add multiples of 100 5 Pupils use different strategies to subtract multiples of 100 6 Pupils use knowledge of calculation and common measure conversions to solve problems 7 Pupils compose and decompose four-digit numbers in different ways 8 Pupils use strategies to make solving calculations more efficient 9 Pupils compare and order four-digit numbers 10 Pupils calculate efficiently by using knowledge of place value, addition and subtraction 11 Pupils explain what rounding is 12 Pupils round a four-digit number to the nearest thousand 13 Pupils round a four-digit number to the nearest hundred and ten 14 Pupils round a four-digit number to the nearest thousand, hundred and ten 15 Pupils add up to 3 four-digit numbers using a column addition 16 Pupils subtract four-digit numbers using a column subtraction 17 Pupils use strategies to make solving calculations more efficient 18 Pupils explain how many ‘100s’ and ‘200s’, 1,000 is composed of 19 Pupils explain how many ‘500s’ and ‘250s’, 1,000 is composed of
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/3jqpdcw1/cp-year-4-unit-2-numbers-to-10000.pptx ***Specific RtP Link*** 4NPV-1 Page 146 4NPV-2 Page 149 4NPV-3 Page 150 4NPV-4 Page 155 4NF-3 Page 166 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/d1we1oso/ncetm_mm_sp1_y4_se22_teach.pdf#page=4

Unit 3	Perimeter (2 weeks)
RtPs	**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.**
NCETM spine ref.	**2.16 Multiplicative contexts: area and perimeter 1**
Small step learning outcomes	1 A regular polygon has sides that are all the same length and interior angles that are all equal in size 2 Perimeter is the distance around the edge of a two-dimensional shape 3 Different shapes can have the same perimeter 4 Perimeter is measured in units of length and can be found by counting units 5 Perimeter can be calculated by adding together the side lengths of a 2D shape 6 The perimeter of a rectangle can be calculated by addition and multiplication 7 Unknown side lengths can be calculated from perimeter and known side lengths 8 The perimeter of a regular polygon can be calculated by multiplication 9 The side length of a regular polygon can be calculated by division where the perimeter is known
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/2a0jcfkc/cp-year-4-unit-3-perimeter.pptx ***Specific RtP Link*** 4G-2 Page 197 ***Spine Materials Teacher Guidance*** No spine for geometry

Unit 4	3, 6, 9 times tables (4 weeks)
RtPs	**4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.**
NCETM spine ref.	**2.8 Times tables: 3, 6 and 9, and the relationship between them**
Small step learning outcomes	1 Pupils represent counting in threes as the three times table 2 Pupils explain the relationship between adjacent multiples of three 3 Pupils use knowledge of the three times table to solve problems 4 Pupils represent counting in sixes as the six times table 5 Pupils explain the relationship between adjacent multiples of six 6 Pupils use knowledge of the six times table to solve problems 7 Pupils use known facts from the five times table to solve problems involving the six times table 8 Pupils explain the relationship between multiples of three and multiples of six 9 Pupils use knowledge of the relationships between the three and six times tables to solve problems 10 Pupils represent counting in nines as the nine times table 11 Pupils explain the relationship between adjacent multiples of nine (1) 12 Pupils explain the relationship between adjacent multiples of nine (2) 13 Pupils use known facts from the ten times table to solve problems involving the nine times table 14 Pupils explain the relationship between multiples of three and multiples of nine 15 Pupils explain the relationship between pairs of three and nine times table facts that have the same product (1) 16 Pupils explain the relationship between pairs of three and nine times table facts that have the same product (2) 17 Pupils use the divisibility rules for divisors of three 18 Pupils use the divisibility rules for divisors of six (1) 19 Pupils use the divisibility rules for divisors of six (2)
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/lxhbnouu/cp-year-4-unit-4-3-6-9-times-tables.pptx ***Specific RtP Link*** 4NF-1 Page 160 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/fckpucaj/ncetm_spine2_segment08_y3.pdf#page=4

Unit 5	7 times table and patterns (2 weeks)
RtPs	4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.
NCETM spine ref.	2.9 Times tables: 7 and patterns within/across times tables
Small step learning outcomes	1 Pupils represent counting in sevens as the 7 times table 2 Pupils explain the relationship between adjacent multiples of seven 3 Pupils use their knowledge of the 7 times table to solve problems 4 Pupils identify patterns of odd and even numbers in the times tables 5 Pupils represent a square number 6 Pupils use knowledge of divisibility rules to solve problems
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/wzhdf0dh/cp-year-4-unit-5-7-times-table-and-patterns.pptx ***Specific RtP Link*** 4NF-1 Page 160 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/3rfbznaa/ncetm_spine2_segment09_y3.pdf#page=5

Unit 6	Understanding and manipulating multiplicative relationships (5 weeks) 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.
RtPs	4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)
NCETM spine ref.	2.10 Connecting multiplication and division, and the distributive law 2.13 Calculation: multiplying and dividing by 10 or 100
Small step learning outcomes	1 Pupils explain what each factor represents in a multiplication equation 2 Pupils explain how each part of a multiplication and division equation relates to a story 3 Pupils explain where zero can be part of a multiplication or division expression and the impact it has 4 Pupils partition one of the factors in a multiplication equation in different ways using representations (I) 5 Pupils partition one of the factors in a multiplication equation in different ways using representations (II) 6 Pupils explain which is the most efficient factor to partition to solve a multiplication problem 7 Pupils use knowledge of distributive law to solve two part addition and subtraction problems, efficiently 8 Pupils use knowledge of distributive law to calculate products beyond known times tables facts 9 Pupils explain the relationship between multiplying a number by 10 and multiples of 10 10 Pupils explain why a zero can be placed after the final digit of a single-digit number when we multiply it by 10 11 Pupils explain why a zero can be placed after the final digit of a two-digit number when we multiply it by 10 12 Pupils explain why the final digit zero can be removed from a two-digit multiple of 10, when we divide by 10 13 Pupils explain why the final digit zero can be removed from a three-digit multiple of 10, when we divide by 10 14 Pupils explain the relationship between multiplying a number by 100 and multiples of 100 15 Pupils explain why two zeros can be placed after the final digit of a single-digit number when we multiply it by 100 16 Pupils explain why two zeros can be placed after the final digit of a two-digit number when we multiply it by 100 17 Pupils explain why the last two zeros can be removed from a three-digit multiple of 100

	when we divide it by 100 18 Pupils explain why the last two zeros can be removed from a four-digit multiple of 100 when we divide it by 100 19 Pupils use knowledge of the composition of 100 to multiply by 100 in different ways 20 Pupils use knowledge of the composition of 100 to divide by 100 in different ways 21 Pupils explain how making a factor 10 times the size affects the product 22 Pupils explain how making the dividend 10 times the size affects the quotient 23 Pupils explain how making a factor 100 times the size affects the product 24 Pupils explain how making the dividend 100 times the size affects the quotient 25 Pupils scale known multiplication facts by 100 26 Pupils scale division derived from multiplication facts by 100
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/asyjebai/cp-year-4-unit-6-understanding-and-manipulating-multiplicative-relationships.pptx ***Specific RtP Link*** 4MD-1 Page 170 4MD-2 Page 173 4MD-3 Page 178 4NF-3 Page 166 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/qdif4n2k/ncetm_spine2_segment10_y4.pdf#page=4 https://www.ncetm.org.uk/media/g30d2vg5/ncetm_spine2_segment13_y4.pdf#page=4

Unit 7	**Coordinates (2 weeks)**
RtPs	**4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.**
NCETM spine ref.	**No spine**
Small step learning outcomes	1 Pupils give directions from one position to another on a grid 2 Pupils move objects including polygons on a grid according to directions, and mark the new position 3 Pupils describe translations of polygons drawn on a square grid 4 Pupils draw polygons specified by translations 5 Pupils mark points specified as a translation from the origin 6 Pupils mark the position of points specified by coordinates in the first quadrant of a coordinate grid, and write coordinates for already-marked points 7 Pupils draw polygons specified by coordinates in the first quadrant 8 Pupils translate polygons in the first quadrant
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/gtjfunto/cp-year-4-unit-7-coordinates.pptx ***Specific RtP Link*** 4G-1 Page 192 ***Spine Materials Teacher Guidance*** No spine

Unit 8	Review of fractions (1 week)
RtPs	**3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.**
NCETM spine ref.	**3.1 Preparing for fractions: the part–whole relationship**
Small step learning outcomes	1 Pupils identify a whole and the parts that make it up 2 Pupils explain why a part can only be defined when in relation to a whole 3 Pupils identify the number of equal or unequal parts in a whole 4 Pupils identify equal parts when they do not look the same 5 Pupils explain the size of the part in relation to the whole 6 Pupils construct a whole when given a part and the number of parts
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/uuofl0om/cp-year-4-unit-8-review-of-fractions.pptx ***Specific RtP Link*** 3F-1 Page 120 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/1qyn40y1/ncetm_spine3_segment01_y3.pdf#page=4

Unit 9	Fractions greater than 1 (5 weeks)
RtPs	**4F–1 Reason about the location of mixed numbers in the linear number system.** **4F–2 Convert mixed numbers to improper fractions and vice versa.** **4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.**
NCETM spine ref.	**3.5 Working across one whole: improper fractions and mixed numbers**
Small step learning outcomes	1 Pupils explain how to express quantities made up of both whole numbers and a fractional part 2 Pupils explain how a quantity made up of whole numbers and a fractional part is composed 3 Pupils compose and decompose quantities made of whole numbers and fractional parts 4 Pupils accurately label a range of number lines and explain the meaning of each part 5 Pupils identify numbers on marked but unlabelled number lines 6 Pupils estimate the position of numbers on a number line using fraction sense 7 Pupils compare and order mixed numbers using fraction sense 8 Pupils compare and order mixed numbers when the whole number is the same 9 Pupils compare and order mixed numbers when the whole number and the numerator of the fractional part is the same 10 Pupils make efficient choices about the order they solve an addition problem in 11 Pupils make efficient choices about the order they solve a subtraction problem in 12 Pupils express a quantity as a mixed number and an improper fraction (quarters) 13 Pupils convert a quantity from an improper fraction to a mixed number (quarters) 14 Pupils express and convert a quantity from an improper fraction to a mixed number (fifths) 15 Pupils explain how an improper fraction is converted into a mixed number (any unit) 16 Pupils explain how a mixed number is converted into an improper fraction 17 Pupils add mixed numbers 18 Pupils subtract a proper fraction from a mixed number (converting to an improper fraction first) 19 Pupils subtract a mixed number from a mixed number and explain which strategy is most efficient 20 Pupils use knowledge of subtraction to choose correct and efficient approaches when subtracting mixed numbers
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/q2abttfi/cp-year-4-unit-9-fractions-greater-than-1.pptx ***Specific RtP Link*** 4F-1 page 182 4F-2 page 185 4F-3 page 188 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/vuhkoxkd/ncetm_spine3_segment05_y4.pdf#page=4

Unit 10	Symmetry in 2D shapes (2 weeks)
RtPs	**4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.**
NCETM spine ref.	**No spine**
Small step learning outcomes	1 Pupils complete a symmetrical pattern 2 Pupils compose symmetrical shapes from two congruent shapes 3 Pupils investigate lines of symmetry in 2D shapes by folding paper shape cut-outs 4 Pupils find lines of symmetry in 2D shapes using a mirror 5 Pupils reflect polygons in a line of symmetry 6 Pupils reflect polygons that are dissected by a line of symmetry
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/u5jdfjgc/cp-year-4-unit-10-symmetry-in-2d-shapes.pptx ***Specific RtP Link*** 4G-3 Page 201 ***Spine Materials Teacher Guidance*** No spine for geometry

Unit 11	Time (1 week)
RtPs	**This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.**
NCETM spine ref.	**NA**
Small step learning outcomes	There are no NCETM small step learning outcomes for this unit. **National curriculum statutory requirements (p28)** Pupils should be taught to: • read, write and convert time between analogue and digital 12- and 24-hour clocks • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
Download Links	***Classroom Slides*** No slides available but see NCETM's website for further ideas https://www.ncetm.org.uk/classroom-resources/cp-year-4-unit-11-time/ ***Specific RtP Link*** This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials. ***Spine Materials Teacher Guidance*** No spine guidance

Unit 12	Division with remainders (2 weeks)
RtPs	**4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders.**
NCETM spine ref.	**2.12 Division with remainders**
Small step learning outcomes	1 Pupils interpret a division story when there is a remainder and represent it with an equation (i) 2 Pupils interpret a division story when there is a remainder and represent it with an equation (ii) 3 Pupils interpret a division story when there is a remainder and represent it with an equation (iii) 4 Pupils explain how the remainder relates to the divisor in a division equation 5 Pupils explain when there will and will not be a remainder in a division equation 6 Pupils use knowledge of division equations and remainders to solve problems 7 Pupils interpret the answer to a division calculation to solve a problem (i) 8 Pupils interpret the answer to a division calculation to solve a problem (ii)
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/flvfptkq/cp-year-4-unit-12-division-with-remainders.pptx ***Specific RtP Link*** 4NF-2 Page 163 ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/lhnbhb1v/ncetm_spine2_segment12_y4.pdf#page=4