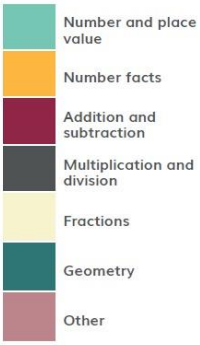
Year 5 NCETM Curriculum Map 2022



Assessment Questions for Y5 from the DFE Guidance

https://www.ncetm.org.uk/media/uyomny2v/cp-rtp-assessment-year-5.zip

Unit 1	Decimal Fractions
RtPs	**5NPV–1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.** **5NPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.** **5NPV–3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.** **5NPV–4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.**
	5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).
NCETM spine ref.	**1.23 Composition and calculation: tenths** **1.24 Composition and calculation: hundredths and thousandths**
Small step learning outcomes	1 Pupils identify tenths as part of a whole 2 Pupils describe and represent tenths as a decimal fraction 3 Pupils count in tenths in different ways 4 Pupils describe and write decimal numbers with tenths in different ways 5 Pupils compare and order decimal numbers with tenths 6 Pupils explain that decimal numbers with tenths can be composed additively 7 Pupils explain that decimal numbers with tenths can be composed multiplicatively 8 Pupils use their knowledge to calculate with decimal numbers within and across one whole 9 Pupils use their knowledge to calculate with decimal numbers using mental methods 10 Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction 11 Pupils use representations to round a decimal number with tenths to the nearest whole number 12 Pupils identify hundredths as part of a whole 13 Pupils describe and represent hundredths as a decimal fraction 14 Pupils describe and write decimals numbers with hundredths in different ways 15 Pupils compare and order decimal numbers with hundredths 16 Pupils explain that decimal numbers with hundredths can be partitioned in different ways 17 Pupils use their knowledge of decimal place value to convert between and compare metres and centimetres 18 Pupils explain that different lengths can be composed additively and multiplicatively 19 Pupils use their knowledge of decimal place value to solve problems in different contexts 20 Pupils use their knowledge to calculate with decimal numbers up to and bridging one tenth 21 Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction 22 Pupils round a decimal number with hundredths to the nearest tenth 23 Pupils round a decimal number with hundredths to the nearest whole number

	24 Pupils read and write numbers with up to 3 decimal places 25 Pupils compare and order numbers with up to 3 decimal places
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/vv0fdypj/cp-year-5-unit-1-decimal-fractions.pptx ***Specific RtP Link*** 5NPV-1 Page 212 5NPV-2 Page 216 5NPV-3 Page 219 5NPV-4 Page 225 5NF-2 Page 236 ***Spine Materials Teacher Guidance*** 1.23 https://www.ncetm.org.uk/media/fhcpc0am/ncetm_mm_sp1_y4_se23_teach.pdf#page=4 1.24 https://www.ncetm.org.uk/media/4cafhhxl/ncetm_mm_sp1_y4_se24_teach.pdf#page=4

Unit 2	**Money**
RtPs	**No RtP**
NCETM spine ref.	**1.25 Addition and subtraction: money**
Small step learning outcomes	1 Pupils explain and represent whole pounds as a quantity of money 2 Pupils explain and represent whole pounds and pence as a quantity of money 3 Pupils explain how to compare amounts of money 4 Pupils convert quantities of money between pounds and pence 5 Pupils use their knowledge of addition to efficiently add commonly used prices 6 Pupils use their knowledge of subtraction to calculate the change due when paying whole pounds or notes 7 Pupils use and explain the most efficient strategies when adding quantities of money 8 Pupils use and explain the most efficient strategies when subtracting quantities of money 9 Pupils find the change when purchasing several items 10 Pupils use the most efficient and reliable strategy to find the change when purchasing several items
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/px4pkjbr/cp-year-5-unit-2-money.pptx ***Specific RtP Link*** No RtP ***Spine Materials Teacher Guidance*** https://www.ncetm.org.uk/media/2vflmixq/ncetm_mm_sp1_y4_se25_teach.pdf#page=5

Unit 3	**Negative numbers**
RtPs	**No RtP**
NCETM spine ref.	**1.27 Negative numbers: counting, comparing and calculating**
Small step learning outcomes	1 Pupils represent a change story using addition and subtraction symbols 2 Pupils interpret numbers greater than and less than zero in different contexts 3 Pupils read and write negative numbers 4 Pupils explain how the value of a number relates to its position from zero 5 Pupils identify and place negative numbers on a number line 6 Pupils interpret sets of negative and positive numbers in a range of contexts 7 Pupils use their knowledge of positive and negative numbers to calculate intervals 8 Pupils explain how negative numbers are used on a coordinate grid 9 Pupils use their knowledge of positive and negative numbers to interpret graphs

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Unit 4	**Short multiplication and short division**
RtPs	**5MD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.** **5MD–4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.**
NCETM spine ref.	**2.14 Multiplication: partitioning leading to short multiplication 2.15 Division: partitioning leading to short division**

Small step learning outcomes	1 Pupils multiply a two-digit number by a single-digit number using partitioning and representations (no regroups) 2 Pupils multiply a two-digit number by a single-digit number using partitioning and representations (one regroup) 3 Pupils multiply a two-digit number by a single-digit number using partitioning and representations (two regroups) 4 Pupils multiply a two-digit number by a single-digit number using partitioning 5 Pupils multiply a two-digit number by a single-digit number using expanded multiplication (no regroups) 6 Pupils multiply a two-digit number by a single-digit number using short multiplication (no regroups) 7 Pupils multiply a two-digit number by a single-digit number using expanded multiplication (regrouping ones to tens) 8 Pupils multiply a two-digit number by a single-digit number using short multiplication (regrouping ones to tens) 9 Pupils multiply a two-digit number by a single-digit number using expanded multiplication (regrouping tens to hundreds) 10 Pupils multiply a two-digit number by a single-digit number using short multiplication (regrouping tens to hundreds) 11 Pupils multiply a two-digit number by a single-digit number using both expanded and short multiplication (two regroups) 12 Pupils use estimation to support accurate calculation 13 Pupils multiply a three-digit number by a single-digit number using partitioning and representations 14 Pupils multiply a three-digit number by a single-digit number using partitioning 15 Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (no regroups) 16 Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (one regroup) 17 Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (multiple regroups) 18 Pupils use estimation to support accurate calculation 19 Pupils divide a two-digit number by a single-digit number using partitioning and representations (no remainders, no exchanging) 20 Pupils divide a two-digit number by a single-digit number using partitioning and representations (with exchanging) 21 Pupils divide a two-digit number by a single-digit number using partitioning and representations (with exchanging and remainders) 22 Pupils divide a two-digit number by a single-digit number using short division (no exchanging, no remainders) 23 Pupils divide a two-digit number by a single-digit number using short division (with exchanging) 24 Pupils divide a two-digit number by a single-digit number using short division (with exchanging and remainders) 25 Pupils divide a three-digit number by a single-digit number using partitioning and representations (no exchanging, no remainders) 26 Pupils divide a three-digit number by a single-digit number using partitioning and representations (one exchange, no remainders) 27 Pupils divide a three-digit number by a single-digit number using partitioning and representations (with exchanging and remainders) 28 Pupils divide a three-digit number by a single-digit number using short division 29 Pupils divide a three-digit number by a single-digit number using short division (with exchanging and remainders) 30 Pupils solve short division problems accurately when the hundreds digit is smaller than the divisor 31 Pupils will use efficient strategies of division to solve problems
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/angc5q52/cp-year-5-unit-4-short-multiplication-and-shortdivision.pptx
	Specific RtP Link 5MD-3 Page 248 5MD-4 Page 252 ***Spine Materials Teacher Guidance*** 2.14 https://www.ncetm.org.uk/media/0jwnh1yk/ncetm_spine2_segment14_y4.pdf#page=4 2.15 https://www.ncetm.org.uk/media/cu1an3e2/ncetm_spine2_segment15_y4.pdf#page=4

Unit 5	Area and scaling
RtPs	**5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.**
NCETM spine ref.	**2.16 Multiplicative contexts: area and perimeter 1** **2.17 Structures: using measures and comparison to understand scaling**
Small step learning outcomes	1 Pupils explain what area is and can measure using counting as a strategy (1) 2 Pupils explain what area is and can measure using counting as a strategy (2) 3 Pupils explain how to make different shapes with the same area 4 Pupils explain how to compare the area of different shapes 5 Pupils measure the area of flat shapes area using square centimetres 6 Pupils measure the area of flat shapes area using square metres 7 Pupils calculate the area of a rectangle using multiplication 8 Pupils calculate the area of rectilinear shapes 9 Pupils use their knowledge of area to solve problems 10 Pupils compare and describe lengths by using their knowledge of multiplication 11 Pupils use their knowledge of multiplication to solve comparison and change problems 12 Pupils compare and describe lengths by using their knowledge of division 13 Pupils use their knowledge of division to solve comparison and change problems 14 Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (1) 15 Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (2) 16 Pupils describe the changes in measurements using their knowledge of multiplication and division 17 Pupils use their knowledge of multiplication and division to solve comparison and change problems
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Unit 6	Calculating with decimal fractions
RtPs	**5MD–1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.**
NCETM spine ref.	**2.19 Calculation: ×/÷ decimal fractions by whole numbers** **2.29 Decimal place-value knowledge, multiplication and division**
Small step learning outcomes	1 Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (1) 2 Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (2) 3 Pupils explain how to multiply and divide a number by 10, 100 and 1,000 (first 'number' two or more non-zero digits) 4 Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (length) 5 Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (mass and capacity) 6 Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (tenths)

	7 Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (hundredths) 8 Pupils use their knowledge of multiplying decimal fractions by whole numbers to solve measures problems 9 Pupils explain the relationship between multiplying by 0.1 dividing by 10 10 Pupils explain the relationship between multiplying by 0.01 dividing by 100 11 Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (1) 12 Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (2) 13 Pupils explain how to use the size of the multiplier to predict the size of the product compared to the multiplicand 14 Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (1) 15 Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (2)
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Unit 7	**Factors, multiples and primes**
RtPs	**5MD–2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.**
NCETM spine ref.	**2.20 Multiplication with three factors and volume** **2.21 Factors, multiples, prime numbers and composite numbers**
Small step learning outcomes	1 Pupils explain what 'volume' is using a range of contexts 2 Pupils describe the units used to measure volume 3 Pupils explain how to calculate the volume of a cuboid 4 Pupils explain what a cube number is 5 Pupils use their knowledge of calculating volume to solve problems in a range of contexts 6 Pupils explain how to calculate the volume of compound shapes 7 Pupils explain the use of the commutative and distributive laws when multiplying three or more numbers 8 Pupils explain the reasons for changing two-factor multiplication calculations to three-factor multiplications 9 Pupils explain what a factor is and how to use arrays and multiplication/division facts to find them 10 Pupils explain how to systematically find all factors of a number and how they know when they have found them all 11 Pupils use a complete list of factors to explain when a number is a square number 12 Pupils explain how to identify a prime number or a composite number 13 Pupils explain how to identify a common factor or a prime factor of a number 14 Pupils explain how to identify a multiple or common multiple of a number 15 Pupils use knowledge of properties of number to solve problems in a range of contexts 16 Pupils explain how to use the factor pairs of '100' to solve calculations efficiently
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Unit 8	Fractions
RtPs	**5NPV–5 Convert between units of measure, including using common decimals and fractions.**
	5F–1 Find non-unit fractions of quantities. **5F–2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.** **5F–3 Recall decimal fraction equivalents for 1/2, 1/4, 1/5 and 1/10, and for multiples of these proper fractions.**
NCETM spine ref.	**3.6 Multiplying whole numbers and fractions** **3.7 Finding equivalent fractions and simplifying fractions** **3.10 Linking fractions, decimals and percentages**
Small step learning outcomes	1 Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (unit fractions) 2 Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (non-unit fractions) 3 Pupils multiply a proper fraction by a whole number (within a whole) 4 Pupils multiply a proper fraction by a whole number (greater than a whole) 5 Pupils multiply an improper fraction by a whole number 6 Pupils multiply a mixed number by a whole number (product is within a whole) 7 Pupils multiply a mixed number by a whole number (product is greater than a whole) 8 Pupils find a unit fraction of a quantity 9 Pupils explain the relationship between finding a fraction of a quantity and multiplying a whole number by a unit fraction 10 Pupils explain the relationship between dividing by a whole number and multiplying a whole number by a unit fraction 11 Pupils use their knowledge of multiplying a whole number by a unit fraction to solve problems 12 Pupils find a non-unit fraction of a quantity (mental calculation) 13 Pupils find a non-unit fraction of a quantity (written calculation) 14 Pupils multiply a whole number by a proper fraction 15 Pupils explain when a calculation represents scaling down and when it represents repeated addition 16 Pupils find the whole when the size of a unit fraction is known 17 Pupils find a unit fraction when the size of a non-unit fraction is known 18 Pupils find the whole when the size of a non-unit fraction is known 19 Pupils find the unit fraction when the size of a non-unit fraction is known 20 Pupils use representations to describe and compare two fractions (1/4 and 3/12) 21 Pupils use representations to describe and compare two fractions (1/5 and 5/10) 22 Pupils use representations to describe and compare two fractions (pouring context) 23 Pupils correctly use the language of equivalent fractions 24 Pupils explain the vertical relationship between numerators and denominators within equivalent fractions (1/5, 1/3 and equivalent) 25 Pupils use their knowledge of the vertical relationship to solve equivalent fractions problems 26 Pupils explain the horizontal relationship between numerators and denominators across equivalent fractions (1/5, 1/3 and equivalent) 27 Pupils explain the relationship within families of equivalent fractions 28 Pupils use their knowledge of equivalent fractions to solve problems 29 Pupils explain and represent how to divide 1 into different amounts of equal parts 30 Pupils identify and describe patterns within the number system 31 Pupils use their knowledge of common equivalents to compare fractions with decimals 32 Pupils practise recalling common fraction-decimal equivalents
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Unit 9	Converting units
RtPs	**5NPV–5 Convert between units of measure, including using common decimals and fractions.**
NCETM spine ref.	**No NCETM spine** Refer to White Rose Maths Year 5 Scheme of Learning, Summer, Block 4, Converting Units
Small step learning outcomes	1 Pupils apply memorised unit conversions to convert between units of measure (larger to smaller units - whole number conversions) 2 Pupils apply memorised unit conversions to convert between units of measure (smaller to larger units - whole number conversions) 3 Pupils convert from and to fraction and decimal fraction quantities of larger units 4 Pupils derive common conversions over 1 5 Pupils carry out conversions that correspond to 100 parts 6 Pupils solve measures problems involving different units 7 Pupils understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints 8 Pupils convert between miles and kilometres 9 Pupils solve problems involving converting between units of time
Download Links	***Classroom Slides*** https://www.ncetm.org.uk/media/5yxd5m1h/cp-year-5-unit-9-converting-units.pptx **White Rose Maths, Summer, Block 4, Converting Units** **Year 5 Scheme of Learning** https://assets.whiterosemaths.com/resources-2022/year-5/summer-block-4-converting-units/Year-5-Summer-Block-4-Converting-Units.pdf ***Specific RtP Link*** 5NPV-5 Page 229 ***Spine Materials Teacher Guidance*** No Spine

Unit 10	Angles
RtPs	**5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.**
NCETM spine ref.	**No NCETM spine** Refer to White Rose Maths Year 4 Scheme of Learning, Summer, Block 5, Properties of Shape
Small step learning outcomes	1 Pupils compare the size of angles where there is a clear visual difference 2 Pupils use the terms acute, obtuse and reflex when describing the size of angles or amount of rotation with relation to right angles 3 Pupils use a unit called degrees (°) as a standard unit to measure angles 4 Pupils estimate the size of angles in degrees using angle sets 5 Pupils measure the size of angles accurately using a protractor
Download Links	**White Rose Maths, Year 4 Summer, Block 5, Properties of Shape** **Scheme of Learning** https://assets.whiterosemaths.com/resources-2022/year-4/summer-block-5-properties-of-shape/Year-4-Summer-Block-5-Properties-of-Shape.pdf ***Classroom Slides*** https://www.ncetm.org.uk/media/jcalyt34/cp-year-5-unit-10-angles.pptx ***Specific RtP Link*** 5G-1 Page 265 ***Spine Materials Teacher Guidance*** No spine for geometry