Netherthorpe Primary School (updated December 2021)

**Maths Long Term Plan with Progression of Skills**

**Year 4**

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|  | **Autumn** | | | |
| **Knowledge** | 3AS–2 Columnar addition and subtraction | 4NPV–1 Equivalence of 10 hundreds and 1 thousand  4NPV–2 Place value in four-digit numbers  4NPV–3 Four-digit numbers in the linear number system  4NPV–4 Reading scales with 2, 4, 5 or 10 intervals  4NF–3 Scaling number facts by 100 | 4G–2 Perimeter: regular and irregular polygons | 4NF–1 Recall of multiplication tables |
| **Unit 1**  **Review of Column Addition and Subtraction** | **Unit 2**  **Numbers to 10, 000** | **Unit 3**  **Perimeter** | **Unit 4**  **3, 6, 9 times table** |
| **Progression of Skills** | * Identify the addends and the sum in column addition * Use their knowledge of place value to correctly lay out column addition * Add a pair of 2-digit numbers using column addition * Add using column addition * Use their knowledge of column addition to solve problems * Add a pair of 2-digit numbers using column addition with regrouping in the ones column * Add a pair of 2-digit numbers using column addition with regrouping in the tens column * Add using column addition with regrouping * Use known facts and strategies to accurately and efficiently calculate and check column addition * Use their knowledge of column addition to solve problems * Identify the minuend and the subtrahend in column subtraction * Subtract using column subtraction * Subtract from a 2-digit number using column subtraction with exchanging from tens to ones * Subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens (1) * Subtract from a 3-digit number using a column subtraction with exchanging from hundreds to tens (2) * Evaluate the efficiency of strategies for subtraction | * Explain how many tens, hundreds and ones 1,000 is composed of * Use knowledge of 1,000 to explain common measure conversions * Use knowledge of 1,000 to solve problems * Use different strategies to add multiples of 100 * Use different strategies to subtract multiples of 100 * Use knowledge of calculation and common measure conversions to solve problems * Compose and decompose four-digit numbers in different ways * Use strategies to make solving calculations more efficient * Compare and order four-digit numbers * Calculate efficiently by using knowledge of place value, addition and subtraction * Explain what rounding is * Round a four-digit number to the nearest thousand * Round a four-digit number to the nearest hundred and ten * Round a four-digit number to the nearest thousand, hundred and ten * Add up to 3 four-digit numbers using a column addition * Subtract four-digit numbers using a column subtraction * Use strategies to make solving calculations more efficient * Explain how many ‘100s’ and ‘200s’, 1,000 is composed of * Explain how many ‘500s’ and ‘250s’, 1,000 is composed of | * Understand that regular polygon has sides that are all the same length and interior angles that are all equal in size. * Know that the perimeter is the distance around the edge of a two-dimensional shape * Understand that different shapes can have the same perimeter * Measure the perimeter in units of length found by counting units. * Calculate the perimeter by adding together the side lengths of a 2D shape * Calculate the perimeter of a rectangle using addition and multiplication * Find unknown side lengths by calculating the perimeter and using known side lengths * Calculate the perimeter of a regular polygon using multiplication * Calculate the side length of a regular polygon using division where the perimeter is known | * Represent counting in threes as the three times table * Explain the relationship between adjacent multiples of three * Use knowledge of the three times table to solve problems * Represent counting in sixes as the six times table * Explain the relationship between adjacent multiples of six * Use knowledge of the six times table to solve problems * Use known facts from the five times table to solve problems involving the six times table * Explain the relationship between multiples of three and multiples of six * Use knowledge of the relationships between the three and six times tables to solve problems * Represent counting in nines as the nine times table * Explain the relationship between adjacent multiples of nine (1) * Explain the relationship between adjacent multiples of nine (2) * Use known facts from the ten times table to solve problems involving the nine times table * Explain the relationship between multiples of three and multiples of nine * Explain the relationship between pairs of three and nine times table facts that have the same product (1) * Explain the relationship between pairs of three and nine times table facts that have the same product (2) * Use the divisibility rules for divisors of three * Use the divisibility rules for divisors of six (1) * Use the divisibility rules for divisors of six (2) |

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|  | **Spring** | | | |
| **Knowledge** |  | 3NF–2 Recall of multiplication tables | 4MD–1 Multiplying and dividing by 10 and 100  4MD–2 Manipulating the multiplicative relationship  4MD–3 The distributive property of multiplication  4MD–3 The distributive property of multiplication | 4G–1 Draw polygons specified by coordinates or by translation |
| **Unit 4**  **3, 6, 9 times table continued** | **Unit 5**  **7 times table and patterns** | **Unit 6**  **Understanding and manipulating multiplicative relationships** | **Unit 7**  **Coordinates** |
| **Progression Of Skills** |  | * Represent counting in sevens as the 7 times table * Explain the relationship between adjacent multiples of seven * Use their knowledge of the 7 times table to solve problems * Identify patterns of odd and even numbers in the times tables * Represent a square number * Use knowledge of divisibility rules to solve problems | * Explain what each factor represents in a multiplication equation * Explain how each part of a multiplication and division equation relates to a story * Explain where zero can be part of a multiplication or division expression and the impact it has * Partition one of the factors in a multiplication equation in different ways using representations (I) * Partition one of the factors in a multiplication equation in different ways using representations (II) * Explain which is the most efficient factor to partition to solve a multiplication problem * Use knowledge of distributive law to solve two part addition and subtraction problems, efficiently * Use knowledge of distributive law to calculate products beyond known times tables facts * Explain the relationship between multiplying a number by 10 and multiples of 10 * Explain why a zero can be placed after the final digit of a single-digit number when we multiply it by 10 * Explain why a zero can be placed after the final digit of a two-digit number when we multiply it by 10 * Explain why the final digit zero can be removed from a two-digit multiple of 10, when we divide by 10 * Explain why the final digit zero can be removed from a three-digit multiple of 10, when we divide by 10 * Explain the relationship between multiplying a number by 100 and multiples of 100 * Explain why two zeros can be placed after the final digit of a single-digit number when we multiply it by 100 * Explain why two zeros can be placed after the final digit of a two-digit number when we multiply it by 100 * Explain why the last two zeros can be removed from a three-digit multiple of 100 when we divide it by 100 * Explain why the last two zeros can be removed from a four-digit multiple of 100 when we divide it by 100 * Use knowledge of the composition of 100 to multiply by 100 in different ways * Use knowledge of the composition of 100 to divide by 100 in different ways * Explain how making a factor 10 times the size affects the product * Explain how making the dividend 10 times the size affects the quotient * Explain how making a factor 100 times the size affects the product * Explain how making the dividend 100 times the size affects the quotient * Scale known multiplication facts by 100 * Scale division derived from multiplication facts by 100 | * Give directions from one position to another on a grid * Move objects including polygons on a grid according to directions, and mark the new position * Describe translations of polygons drawn on a square grid * Draw polygons specified by translations * Mark points specified as a translation from the origin * Mark the position of points specified by coordinates in the first quadrant of a coordinate grid, and write coordinates for already-marked points * Draw polygons specified by coordinates in the first quadrant * Translate polygons in the first quadrant |

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| **Summer** | | | | | |
| **Knowledge** | 3F–1 Use and understand fraction notation | 4F–1 Mixed numbers in the linear number system  4F–2 Convert between mixed numbers and improper fractions  4F–3 Add and subtract improper and mixed fractions (same denominator) | 4G–3 Identify line symmetry in 2D shapes | NC time objectives | 4NF–2 Division problems with remainders |
| **Unit 8**  **Review of Fractions** | **Unit 9**  **Fractions greater than 1** | **Unit 10**  **Symmetry in 2d shapes** | **Unit 11**  **Time** | **Unit 12**  **Division with remainders** |
| **Progression Of Skills** | * Identify a whole and the parts that make it up * Explain why a part can only be defined when in relation to a whole * Identify the number of equal or unequal parts in a whole * Identify equal parts when they do not look the same * Explain the size of the part in relation to the whole * Construct a whole when given a part and the number of parts | * Explain how to express quantities made up of both whole numbers and a fractional part * Explain how a quantity made up of whole numbers and a fractional part is composed * Compose and decompose quantities made of whole numbers and fractional parts * Accurately label a range of number lines and explain the meaning of each part * Identify numbers on marked but unlabelled number lines * Estimate the position of numbers on a number line using fraction sense * Compare and order mixed numbers using fraction sense * Compare and order mixed numbers when the whole number is the same * Compare and order mixed numbers when the whole number and the numerator of the fractional part is the same * Make efficient choices about the order they solve an addition problem in * Make efficient choices about the order they solve a subtraction problem in * Express a quantity as a mixed number and an improper fraction (quarters) * Convert a quantity from an improper fraction to a mixed number (quarters) * Express and convert a quantity from an improper fraction to a mixed number (fifths) * Explain how an improper fraction is converted into a mixed number (any unit) * Explain how a mixed number is converted into an improper fraction * Add mixed numbers * Subtract a proper fraction from a mixed number (converting to an improper fraction first) * Subtract a mixed number from a mixed number and explain which strategy is most efficient * Use knowledge of subtraction to choose correct and efficient approaches when subtracting mixed numbers | * Complete a symmetrical pattern * Compose symmetrical shapes from two congruent shapes * Investigate lines of symmetry in 2D shapes by folding paper shape cut-outs * Find lines of symmetry in 2D shapes using a mirror * Reflect polygons in a line of symmetry * Reflect polygons that are dissected by a line of symmetry | * To be updated soon. | * Interpret a division story when there is a remainder and represent it with an equation (i) * Interpret a division story when there is a remainder and represent it with an equation (ii) * Interpret a division story when there is a remainder and represent it with an equation (iii) * Explain how the remainder relates to the divisor in a division equation * Explain when there will and will not be a remainder in a division equation * Use knowledge of division equations and remainders to solve problems * Interpret the answer to a division calculation to solve a problem (i) * Interpret the answer to a division calculation to solve a problem (i |