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 numbers4NPV–3 Four-digit numbers in the linear number system4NPV–4 Reading scales with 2, 4, 5 or 10 intervals4NF–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 1004MD–2 Manipulating the multiplicative relationship4MD–3 The distributive property of multiplication4MD–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 system4F–2 Convert between mixed numbers and improper fractions4F–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
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