Netherthorpe Primary School (updated December 2021)

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

**Year 3**

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| **Autumn** |
| **Knowledge** | 2AS–1 Add and subtract across 103NF–1 Fluently add and subtract withinand across 10 | 3NPV–1 Equivalence of 10 hundreds and 1 thousand3NPV–2 Place value in three-digit numbers3NPV–3 Three-digit numbers in the linear number system3NPV–4 Reading scales with 2, 4, 5 or 10 intervals3NF–3 Scaling number facts by 103AS–1 Calculate complements to 100 |
| **Unit 1****Adding and Subtracting across 10** | **Unit 2****Numbers to 1000** |
| **Progression of Skills** | * Add 3 addends
* Use a ‘First.. Then… Now” story to add 3 addends
* Explain that addends can be added in any order
* Add 3 addends efficiently
* Add 3 addends efficiently by finding two addends that total 10
* Add two numbers that bridge through 10
* Subtract two numbers that bridge through 10
 | * Explain that 100 is composed of ten tens and one hundred ones
* Explain that 100 is composed of 50s 25s and 20s
* Use known facts to find multiples of ten that compose 100
* Use known facts to find a two-digit number and a one- or two-digit number that compose 100
* Use known facts to find correct complements to 100
* Use known facts to find complements to 100 accurately and efficiently
* Represent a three-digit number which is a multiple of ten using their numerals and names
* Use place value knowledge to write addition and subtraction equations
* Bridge 100 by adding or subtracting in multiples of ten
* Use knowledge of addition and subtraction of multiples of ten bridging the hundreds boundary to solve problems
* Count across and on from 100
* Represent a three-digit number up to 199 in different ways
* Bridge 100 by adding or subtracting a single-digit number
* Find ten more or ten less than a given number
* Cross the hundreds boundary when adding and subtracting any two-digit multiple of ten
* Become familiar with a metre ruler (marked and unmarked intervals, 1 x 1m, 10 x 10cm, 100 x 1cm)
* Measure length and height from zero using whole metres and cm
* Measure length and height from zero using cm
* Convert between m and cm (include whole m to cm, cm to whole m and cm and vice versa)
* Become familiar with a ruler in relation to cm and mm (marked and unmarked intervals, knowing 1cm = 10mm)
* Measure length from zero using mm / whole cm and mm
* Convert between cm and mm (include whole cm to mm, mm to whole cm and mm and vice versa)
* Estimate a length/height, measure a length/height and record in a table
* Use knowledge of place value to represent a three-digit number in different ways
* Represent a three-digit number up to 1000 in different ways
* Use knowledge of the additive relationship to solve problems
* Count in hundreds and tens on a number line
* Identify the previous, next and nearest multiple of 100 on a number line for a three-digit multiples of ten
* Position three-digit numbers on number lines
* Estimate the position of three-digit numbers on unmarked number lines
* Compare one-, two- and three-digit numbers
* Compare two three-digit numbers
* Order sets of three-digit numbers
* Use known facts to add or subtract multiples of 100 within 1000
* Write a three-digit multiple of 10 as a multiplication equation
* Partition three-digit numbers in different ways
* Use known facts to solve problems involving partitioning numbers
* Use known facts to add or subtract to/from multiples of 100 in tens
* Use known facts to add or subtract to/from multiples of 100 in ones
* Add/subtract multiples of ten bridging 100
* Add/subtract to/from a three-digit number in ones bridging 100
* Find 10 more or less across any hundreds boundary
* Use knowledge of adding or subtracting to/from three-digit numbers to solve problems
* Count forwards and backwards in multiples of 2, 20, 5, 50 and 25
* Use knowledge of counting in multiples of 2, 20, 5, 50 and 25 to solve problems
* Become familiar with different weighing scales up to 1kg (intervals of 100g, 200g, 250g and 500g)
* Become familiar with the tools to measure volume and capacity up to 1 litre (intervals of 100ml, 200ml, 250ml and 500ml)
* Measure mass from zero up to 1kg using grams
* Measure mass from zero above 1kg using whole kg and grams
* Measure volume from zero up to 1 litre using ml
* Measure volume from zero above 1 litre using whole litres and ml
* Estimate mass in grams and volume in ml
* Estimate a mass/volume, measure a mass/volume and record in a table
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| **Spring** |
| **Knowledge** | **Unit 3****Right angles** | **Unit 4****Manipulating the additive relationship and securing mental calculation.** | **Unit 5****Column addition** | **Unit 6****2, 4 8 times tables** | **Unit 7****Column Subtraction** |
| 3G–1 Recognise right angles  | 3AS–3 Manipulate the additive relationship | 3AS–2 Columnar addition and subtraction. | 3NF–2 Recall of multiplication tables3NF–3 Scaling number facts by 103MD–1 Multiplication and division structures | 3AS–2 Columnar addition and subtraction |
| **Progression of Skills** | * Rotate two lines around a fixed point to make different sized angles
* Draw triangles and quadrilaterals and identify vertices
* Learn that a right angle is a ‘square corner’ and identify them in the environment
* Learn that a rectangle is a 4-sided polygon with four right angles
* Learn that a square is a rectangle in which the four sides are equal length
* Cut rectangles and squares on the diagonal and investigate the shapes they make
* Join four right angles at a point using different right-angled polygons
* Investigate and draw other polygons with right angles
 | * Add 3 addends
* Add two 3-digit numbers using adjusting
* Add a pair of 2- or 3-digit numbers using redistribution
* Subtract a pair of 2- or 3-digit numbers, bridging a multiple of 10, using partitioning
* Subtract a pair of 2-digit numbers, crossing a ten or hundreds boundary, by finding the difference between them
* Subtract a pair of three-digit multiples of 10 within 1000 by finding the difference between them
* Evaluate the efficiency of strategies for subtracting from a 3-digit number
* Explain why the order of addition and subtraction steps in a multi-step problem can be chosen
* Accurately and efficiently solve multi-step addition and subtraction problems
* Understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (2-digit numbers)
* Understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (3-digit numbers)
* Use knowledge of the additive relationship to rearrange equations
* Use knowledge of the additive relationship to identify what is known and what is unknown in an equation
* Use knowledge of the additive relationship to rearrange equations before solving
* Rearrange missing number equations and use knowledge of the additive relationship to solve the problem
 | * 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
 | * Represent counting in fours as the 4 times table
* Use knowledge of the 4 times table to solve problems
* Explain the relationship between adjacent multiples of four
* Explain the relationship between multiples of 2 and multiples of 4
* Use knowledge of the relationships between the 2 and 4 times tables to solve problems
* Represent counting in eights as the 8 times table
* Explain the relationship between adjacent multiples of eight
* Explain the relationship between multiples of 4 and multiples of 8
* Use knowledge of the relationships between the 4 and 8 times tables to solve problems
* Explain the relationship between multiples of 2, 4 and multiples of 8
* Use knowledge of the relationships between the 2, 4 and 8 times tables to solve problems
* Use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems
* Use knowledge of the divisibility rules for divisors of 8 to solve problems
* Scale known multiplication facts by 10
* Scale division derived from multiplication facts by 10
 | * Identify the minuend and the subtrahend in column subtraction
* Explain the column subtraction algorithm
* 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 column subtraction with exchanging from hundreds to tens (2)
* Evaluate the efficiency of strategies for subtraction.
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| **Summer**  |
| **Knowledge** | 3F–1 Use and understand fraction notation3F–2 Find unit fractions of quantities | 3F–1 Use and understand fraction notation3F–3 Fractions within 1 in the linear number system3F–4 Add and subtract fractions within 1 | 3G–2 Draw polygons and identify parallel and perpendicular sides | NC Objectives |
| **Unit 8****Unit Fractions** | **Unit 9****Non Unit Fractions** | **Unit 10****Parallel and Perpendicular Sides in Polygons** | **Unit 11****Time** |
| **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 (i)
* Explain the size of the part in relation to the whole
* Construct a whole when given a part and the number of parts
* Identify how many equal parts a whole has been divided into
* Use fraction notation to describe an equal part of the whole
* Represent a unit fractions in different ways
* Identify parts and wholes in different contexts (i)
* Identify parts and wholes in different contexts (ii)
* Identify equal parts when they do not look the same (ii)
* Compare and order unit fractions by looking at the denominator
* Identify when unit fractions cannot be compared
* 15 Pupils construct a whole when given one part and the fraction that it represents
* 16 Pupils use knowledge of the relationship between parts and wholes in unit fractions to solve problems
* 17 Pupils identify the whole, the number of equal parts and the size of each part as a unit fraction
* 18 Pupils quantify the number of items in each part and connect to the unit fraction operator
* 19 Pupils calculate the value of a part by using knowledge of division and division facts
* 20 Pupils calculate the value of a part by connecting knowledge of division and division facts with finding a fraction of a quantity
* 21 Pupils find fractions of quantities using knowledge of division facts with increasing fluency
 | * Explain that non-unit fractions are composed of more than one unit fraction
* Identify non-unit fractions
* Identify the number of equal or unequal parts in a whole
* Use knowledge of non-unit fractions to solve problems
* Use knowledge of unit fractions to find one whole
* Place fractions between 0 and 1 on a numberline
* Use repeated addition of a unit fraction to form a non-unit fraction
* Use repeated addition of a unit fraction to form 1
* Compare using knowledge of non-unit fractions equivalent to one
* Compare non-unit fractions with the same denominator
* Compare unit fractions
* Compare fractions with the same numerator
* Add up fractions with the same denominator
* Add on fractions with the same denominator
* Add fractions with the same denominator using a generalised rule
* Subtract fractions with the same denominator
* Identify the whole, the number of equal parts and the size of each part as a unit fraction
* Explain that addition and subtraction of fractions are inverse operations
* Subtract fractions from a whole by converting the whole to a fraction
* Represent a whole as a fraction in different ways and use this to solve problems involving subtraction
 | * Make compound shapes by joining two polygons in different ways (same parts, different whole)
* Investigate different ways of composing and decomposing a polygon (same whole, different parts)
* Draw polygons on isometric paper
* Use geostrips to investigate quadrilaterals with and without parallel and perpendicular sides
* Make and draw compound shapes with and without parallel and perpendicular sides
* Learn to extend lines and sides to identify parallel and perpendicular lines
* Make and draw triangles on circular geoboards
* Make and draw quadrilaterals on circular geoboards
* Draw shapes with given properties on a range of geometric grids
 | To be updated soon |