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 10  3NF–1 Fluently add and subtract withinand across 10 | 3NPV–1 Equivalence of 10 hundreds and 1 thousand  3NPV–2 Place value in three-digit numbers  3NPV–3 Three-digit numbers in the linear number system  3NPV–4 Reading scales with 2, 4, 5 or 10 intervals  3NF–3 Scaling number facts by 10  3AS–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 tables  3NF–3 Scaling number facts by 10  3MD–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 notation  3F–2 Find unit fractions of quantities | 3F–1 Use and understand fraction notation  3F–3 Fractions within 1 in the linear number system  3F–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 |