Wickham Church of England Primary School

Maths Long Term Map – Year 5

	lessons	Domain	Unit Objectives
Autumn 1	5	Number and place value	• **Solve number problems and practical problems involving:** • **Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones)** Up to 10,000 • **Identify, represent and estimate numbers using different representations** including number-lines • **Find 10 ,100, 1000 more or less than a given number** • **Round any number to the nearest 10,100,1000** (represent on a number line)
	5	NPV (5)	• **Solve number and practical problems involving:** • **Read, write, order and compare numbers to at least 100,000 and determine the value of each digit.** • **Identify, represent and estimate numbers using different representations including number-lines** • **Round any number to the nearest 10,100,1000, 10,000 and 100,000** (represent on a number line)
	10	Addition and Subtraction	• **Add and subtract whole numbers with more than 4 digits.** Represent solutions appropriately using informal and **formal written methods.** • **Add and subtract mentally with increasingly large numbers e.g. 12,462 – 2300 = 10,612** • **Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** • **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.** • **Measure and calculate the perimeter of composite rectilinear shapes in cm and m** • **Use all four operations to solve problems involving measure (length), using decimal notation.**
	15	Multiplication and division Measurement (area and arrays)	• Represent multiplication and division facts as grid arrays, link to rectangular areas, identifying factors as whole number side lengths of rectangles. • **Calculate and compare the area of rectangles, including squares, and including using standard units (cm² and m²) and estimate the area of irregular shapes.** • **Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. Know and use the vocabulary of prime numbers.** • Use place value knowledge to **multiply and divide whole numbers and those involving decimals by 10 and 100.** • Use knowledge of multiples to estimate **division calculations** e.g. 1075 ÷ 25 ≈ 40 (since 4 x 25 = 100). • Understand division as grouping, moving on from sharing, to make efficient use of multiplication facts when dividing. • Represent division calculations (not the solution) as number-lines and bar-models to support conceptual understanding before solving.
	5	Fractions	• **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.** • **Add and subtract fractions with the same denominator** • **Compare and order fractions whose denominators are all multiples of the same number**

Autumn term 2	20	Fractions (5)	Recognise mixed numbers and improper fractions and convert from one form to another. Write mathematical statements >1 as a mixed number e.g. 2/5 + 4/5 = 6/5 = 1 1/5 Add and subtract fractions with the same denominator beyond 1 and multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
		Measurement (Time and timetables)	• Complete, read and interpret information in tables, including time tables • Solve problems involving converting between units of time.
		Geometry (shape and angle) (10)	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Identify angles at a point and one whole turn (360^0), at a point on a straight line and half a turn (180^0) and other multiples of 90 . Know that ^{0} 360 there are four right angles in a complete turn and two right angles in half a turn. Identify, describe and represent the position of a shape following a reflection or a translation, using the appropriate language and know that the shape has not changed and internal angles are preserved.
	10	Number and place value/ measurement	• Round decimals with two decimal places to the nearest whole number and to one decimal place • Convert between different units of metric measure (g/kg ; ml/l) Link to place value understanding of scaling up and down by 1000 (x / ÷) • Estimate capacity using standard units to measure liquid (l/ml) and read scales graded in different sized steps • (e.g. 0, 10,20,30…. 0 , 25 , 50 , 75…. 0, 20, 40,60…) • Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.
	5	All four operations	Use all four operations to solve problems involving measure (mass and capacity) using decimal notation including scaling. Use any combination of operations to solve problems , including understanding the meaning of the equals sign (=) Know that distributivism can be expressed as a (b + c) = ab + ac. (e.g. 13 x 8 = 8(10 +3)) Understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 92 x 10). Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x?). Multiply numbers up to 4-digits by a one-or two-digit number using a written method that supports conceptual understanding.

Amended from the Hampshire Maths Team Medium and Long Term Maps

Spring term 1	15	Fractions (percentages)

<table>
<tr><td rowspan="8">Fractions (percentages)</td><td>• Know that 1/10 = 0.1 and 1/100 = 0.01</td></tr>
<tr><td>• **Recognise the percent symbol (%) and understand that percent relates to the number of parts per 100, write percentages as a fraction with the denominator 100 and as a decimal fraction**</td></tr>
<tr><td>• **Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5**</td></tr>
<tr><td>• **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.**</td></tr>
<tr><td>• **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)**</td></tr>
<tr><td>• **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents**</td></tr>
<tr><td>• **Round decimals with two decimal places to the nearest whole number and to one decimal place.**</td></tr>
</table>

Spring term 1

15	Fractions (percentages)	• Know that 1/10 = 0.1 and 1/100 = 0.01 • **Recognise the percent symbol (%) and understand that percent relates to the number of parts per 100, write percentages as a fraction with the denominator 100 and as a decimal fraction** • **Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5** • **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.** • **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)** • **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** • **Round decimals with two decimal places to the nearest whole number and to one decimal place.**

	Geometry (angle) (5)	• **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angle**
		  • **Draw given angles, and measure them in degrees**
		  • **Use the properties of rectangles to deduce related facts and find missing lengths and angles**

15	Subtraction and addition Whole numbers (10) Fractions (5)	• **Add and subtract whole numbers with more than 4 digits.** Represent solutions appropriately using informal and **formal written methods.** • **Add and subtract mentally with increasingly large numbers e.g. 12,462 – 2300 = 10,612** • **Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** • **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.** • **Add and subtract fractions with the same denominator beyond one and multiples of the same number**. Use diagrams such as bar models to show part-part-whole relationships ⬚ **Solve problems involving number up to three decimal places.** • Use addition and subtraction **to solve problems involving measure** using decimal and fraction notation. E.g. ¾ m + 50 cm = 1.25 m (or 1 ¼ m)
5	Statistics (line graphs incl. temperature and - numbers)	• **Interpret negative numbers in context, count forwards and backwards with positive and negative numbers through zero** (link number-line to a thermometer) • **Solve comparison, sum and difference problems using information presented in a line graph** ⬚ **Complete, read and interpret information in tables.**

Spring term 2	**10**	Measurement (volume and capacity/reading scales /	• **Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.** • **Estimate volume (e.g. using 1cm³ blocks to build cubes and cuboids) and capacity (e.g. using water)** • **Identify 3-D shapes, including cubes and other cuboids, from 2-D representations** • Construct 3-D models of cubes and cuboids from nets and estimate their volume, using 1cm³ blocks to build cubes and cuboids to support understanding of volume. • Multiply three numbers together, understanding that this can be done in any order and link this to the volume of cubes and cuboids. • Solve problems involving capacity, including reading a range of scales.

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5	Fractions (5)	• **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.** • **Solve problems which require knowing percentage and decimal equivalents, including those with a denominator of a multiple of 10 of 25.** • **Read, write, order and compare numbers with up to three decimal places** • **Solve problems involving number up to three decimal places**
10	Subtraction and addition / Number and place Value (focus on	• **Add and subtract mentally with increasingly large numbers.** Develop independence and fluency with identifying calculations that can be done mentally. Strategies include 'nearly numbers', near-doubles', placevalue, key facts and derived facts, part-whole reasoning and so on. • **Add and subtract whole numbers with more than 4 digits.** Represent solutions appropriately using informal and **formal written methods.** • **Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** • **Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.** • **Add and subtract fractions with the same denominator beyond one and multiples of the same number**. Use diagrams such as bar models to show part-part-whole relationships ▢ **Solve problems involving number up to three decimal places.** • **Solve problems involving measure**.
10	Multiplication and division (tables and	• **Multiply numbers up to 4-digits by a one- or two- digit number, drawing upon known facts** • **Divide numbers up to 4-digits by a one- digit number, introducing short division and interpreting remainders appropriately for the context** • **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.** • **Solve problems involving multiplication and division, including using their knowledge of factors and multiples** • **Solve problems involving multiplication and division, including scaling by simple fractions.**

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	10	Multiplication and division (including square, cube and prime numbers) (	• **Identify multiples and factors, including all factor pairs of a number and common factors of two numbers.** • **Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.** Construct arrays to show that prime numbers (p) have exactly one array (1 x p) • **Recognise and use square numbers and cube numbers and the notation for (^{2}) and (^{3}).** Construct arrays for square numbers to show that square numbers have an odd number of factors since one is repeated (e.g. 16 can be constructed as 1 x 16; 2 x 8 and 4 x 4 ~ factors are 1,2,4,8,16) • **Solve problems involving all four operations including using their knowledge of factors and multiples, squares and cubes.**
Summer term 1	5	Geometry (position and direction)	• Plot points on a coordinate grid in the first quadrant • **Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed.** • **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles**
	5	All four operations	• **Solve multi-step problems involving all four operations in context, deciding which operations and methods** (including mental and efficient jottings and diagrams) **to use and why.** • Use a range of appropriate numbers to solve problems in context. This should include whole numbers and part numbers (fractions, decimals, percentages) • Solve estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy (interpret remainders and rounding).
	10	Addition and subtraction (secure the formal methods) /	• **Add and subtract whole numbers with more than 4 digits, including using formal written methods** • **Add and subtract mentally with increasingly large numbers (e.g. 12,462 – 2,300 = 10,612)** • **Use rounding to check answers and determine, in the context of a problem, levels of accuracy** • **Solve addition and subtraction multi-step problems in contexts deciding which operations to use and why** • **Solve comparison, sum and difference problems using information presented in a line graph ⬜ Complete, read and interpret information in tables.**

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Summer term 2	15	Fractions/ geometry	• **Compare and order, add and subtract fractions whose denominators are all multiples of the same number.** • **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** • **Recognise mixed numbers and improper fractions and convert from one form to the other. Write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5)** • **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams** • **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles** • **Draw given angles and measure them in degrees** • **Identify angles at a point and one whole turn (360^0)** • **Identify angles at a point on a straight line and ½ a turn (180)** • **Identify other multiples of 90^0** and link to fractions of a whole turn • **Use the properties of rectangles to deduce related facts and find missing lengths and angles**
	5	Percentages	• **Recognise the per cent symbol (%) and understand that it relates to the 'number of parts per 100'** ⬚ **Write percentages as a fraction with 100 as the denominator and as a decimal fraction.** • **Solve problems which require knowing percentage and decimal equivalents.** • Solve problems involving simple percentages (multiples of 10%, include 1% and 50% ~ link to division by 10, 100 and 2)
	10	Multiplication and division (secure formal methods)	• **Identify multiples and factors** • **Establish whether a number is prime up to 100 and recall prime numbers up to 19** • **Multiply numbers up to 4-digits by a one-or two-digit number using a formal written method** • **Divide numbers up to 4-digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context** • **Multiply and divide whole numbers and those involving decimals by 10, 100, 1000** • **Recognise and use square number and cube numbers, with the correct notation (^{2}) and (^{3})** ⬚ **Solve problems involving all four operations, including any combination of these.** • **Solve problems involving multiplication and division, including scaling by simple fractions (**half as big**) and problems involving simple rates**

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