MATHS CURRICULUM MAP YEAR 5

Based on White Rose Maths

Year 5	Main Topic area Taught:	Small steps:	National Curriculum Objective:	By the end of this topic, the children will know this vocabulary
Autumn	**<u>Number: Place Value</u>** **3 weeks**	• Numbers to 10,000 • Roman numerals to 1000 • Round to nearest 10,100 and 1000 • Numbers to 100,000 • Compare and order numbers to 100,000 • Round numbers within 100,000 • Numbers to a million • Counting in 10s, 100s, 1000s, 10,000s and 100,000s • Compare and order numbers to one million • Round numbers to one million • Negative numbers	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Solve number problems and practical problems that involve all of the above • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	units, ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions, power of 10, tenths, hundredths, decimal, round, exchange, digit, equal to, estimate, guess, roughly, about the same as, ascending, descending, ≈ (is approximately equal to), consecutive, predict, formula
	<u>Number: Addition and Subtraction</u> **2 weeks**	• Add whole numbers with more than 4 digits (column method) • Subtract whole numbers with	• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar	add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…?, subtract, subtraction, take (away), minus,

		more than 4 digits (column method) • Round to estimate and approximate • Inverse operations (addition and subtraction) • Multi-step addition and subtraction problems	addition and subtraction) • Add and subtract numbers mentally with increasingly large numbers • 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.	decrease, leave, how many are left/left over?, difference between, half, halve, how many more/fewer is… than…?, how much more/less is…?, equals, sign, is the same as, tens boundary, hundreds boundary, units boundary, tenths boundary, inverse
	Statistics **2 weeks**	• Read and interpret line graphs • Draw line graphs • Use line graphs to solve problems • Read and interpret tables • Two-way tables • Timetables	• Solve comparison, sum and difference problems using information presented in a line graph • Complete, read and interpret information in tables, including timetables.	am, pm, noon, midnight, before, after, next, last, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? how long will it be to…?, how long will it take to…?, timetable, arrive, depart, hour, minute, second, o'clock, half past, quarter to, quarter past, clock, watch, hands, digital/analogue clock/watch, timer, 24-hour clock, 12-hour clock, how often?
	Number: Multiplication and Division **2 weeks**	• Multiples • Factors • Common factors • Prime numbers • Square numbers • Cube numbers • Multiply by 10,100 and 1000 • Divide by 10, 100 and 1000 • Multiples of 10, 100 and 1000	• 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, prime	lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share between, share into groups of , group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder, factor,

			factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19 • Multiply and divide numbers mentally drawing upon known facts • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	divisible by, inverse, prime, square number, cube number, common factor
	<u>Measurement: Perimeter and Area</u> **2 weeks**	• Measure perimeter • Calculate perimeter • Area of rectangles • Area of compound shapes • Area of irregular shapes	• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	Perimeter, rectilinear, rectangles, standard units, irregular shapes,area, covers, surface, square centimetre (*cm2*), square metre (*m2*), square millimetre (*mm2*), estimate, measure, calculate, compound shapes

Spring	**Number: Multiplication and Division** **3 weeks**	• Multiply 4-digits by 1-digit • Multiply 2-digits (area model) • Multiply 2-digits by 2-digits • Multiply 3-digits by 2-digits • Multiply 4-digits by 2-digits • Divide 4-digits by 1-digit • Divide with remainders	• Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • Multiply and divide numbers mentally drawing upon known facts • 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 • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share between, share into groups of , group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder, factor, divisible by, inverse, prime, square number
	Number: Fractions **6 weeks**	• Equivalent fractions • Improper fractions to mixed numbers • Mixed numbers to improper fractions • Number sequences • Compare and order fractions less than 1 • Compare and order fractions greater than 1 • Add and subtract fractions • Add fractions within 1 • Add 3 or more fractions • Add fractions	• Compare and order 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	fraction, proper/improper fraction, mixed number, unit fraction, non-unit fraction, numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, third, sixth, ninth, twelfth, fifth, tenth, twentieth, hundredth, proportion, in every, for every, to every, decimal, decimal fraction, decimal point, decimal place

		• Add missed numbers • Subtract fractions • Subtract mixed numbers • Subtract- breaking the whole	other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] • Add and subtract fractions with the same denominator and denominators that are multiples of the same number	
	<u>Number: Decimals and Percentages</u> **2 weeks**	• Decimals up to 2 d.p • Decimals as fractions (1) • Decimals as fractions (2) • Understand thousandths • Rounding decimals • Order and compare decimals • Understand percentages • Percentages as fractions and decimals • Equivalent F.D.P	• 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 • Read, write, order and compare numbers with up to three decimal places • Solve problems involving number up to three decimal places • Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • Solve problems which require	units, ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions, power of 10, tenths, hundredths, thousandths, decimal, scaling up, scaling down, round, exchange, digit, equal to, estimate, guess, roughly, about the same as, ascending, descending, ≈ (is approximately equal to), consecutive, predict, formula, percent, percentage

			knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	
Summer	**Number: Decimals** **4 weeks**	• Adding decimals within 1 • Subtracting decimals within 1 • Complements to 1 • Adding decimals – crossing the whole • Adding decimals with the same number of decimal places • Subtracting decimals with the same number of decimal places • Adding decimals with a different number of decimal places • Subtracting decimals with a different number of decimal places • Adding and subtracting wholes and decimals • Decimal sequences • Multiplying decimals by 10,100 and 1000 • Dividing decimals by 10,100 and 1000.	• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • Recognise and write decimal equivalents of any number of tenths or hundredths. • Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	units, ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions, power of 10, tenths, hundredths, thousandths, decimal, scaling up, scaling down, round, exchange, digit, equal to, estimate, guess, roughly, about the same as, ascending, descending, ≈ (is approximately equal to), consecutive, predict, formula, centimeter, metre, gram, kilogram, litre, milliliter, equivalent, decimal places, decimal point, wholes
	Geometry: Properties of shape **3 weeks**	• Measuring angles in degrees • Measuring with a protractor (1) • Measuring with a protractor (2) • Drawing lines and angles accurately • Calculating angles on a	• 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	full turn, half turn, quarter turn, rotate, rotation, angle, greater/smaller angle than, right angle, acute, obtuse, reflex, degree, straight line, angle measurer, compasses, protractor, multiples, regular polygons, irregular polygons, equal sides, properties,

		straight line • Calculating angles around a point • Calculating lengths and angles in shapes • Regular and irregular polygons • Reasoning about 3-D shapes	reflex angles • Draw given angles, and measure them in degrees (^{o}) • Identify: • angles at a point and one whole turn (total 360^o) • angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180^o) • other multiples of 90^o • Use the properties of rectangles to deduce related facts and find missing lengths and angles • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	3-D, faces, edges, vertex, vertices, cube, cuboid, prisms, pyramid
	<u>Geometry: Position and Direction</u> **1 week**	• Position in the first quadrant • Reflection • Reflection with coordinates • Translation • Translation with coordinates	• 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.	position, corner, direction, grid, row, column, origin, coordinates, horizontal, vertical, diagonal, parallel, perpendicular, x-axis, y-axis, quadrant, movement, angle, …is a greater/smaller angle than, right angle, acute, obtuse, degree, angle measurer, protractor, property, curved, straight, face, side, congruent, vertex, vertices, regular, irregular, reflection, translation
	<u>Measurement: Converting Units</u> **2 weeks**	• Kilograms and kilometres • Milligrams and millilitres • Metric units • Imperial units	• Convert between different units of metric measure (for example, kilometre and	Kilometer, metre, centimetre, millimeter, gram, kilogram, litre, milliliter, metric units, common imperial units, inches, pounds,

		• Converting units of time • Timetables	metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • Solve problems involving converting between units of time	pints, converting, time, hours, minutes, seconds am, pm, noon, midnight, before, after, next, last, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? how long will it be to…?, how long will it take to…?, timetable, arrive, depart, hour, minute, second, o'clock, half past, quarter to, quarter past, clock, watch, hands, digital/analogue clock/watch, timer, 24-hour clock, 12-hour clock, how often?
	<u>Measurement: Volume</u> **1 week**	• What is volume? • Compare volume • Estimate volume • Estimate capacity	• Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • Use all four operations to solve problems involving measure.	capacity, full, half full, empty, holds, contains, litre (*l*), half-litre, millilitre (*ml*), area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), volume, cube, cuboid, length, width, depth, height, cubic centimetre (cm^3), cubic metre (m^3)