

Whitkirk Primary School – Maths Progression of Pitch

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value	<p>Early number sense: counting</p> <p>Numbers: Reading and writing Numbers</p> <p>Subitise with numbers 1-5</p> <p>Compare numbers within 1-5 understanding the cardinal value of each number.</p> <p>Ordering numbers: Number representation</p>	<p>Sort, represent and count objects to 20</p> <p>Introduce $<$, $>$ and $=$</p> <p>Ordinal numbers</p> <p>Using a number Line</p> <p>Count forwards and backwards up to 100</p> <p>Write numbers to 100</p> <p>Tens and ones</p> <p>One more and one less</p> <p>Compare groups of objects and numbers</p> <p>Order groups of objects and numbers</p> <p>Introducing a 100 square</p> <p>Partitioning numbers</p>	<p>Count forwards and backwards and compare numbers within 20 and 50</p> <p>Count objects and represent numbers in 100 and write in words and numerals</p> <p>Use place value Chart</p> <p>Compare and order objects and numbers</p> <p>Count in 2s 3s 5s and 10s</p> <p>Know 10 more and 10 less</p> <p>Compare money</p>	<p>Represent numbers to 1,000</p> <p>100s, 10s and 1s</p> <p>Number line to 1,000</p> <p>Find 1, 10, 100 more or less than a given number</p> <p>Compare objects and numbers to 1,000</p> <p>Order numbers</p> <p>Count in 50s</p>	<p>Represent numbers to 1,000</p> <p>100s, 10s and 1s</p> <p>Number line to 1,000</p> <p>Find 1, 10, 100 and 1,000 more or less</p> <p>Compare numbers</p> <p>Order numbers</p> <p>Count in 1,000s</p> <p>Count in 25s</p> <p>Round to the nearest 10, 100 and 1,000</p> <p>Partitioning</p> <p>Number line to 10,000</p> <p>Negative numbers</p> <p>Roman numerals to 100</p>	<p>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>Solve number problems and practical problems that involve all of the above</p> <p>Read Roman numerals to 1000</p>	<p>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.</p> <p>Round any whole number to a required degree of accuracy.</p> <p>Use negative numbers in context, and calculate intervals across zero.</p> <p>Solve number and practical problems that involve all of the above.</p>

						(M) and recognise years written in Roman numerals	
Addition and Subtraction	Finding one more than a number	Intro parts and wholes (single and group object)	Know addition and subtraction fact families to 20	Add and subtract multiples of 100	Add and subtract 1s, 10s, 100s and 1,000s	Add and subtract whole numbers with more than 4-digits, including using formal written methods (columnar addition and subtraction).	Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.
	Finding one less than a number	Part-whole model	Check calculations and compare number Sentences	Add and subtract 1s	Add two 3-digit numbers - not crossing 10 or 100	Add and subtract numbers mentally with increasingly large numbers.	Solve problems involving addition, subtraction, multiplication and division.
	Number bonds	Addition symbol	Know bonds to 100	Add and subtract 3-digit and 1-digit numbers – not crossing 10	Add two 4-digit numbers – no exchange		
	Automatically recall number bonds for numbers 0-5.	Addition facts	Know 10 more and 10 less	Add a 2-digit and 1-digit number - crossing 10	Add two 3-digit numbers - crossing 10 or 100		
		Find and make number bonds to 10 and 20	Add and subtract 10s	Add 3-digit and 1-digit numbers – crossing 10	Add two 4-digit numbers – one exchange and more than one exchange		
		Compare number bonds	Add and subtract one digit and 2 digit numbers from 2 digit numbers not crossing and crossing 10	Add 3-digit and 2-digit numbers – crossing 100	Subtract a 3-digit number from a 3-digit number - no exchange		
		Addition: adding together adding more addition using bonds	Mixed addition and subtraction activities	Add two 2-digit numbers - crossing 10 - add ones & add tens	Subtract two 4-digit numbers – no exchange		
		Finding a part	Know bonds to 100	Add and subtract a 2-digit and 3-digit numbers – not crossing 10 or 100	Subtract a 3-digit number from a 3-digit number - exchange		
		Subtraction: crossing out using the symbol find a part counting back finding the difference	Add 3 1 digit numbers	Add a 2-digit and 3-digit numbers – crossing 10 or 100	Subtract two 4-digit numbers – one exchange and more than one		
		Comparing addition and subtraction statements	Find totals and differences and find change				
		Add by counting on within 20					
		Add by making					

		<p>10</p> <p>Subtractions – not crossing 10 and crossing 10</p>		<p>Add two 3-digit numbers – not crossing 10 or 100 and crossing 10 or 100</p> <p>Subtract a 1-digit number from 2-digits - crossing 10</p> <p>Subtract a 1-digit number from a 3-digit number – crossing 10</p> <p>Subtract 3-digit and 2-digit numbers – not crossing 100 and crossing 100</p> <p>Add and subtract 100s</p> <p>Subtract a 2-digit number from a 2-digit number - crossing 10</p> <p>Subtract a 2-digit number from a 3-digit number – crossing 10 or 100</p> <p>Subtract a 3-digit number from a 3-digit number – no exchange and exchange</p> <p>Estimate answers to calculations</p>	<p>exchange</p> <p>Estimate answers</p> <p>Select and use efficient strategies</p>		
Multiplication and division	<p>Doubling numbers</p> <p>Sharing and halving</p>	Count in 2's	Make equal groups	Multiplication – equal groups	6, 7, 9, 11 and 12 times-tables	Identify multiples and factors, including finding	Multiply multi-digit number up to 4 digits by a 2

	numbers	<p>Count in 5's</p> <p>Count in 10's</p> <p>Make and add equal groups</p> <p>Make arrays</p> <p>Make doubles</p> <p>Make equal groups – Grouping</p> <p>Make equal groups - sharing</p>	<p>Add equal groups</p> <p>Make arrays</p> <p>Recognise make and add equal groups</p> <p>Multiplication using x symbol</p> <p>Make doubles</p> <p>x2 x5 x10 times tables</p> <p>Divide by 2, 5 and 10</p>	<p>Multiplication using the symbol</p> <p>Using arrays 2, 3, 4, 5 and 8 times-table</p> <p>Make equal groups - sharing and grouping</p> <p>Multiply by 3, 4, 5 and 10</p> <p>Divide by 2, 3, 5 and 10</p> <p>Multiply 2-digit by 1-digit</p> <p>Divide 2-digit by 1-digit</p> <p>Scaling</p>	<p>6, 7, 9, 11 and 12 times table and division facts</p> <p>Multiply by 10 and 100</p> <p>Multiply by 1 and 0</p> <p>Divide by 10 and 100</p> <p>Multiply and divide by 3, 6</p> <p>Divide by 1 and Itself</p> <p>Multiply 2-digits by 1-digit</p> <p>Divide 2-digits by 1-digit</p> <p>Divide 3-digits by 1-digit</p> <p>Multiply 3 numbers</p> <p>Factor pairs</p> <p>Efficient multiplication</p> <p>Written methods</p> <p>Correspondence problems</p>	<p>all factor pairs of a number, and common factors of two numbers.</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers.</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</p> <p>Multiply and divide numbers mentally drawing upon known facts.</p>	<p>digit number using the formal written method of long multiplication.</p> <p>Divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions or by rounding as appropriate for the context.</p> <p>Divide numbers up to 4 digits by a 2 digit number using the formal written method of short division, interpreting remainders according to context.</p> <p>Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and</p>
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						<p>Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.</p> <p>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.</p> <p>Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.</p>	<p>prime numbers.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p>
Fractions (decimals and percentages)	Halving	<p>Making a half</p> <p>Making a whole</p> <p>Find a half of a quantity</p> <p>Making a quarter</p> <p>Find a quarter</p>	<p>Make equal parts</p> <p>Recognise and find half, a third, and a quarter</p> <p>Count in fractions</p> <p>Fraction problem solving</p>	<p>Recognise and find half, quarter and Third</p> <p>Unit and non-unit fractions</p> <p>Equivalence $\frac{1}{2}$ and $\frac{2}{4}$</p> <p>Equivalent fractions</p>	<p>What is a fraction?</p> <p>Unit and non-unit fractions</p> <p>Equivalent fractions</p> <p>Count in fractions</p> <p>Tenths</p>	<p>Compare and order fractions whose denominators are multiples of the same number.</p> <p>Identify, name and write equivalent fractions of a given fraction,</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>Compare and order fractions, including</p>

		Find a quarter of a quantity Find a quarter		Count in fractions Making the whole Tenths Count in tenths Tenths as decimals Fractions on a number line Fractions of a set of objects Compare fractions Order fractions Add fractions Subtract fractions	Count in tenths Fractions of a set of objects Add fractions Add 2 or more fractions Subtract fractions Subtract 2 fractions Subtract from whole amounts Fractions greater than 1 Calculate fractions of a quantity Problem solving – calculate quantities <u>Decimals:</u> Recognise tenths and hundredths Tenths as decimals Tenths on a place value grid Tenths on a number line Divide 1-digit by 10 Divide 2-digits by 10	represented visually including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple	fractions > 1 Generate and describe linear number sequences (with fractions) Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions. Multiply simple pairs of proper fractions, writing the answer in its simplest form. Divide proper fractions by whole numbers. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction. Recall and use equivalences between simple fractions, decimals and
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					<p>Hundredths</p> <p>Hundredths as decimals</p> <p>Hundredths on a place value grid</p> <p>Divide 1 or 2-digits by 100</p> <p>Bonds to 10 and 100</p> <p>Make a whole</p> <p>Write decimals</p> <p>Compare decimals</p> <p>Order decimals</p> <p>Round decimals</p> <p>Halves and quarters as decimals</p>	rates.	percentages, including in different contexts
Geometry	<p>Shape</p> <p>Compare numbers within 1-5 understanding the cardinal value of each number</p> <p>Patterns</p> <p>Continue, copy and create repeating patterns.</p>	<p>Recognise and name 3D shapes</p> <p>Sort 3D shapes</p> <p>Recognise and name 2D shapes</p> <p>Sort 2D shapes</p> <p>Patterns with 3D and 2D shapes</p>	<p>Recognise 2 and 3D shape</p> <p>Count sides and vertices on 2D shape</p> <p>Lines of symmetry</p> <p>Count faces, edges and vertices on 3D shape</p> <p>Describe position</p>	<p>Turns and angles</p> <p>Right angles in shapes</p> <p>Compare angles</p> <p>Draw accurately</p> <p>Horizontal and vertical</p> <p>Parallel and perpendicular</p>	<p>Turns and angles</p> <p>Right angles in shapes</p> <p>Compare angles</p> <p>Identify angles</p> <p>Compare and order angles</p> <p>Horizontal and vertical</p>	<p>Read, write, order and compare numbers with up to three decimal places.</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</p> <p>Round decimals with two decimal places to the nearest whole</p>	<p>Identify the value of each digit in numbers given to three decimal places and multiply numbers by 10, 100 and 1000 giving answers up to 3dp.</p> <p>Multiply one digit numbers with up to 2dp by whole</p>

		Describe turns Describe position	Describe movement and turns	Recognise and describe 2-D shapes Recognise and describe 3-D shapes Make 3-D shapes	Recognise and describe 2-D shapes What is area? Comparing area Counting squares Making shapes Triangles Quadrilaterals Lines of symmetry Complete a symmetric figure	number and to one decimal place. 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 knowing percentage and decimal equivalents of and those fractions with a denominator of a multiple of 10 or 25. Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	numbers. Use written division methods in cases where the answer has up to two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison. Recall and use equivalences between simple FDP including in different contexts.
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						Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	
Measurement	Weight Length and width Time Capacity	Compare length Compare heights Measuring length –non-standard Introducing a ruler Adding length problems Subtracting length Problems Introducing weight and mass Measure and compare mass Weight and mass problems Introducing capacity and volume Measure and compare Capacity Recognising coins	Measure and compare length in cm and m Four operations and problem solving with length Tell time to the hour half hour, quarter hour, and to 5 minutes Writing time Find and compare durations of time Introduce weight and mass Compare and measure weight and mass Introduce capacity and volume in millilitres and litres 4 operations with mass and	O'clock and half past Quarter past and quarter to Months and years Hours in a day Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Finding and comparing the duration Comparing durations Start and end times Measuring time in seconds	Years, months, weeks and days Hours, minutes and seconds Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Analogue to digital – 12 hour and 24 hour Equivalent lengths - m & cm and mm & cm Add and subtract lengths Kilometres Measure perimeter	Identify 3D shapes, including cubes and other cuboids, from 2D representations. 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. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Draw 2D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. 2 Recognise angles where they meet at a point, are on

		<p>Counting in coins</p> <p>Before and after</p> <p>Dates</p> <p>Time to the hour</p> <p>Time to half the hour</p> <p>Writing time</p> <p>Comparing time</p>	<p>volume</p> <p>Measure length in m, cm and mm</p> <p>Equivalent length in cm & mm and m & cm</p> <p>Compare lengths</p> <p>Add and subtract lengths</p> <p>Measure and calculate perimeter</p> <p>Compare mass</p> <p>Measure mass</p> <p>Add and subtract mass</p> <p>Compare volume</p> <p>Measure capacity</p> <p>Compare capacity</p> <p>Add and subtract capacity</p> <p>Temperature</p> <p>Count money (pounds and pence)</p> <p>Convert pounds and pence</p> <p>Add and subtract money</p>	<p>Perimeter on a grid</p> <p>Perimeter of a rectangle</p> <p>Perimeter of rectilinear shapes</p> <p>Pounds and pence</p> <p>Convert pounds and pence</p> <p>Add and subtract money</p> <p>Find change</p> <p>Ordering money</p> <p>Estimating money</p>	<p>degrees (o).</p> <p>Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and ½ a turn (total 180o) other multiples of 90o.</p> <p>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.</p>	<p>a straight line, or are vertically opposite, and find missing angles.</p> <p>Describe positions on the full coordinate grid (all four quadrants).</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>
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						<p>[for example using 1cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water].</p> <p>Use all four operations to solve problems involving measure.</p>	<p>Calculate the area of parallelograms and triangles.</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3, m^3 and extending to other units (mm^3, km^3).</p>
Algebra						<p>Solve comparison, sum and difference problems using information presented in a line graph.</p> <p>Complete, read and interpret information in tables including timetables.</p>	<p>Interpret and construct pie charts and line graphs and use these to solve problems.</p> <p>Calculate the mean as an average.</p> <p>Use simple formulae</p> <p>Generate and describe linear number sequences.</p> <p>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy an equation with</p>

						<p>two unknowns.</p> <p>Enumerate possibilities of combinations of two variables.</p> <p>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found.</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>
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