

# Year 5 - Maths Teaching Overview



<b>Autumn 1</b>		
Number and place-value (NPV); Written addition and subtraction (WAS)	Read, write, compare and order 5-digit numbers, understanding the place-value and using < and > signs; add and subtract multiples of 10, 100 and 1000 to and from 5-digit numbers; use written addition to add two 4-digit numbers; work systematically to spot patterns	<ul style="list-style-type: none"> <li>• read, write and recognise value of digits in numbers up to 5 digits.</li> </ul>
		<ul style="list-style-type: none"> <li>• read and write 5-digit numbers knowing what each digit represents</li> <li>• add and subtract multiples of 10, 100 and 1000 using place-value.</li> </ul>
		<ul style="list-style-type: none"> <li>• read, write and know value of digits in 5-digit numbers</li> <li>• compare and order 5-digit numbers.</li> </ul>
		<ul style="list-style-type: none"> <li>• add 4-digit numbers using written addition where answers are up to 5-digits.</li> </ul>
		<ul style="list-style-type: none"> <li>• add 4-digit numbers using written addition</li> <li>• look for patterns and try to explain by asking questions and testing ideas.</li> </ul>
Mental addition and subtraction (MAS); Number and place-value (NPV)	Add and subtract 2-digit numbers mentally; choose a strategy for solving mental additions or subtractions; solve word problems	<ul style="list-style-type: none"> <li>• add 2-digit numbers mentally</li> <li>• subtract 2-digit numbers mentally</li> <li>• begin to add a 3-digit number and a 2-digit number.</li> </ul>
		<ul style="list-style-type: none"> <li>• solve place-value additions and subtractions</li> <li>• solve additions and subtractions using appropriate mental strategies</li> <li>• recognise they have a choice how to solve an addition or subtraction.</li> </ul>
		<ul style="list-style-type: none"> <li>• solve subtractions either by counting up to the next 10 first or by counting up to the nearest 100</li> <li>• know and use bonds to 100.</li> </ul>
		<ul style="list-style-type: none"> <li>• subtract using counting up</li> <li>• begin to recognise when it is more appropriate to use counting up rather than written subtraction.</li> </ul>
		<ul style="list-style-type: none"> <li>• read and gather information from word problems</li> <li>• answer word problems using correct calculation.</li> </ul>
Decimals, percentages and their equivalence to fractions (DPE); Number and place-value (NPV); Mental multiplication and division (MMD)	Understand place-value in decimal numbers; multiply and divide numbers with up to two decimal places by 10 and 100; multiply and divide by 0 and 100; add and subtract 0.1 and 0.01; multiply and divide by 4 by doubling or halving twice; use mental multiplication strategies to multiply by 20, 25 and 9	<ul style="list-style-type: none"> <li>• know the value of each digit in a number with two decimal places</li> <li>• write and solve mathematical puzzles using clues.</li> </ul>
		<ul style="list-style-type: none"> <li>• multiply and divide by 10 and 100, giving answers with no, 1 or 2 decimal places, explaining the effect.</li> </ul>
		<ul style="list-style-type: none"> <li>• add and subtract 0.1 to/from number with one decimal place</li> <li>• begin to add and subtract 0.01 to/from number with one or two decimal places.</li> </ul>
		<ul style="list-style-type: none"> <li>• multiply 2- and 3-digit numbers by 4 by doubling twice</li> <li>• divide even 2- and 3-digit numbers by 4 by halving twice.</li> </ul>
		<ul style="list-style-type: none"> <li>• use mental multiplication strategies to multiply by 20, 25 and 9</li> <li>• use the fact that multiplication can be done in any order.</li> </ul>
Measurement (MEA)	Revise converting 12-hour clock times to 24-hour clock times; find a time a given number of minutes or hours and minutes later; calculate time intervals using 24-hour clock format; measure lengths in mm and convert	<ul style="list-style-type: none"> <li>• convert between 12-hour clock times and 24-hour times</li> <li>• write digital times correctly.</li> </ul>
		<ul style="list-style-type: none"> <li>• find a time a given number of minutes or hours and minute later, e.g. 1</li> </ul>

	to cm; find perimeters in cm and convert cm to m	<p>hour 25 minutes after 13:45.</p> <ul style="list-style-type: none"> <li>• read a timetable using 24-hour times</li> <li>• calculate time intervals of more than an hour.</li> <li>• measure lengths to the nearest mm</li> <li>• convert between mm and cm.</li> <li>• find perimeters in cm</li> <li>• convert cm to m.</li> </ul>
Written addition and subtraction ( <b>WAS</b> ); Mental addition and subtraction ( <b>MAS</b> )	Solve subtraction using a written method for 3-digit – 3-digit numbers and for 4-digit numbers; use counting up (Frog) as a strategy to perform mental subtraction; find change from a multiple of ten pounds using counting up	<ul style="list-style-type: none"> <li>• subtract using a written method.</li> <li>• solve written subtractions of 3-digit numbers where they have to move a ten and a hundred.</li> <li>• solve written subtractions of 4-digit numbers</li> <li>• check subtraction with addition.</li> <li>• subtract 3- and 4-digit numbers using counting up</li> <li>• begin to recognise that we should use different methods to subtract depending on the numbers.</li> <li>• find change from a multiple of ten pounds using counting up.</li> </ul>
<b>Autumn 2</b>		
Mental multiplication and division ( <b>MMD</b> ); Fractions, ratio and proportion ( <b>FRP</b> )	Recognise which numbers are divisible by 2, 3, 4, 5, 6, 9 and 25 and identify multiples; find factors; compare and place fractions on a line; find equivalent fractions and reduce them to their simplest form	<ul style="list-style-type: none"> <li>• recognise multiples of 2, 3, 4, 5, 6, 9 and 25.</li> <li>• find factors of numbers to at least 30.</li> <li>• compare pairs of fractions with the same numerator</li> <li>• begin to compare pairs of fractions with different denominators</li> <li>• place fractions on a line.</li> <li>• recognise equivalent fractions</li> <li>• begin to reduce fractions to their simplest form.</li> <li>• reduce fractions to their simplest form.</li> </ul>
Number and place-value ( <b>NPV</b> ); Written multiplication and division ( <b>WMD</b> )	Use mental strategies to multiply and divide multiples of 10 and 100; use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers and estimate answers, divide 3-digit numbers by 1-digit numbers using a written method and express remainders as a fraction	<ul style="list-style-type: none"> <li>• use multiplication facts and place-value to multiply and divide multiples of 10 and 100.</li> <li>• multiply 3-digit and 4-digit numbers by 1-digit numbers using a written method.</li> <li>• use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers</li> <li>• use rounding to estimate the answers.</li> <li>• use mental strategies and jottings to divide 3-digit numbers by 1-digit numbers, including those leaving a remainder</li> <li>• spot and explain patterns and relationships.</li> <li>• use mental strategies and jottings to divide 3-digit numbers by 1-digit numbers, expressing the remainder as a fraction of the divisor.</li> </ul>
Geometry: properties of shapes ( <b>GPS</b> )	Use a protractor to measure and draw angles in degrees; recognise, use terms and classify angles as obtuse, acute and reflex; recognise that angles	<ul style="list-style-type: none"> <li>• measure angles in degrees using a protractor</li> <li>• classify angles as acute, obtuse or reflex.</li> </ul>

	on a line total $180^\circ$ and angles round a point total $360^\circ$ ; identify and name parts of a circle including diameter, radius and circumference; draw circles to a given radius using a pair of compasses; relate angles to turns, and recognise that a $360^\circ$ angle is a complete turn; use angle facts to solve problems related to turn	<ul style="list-style-type: none"> <li>• use a protractor to draw angles of a given size (in degrees)</li> <li>• measure angles using a protractor (in degrees)</li> <li>• classify angles as acute, obtuse and reflex.</li> </ul>
		<ul style="list-style-type: none"> <li>• know that angles on a line total <math>180^\circ</math></li> <li>• know that angles around a point total <math>360^\circ</math>.</li> </ul>
		<ul style="list-style-type: none"> <li>• name circumference, diameter and radius and measure using rulers (and string)</li> <li>• use a pair of compasses to draw a circle to a given radius.</li> </ul>
		<ul style="list-style-type: none"> <li>• recognise that we measure angles of turn</li> <li>• use a protractor to measure and draw angles in degrees</li> <li>• use counting up and knowledge that angles on a line total <math>180^\circ</math> and angles round a point total <math>360^\circ</math> to work out missing angles.</li> </ul>
Number and place-value (NPV); Fractions, ratio and proportion (FRP); Decimals, percentages and their equivalence to fractions (DPE)	Place numbers to 100 000 and decimals up to two places on a line, round numbers to the nearest 10, 100 and 1000 and decimals up to two places to the nearest whole number; compare and order numbers with up to two decimal places; reduce fractions to their simplest form; know and recognise equivalent fractions and decimals to half, tenths and fifths	<ul style="list-style-type: none"> <li>• place 5-digit numbers on a number line</li> <li>• round 5-digit numbers to the nearest 10, 100 and 1000.</li> </ul>
		<ul style="list-style-type: none"> <li>• place numbers with one and two decimal places on a line</li> <li>• round 1-place and 2-place decimals to the nearest whole.</li> </ul>
		<ul style="list-style-type: none"> <li>• compare and order numbers with one and two decimal places</li> <li>• write a number with one decimal place between two neighbouring whole numbers and write a number with two decimal places between neighbouring numbers of tenths.</li> </ul>
		<ul style="list-style-type: none"> <li>• reduce fractions to their simplest form</li> <li>• recognise equivalent fractions.</li> </ul>
		<ul style="list-style-type: none"> <li>• recognise common equivalent fractions and decimals: tenths, hundredths, halves and beginning to know fifths.</li> </ul>
Number and place-value (NPV); Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Mental multiplication and division (MMD); Written multiplication and division (WMD)	Revise mental and written addition and subtraction strategies; choose to use a mental strategy or written method to solve addition and subtraction; choose to solve multiplication and division questions including 2- and 3-digit by 1-digit and 2-digit by 2-digit using a mental or a written method; identify the operation being used on numbers; understand that addition and subtraction are inverse operations multiplication and division; use function machines	<ul style="list-style-type: none"> <li>• choose an appropriate mental or written method to add numbers (up to four digits)</li> <li>• solve additions using mental strategies and written method.</li> </ul>
		<ul style="list-style-type: none"> <li>• choose an appropriate mental or written method to subtract numbers (up to four digits)</li> <li>• solve subtractions using mental strategies and written method.</li> </ul>
		<ul style="list-style-type: none"> <li>• use mental and written methods to solve multiplications</li> <li>• decide to use a written or a mental method to solve a multiplication.</li> </ul>
		<ul style="list-style-type: none"> <li>• solve divisions using both written and mental strategies.</li> <li>• choose an appropriate method for solving divisions (written or mental strategies).</li> </ul>
		<ul style="list-style-type: none"> <li>• work out a function (single operation)</li> <li>• use the inverse operation to find answers.</li> </ul>
<b>Spring 1</b>		
Number and place-value (NPV); Decimals, percentages	Read, write and order numbers with up to 6 digits and understand the place-value of each digit; place 6-digit numbers on a number line and find	<ul style="list-style-type: none"> <li>• read and write 6-digit numbers</li> <li>• say what each digit represents and understand place-value in 6-digit</li> </ul>

and their equivalence to fractions <b>(DPE)</b>	numbers between; solve place-value additions and subtractions with 6-digit numbers; understand place-value in decimal numbers as tenths and hundredths; multiply and divide by 10 /100/1000 using a place-value grid; understand place-value in decimal numbers to 2-decimal places; place decimal numbers on a line; round 2-place decimal numbers to nearest tenth and whole number; say the number a tenth or a hundredth more	numbers.
		<ul style="list-style-type: none"> <li>• read, write and understand place-value in 6-digit numbers</li> <li>• solve place-value additions and subtractions with 6-digit numbers.</li> </ul>
		<ul style="list-style-type: none"> <li>• compare and order numbers with 6 digits and write numbers that lie between</li> <li>• estimate accurately where a 6-digit number should go on a number line.</li> </ul>
		<ul style="list-style-type: none"> <li>• multiply and divide numbers by 10 and 100 including 2-place decimal answers</li> <li>• read, write and say numbers up to six digits and up to two decimal places.</li> </ul>
		<ul style="list-style-type: none"> <li>• understand place-value in 2-place decimals</li> <li>• say a number one-tenth or one-hundredth more than a given decimal</li> <li>• locate 2-place decimals on a number line and begin to round these to the nearest whole number and tenth.</li> </ul>
		<ul style="list-style-type: none"> <li>• add 1-place decimals using appropriate mental strategies</li> <li>• add whole numbers choosing appropriate mental strategies.</li> </ul>
Mental addition and subtraction <b>(MAS)</b> ; Written addition and subtraction <b>(WAS)</b>	Rehearse mental addition strategies for decimals and whole numbers; use counting on as a strategy to perform mental addition of 2-place decimals to the next whole number; solve missing number sentences; use mental strategies to solve word problems; use counting up as a strategy to perform written subtraction (Frog)	<ul style="list-style-type: none"> <li>• use counting on and bonds to 100 to add any 2-place decimal to the next whole number</li> <li>• use mental addition strategies and knowledge of bonds to solve missing number sentences.</li> </ul>
		<ul style="list-style-type: none"> <li>• solve word problems using mental addition</li> <li>• solve word problems using RNCA.</li> </ul>
		<ul style="list-style-type: none"> <li>• count up to solve 4-digit – 4-digit subtractions from near multiples of a thousand, where column subtraction is awkward.</li> </ul>
		<ul style="list-style-type: none"> <li>• read and decipher word problems generating a calculation and solving it to answer the question</li> <li>• solve subtraction word problems using counting up.</li> </ul>
		<ul style="list-style-type: none"> <li>• use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10.</li> </ul>
Number and place-value <b>(NPV)</b> ; Mental multiplication and division <b>(MMD)</b> ; Measurement <b>(MEA)</b>	Use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10; identify prime numbers; revise finding factors of numbers; find squares and square roots of square numbers; make and test rules; use mental multiplication and division strategies; relate mental division strategies to multiples of ten of the divisor	<ul style="list-style-type: none"> <li>• find prime numbers</li> <li>• find factor pairs for numbers up to 50.</li> </ul>
		<ul style="list-style-type: none"> <li>• find square numbers</li> <li>• begin to find square roots</li> <li>• find a pattern, come up with a rule and test it out.</li> </ul>
		<ul style="list-style-type: none"> <li>• use multiplication facts and place-value to work out multiplication mentally.</li> </ul>
		<ul style="list-style-type: none"> <li>• use mental strategies such as chunking to divide mentally</li> <li>• spot multiples of the divisor in the number being divided.</li> </ul>
		<ul style="list-style-type: none"> <li>• identify different types of triangle</li> <li>• know that the angles in a triangle add up to 180°</li> </ul>
Geometry: properties of shapes <b>(GPS)</b> ; Measurement <b>(MEA)</b>	Know properties of equilateral, isosceles, scalene and right-angled triangles; find that angles in a triangle have a total of 180°; sort triangles	<ul style="list-style-type: none"> <li>• identify different types of triangle</li> <li>• know that the angles in a triangle add up to 180°</li> </ul>

	according to their properties; use scales to weigh amounts to the nearest half interval; convert from grams to kilograms and vice versa, from millilitres to litres and vice versa, and from metres to kilometres and vice versa; read scales to the nearest half division; understand that we measure distance in kilometres and miles; use ready reckoning to give approximate values of miles in kilometres and vice versa; draw line conversion graphs	<ul style="list-style-type: none"> <li>• use a protractor to measure angles less than <math>180^\circ</math>.</li> </ul>
		<ul style="list-style-type: none"> <li>• sort triangles using a Venn diagram</li> <li>• describe the properties of triangles.</li> </ul>
		<ul style="list-style-type: none"> <li>• convert between kilograms and grams.</li> <li>• use scales to weigh items to the nearest half division.</li> </ul>
		<ul style="list-style-type: none"> <li>• read scales to the nearest half division</li> <li>• convert from millilitres to litres and vice versa.</li> </ul>
		<ul style="list-style-type: none"> <li>• draw and interpret a line graph</li> <li>• use a line graph to enable conversion between miles and kilometres.</li> </ul>
Written addition and subtraction ( <b>WAS</b> )	Use a written column method to add amounts of money in pounds and pence; add 2-place decimals using written column addition; subtract decimal numbers using counting up (Frog)	<ul style="list-style-type: none"> <li>• add amounts of money using written addition</li> <li>• understand place-value in money.</li> </ul>
		<ul style="list-style-type: none"> <li>• add amounts of money in pounds and pence using written column addition</li> <li>• add 2-place decimals using written column addition.</li> </ul>
		<ul style="list-style-type: none"> <li>• add 2-digit numbers with 2-place decimals using column addition</li> <li>• investigate patterns in addition using knowledge of bonds and a systematic approach.</li> </ul>
		<ul style="list-style-type: none"> <li>• subtract decimal numbers using counting up</li> <li>• use decimal bonds to the next whole number.</li> </ul>
		<ul style="list-style-type: none"> <li>• subtract numbers with 2-place decimals by counting up</li> <li>• use decimal bonds to the next whole number.</li> </ul>
<b>Spring 2</b>		
Written multiplication and division ( <b>WMD</b> )	Use a written method (grid) to multiply pairs of 2-digit numbers; use short division to divide 3-digit numbers by 1-digit numbers, including those which leave a remainder	<ul style="list-style-type: none"> <li>• use a written method to multiply pairs of 2-digit numbers.</li> </ul>
		<ul style="list-style-type: none"> <li>• use a written method to multiply pairs of 2-digit numbers</li> <li>• use rounding to estimate the product</li> </ul>
		<ul style="list-style-type: none"> <li>• begin to use short division to divide 3-digit numbers by 1-digit numbers</li> <li>• use rounding to estimate the answer.</li> </ul>
		<ul style="list-style-type: none"> <li>• use short division to divide 3-digit numbers by 1-digit numbers</li> <li>• use rounding to estimate the answer.</li> </ul>
		<ul style="list-style-type: none"> <li>• divide 3-digit numbers by single-digit numbers using a written method, answers greater than 100, expressing remainders as whole numbers.</li> </ul>
Written multiplication and division ( <b>WMD</b> ); Fractions, ratio and proportion ( <b>FRP</b> )	Find unit fractions and non-unit fractions of 3-digit numbers; use short multiplication to multiply 3-digit numbers by 1-digit numbers; begin to use short multiplication to multiply 4-digit numbers by 1-digit numbers	<ul style="list-style-type: none"> <li>• find unit then non-unit fractions of 3-digit amounts.</li> </ul>
		<ul style="list-style-type: none"> <li>• find unit and non-unit fractions of 3-digit amounts.</li> </ul>
		<ul style="list-style-type: none"> <li>• begin to use short multiplication to multiply 3-digit numbers by single-digit numbers.</li> </ul>
		<ul style="list-style-type: none"> <li>• use short multiplication to multiply 3-digit numbers by 1-digit numbers</li> <li>• use rounding to estimate the answer</li> </ul>

		<ul style="list-style-type: none"> <li>look at final digits for clue to match calculations in answers.</li> </ul>
		<ul style="list-style-type: none"> <li>begin to use short multiplication to multiply 4-digit numbers by single-digit numbers.</li> </ul>
Geometry: properties of shapes (GPS); Measurement (MEA)	Understand what a polygon is; draw polygons using dotted square and isometric paper; revise terms obtuse, acute and reflex angles, perpendicular and parallel sides; recognise quadrilaterals as polygons and identify their properties; classify quadrilaterals; draw regular polygons and explore their properties; revise SI units of weight, capacity and length; understand that we can measure in Imperial units and relate these to their instances in daily life	<ul style="list-style-type: none"> <li>identify and define a polygon</li> <li>recognise different polygons and name these</li> <li>identify parallel and perpendicular lines.</li> <li>recognise and identify different types of quadrilateral</li> <li>identify quadrilaterals by recognising and describing their properties.</li> <li>identify and describe polygons according to properties</li> <li>begin to say what the angles at the centre of regular polygons might be.</li> <li>name some commonly used Imperial units and say to which measure these correspond.</li> <li>use Standard International Units to measure lengths, weights and capacities</li> <li>recognise that Imperial units can be used for this purpose</li> <li>identify the contexts where people are likely to use Imperial units</li> <li>develop a feel-factor for some commonly used Imperial units.</li> </ul>
Fractions, ratio and proportion (FRP)	Place mixed numbers on lines; count up in fractions using equivalence; convert improper fractions to mixed numbers and vice versa; write improper fractions as mixed numbers and vice versa; multiply proper fractions by whole numbers	<ul style="list-style-type: none"> <li>place mixed numbers, e.g. <math>3\frac{5}{6}</math>, on lines</li> <li>count up in fractions using equivalence</li> <li>write improper fractions as mixed numbers and vice versa.</li> <li>write improper fractions as mixed numbers and vice versa</li> <li>look for patterns and begin to write rules.</li> <li>fractions by whole numbers, e.g. <math>\frac{2}{5} \times 8</math>.</li> <li>multiply improper fractions by whole numbers, e.g. <math>\frac{1}{4} \times 7</math> etc.</li> </ul>
Written addition and subtraction (WAS)	Solve subtraction of 4-digit numbers using written column subtraction (decomposition); add several numbers using written column addition; use column addition to solve problems and answer questions	<ul style="list-style-type: none"> <li>solve 4-digit – 4-digit subtraction using written column method.</li> <li>solve 4-digit subtractions using the written column method</li> <li>solve written column subtractions of 4-digit numbers where you have to move 3 digits.</li> <li>solve 4-digit subtractions using column subtraction</li> <li>check 4-digit subtraction using estimating and addition</li> <li>identify patterns and make predictions.</li> <li>add several numbers 2-, 3- &amp; 4-digit using column addition.</li> <li>use column addition to add lots of 3-digit numbers to solve a problem</li> <li>use a tape measure to measure to the nearest centimetre.</li> </ul>
<b>Summer 1</b>		
Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to	Mentally add 2-place decimal numbers in the context of money using rounding; add several small amounts of money using mental methods; mentally subtract amounts of money including giving change; calculate the	<ul style="list-style-type: none"> <li>add money with 2-place decimals using rounding (round up or down to nearest pound and adjust.</li> <li>solve additions of small amounts of money mentally</li> </ul>

fractions ( <b>DPE</b> )	difference between two amounts using counting up (Frog); solve word problems, including 2-step problems, choosing an appropriate method	<ul style="list-style-type: none"> <li>• use number facts and place-value to solve addition mentally.</li> <li>• solve subtractions of an amount of money using mental strategies</li> <li>• children use mental strategies rounding, number facts, place-value, etc.</li> <li>• find change using counting up (Frog)</li> <li>• subtract amounts of money using counting up (Frog).</li> <li>• solve word problems using addition, subtraction of amounts of money</li> <li>• use mental strategies to solve calculations.</li> </ul>
Fractions, ratio and proportion ( <b>FRP</b> ); Written multiplication and division ( <b>WMD</b> )	Multiply fractions less than 1 by whole numbers, convert improper fractions to whole numbers; use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers; use long multiplication to multiply 2-digit and 3-digit numbers by teens numbers	<ul style="list-style-type: none"> <li>• multiply fractions less than 1 by whole numbers</li> <li>• write improper fractions as mixed numbers</li> <li>• spot patterns and make generalisations.</li> <li>• use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers</li> <li>• use rounding to estimate the answer.</li> <li>• use short multiplication to multiply 4-digit numbers by single-digit numbers</li> <li>• use rounding to estimate answers.</li> <li>• understand the three-stage process in long multiplication</li> <li>• begin to use long multiplication to multiply 2-digit numbers and 3-digit numbers by teens numbers.</li> <li>• use long multiplication to multiply 3-digit numbers by teens numbers.</li> </ul>
Decimals, percentages and their equivalence to fractions ( <b>DPE</b> ); Number and place-value ( <b>NPV</b> )	Read, write and compare decimals to three decimal places; begin to understand the third decimal place represents 1000ths; multiply and divide numbers by 10, 100 and 1000 using 3-place decimal numbers in the calculations; place 2-place decimals on a number line and round them to the nearest tenth and whole number; read, write, order and compare 3-place decimal numbers using a number line; understand and use negative numbers in the context of temperature	<ul style="list-style-type: none"> <li>• read, write and compare 3-place decimals</li> <li>• know 0.001 is 1/1000.</li> <li>• multiply and divide numbers by 10, 100 &amp; 1000 including numbers with 3-place decimals</li> <li>• understand place-value in 4-digit numbers and 3-place decimals.</li> <li>• children can round 2-place decimals to the nearest tenth</li> <li>• children can round decimals to the nearest whole number</li> <li>• children can locate 2-place decimal numbers on a number line.</li> <li>• understand place-value of decimal numbers to 3 decimal places</li> <li>• use systematic logic to order their search</li> <li>• use mathematical reasoning in solving a problem.</li> <li>• compare and order negative numbers</li> <li>• understand negative numbers are less than zero.</li> </ul>
Geometry: position and direction ( <b>GPD</b> ); Geometry: properties of shapes ( <b>GPS</b> )	Read and mark co-ordinates in the first two quadrants; draw simple polygons using co-ordinates; translate simple polygons through simple consistent changes to the co-ordinates; reflect simple shapes in the y-axis or in a line, noting what happens to the co-ordinates; translate simple shapes and note what happens to the co-ordinates; draw 2D shapes, regular	<ul style="list-style-type: none"> <li>• mark co-ordinates in the first quadrant and draw a simple polygon</li> <li>• add to x and y co-ordinates to translate simple polygons in the first quadrant.</li> </ul>

	<p>and irregular, using given dimensions and angles; use the properties of 2D shapes, including rectangles, to deduce related facts; identify 3D shapes from 2D representations; create 3D shapes using 2D nets; draw 3D shapes</p>	<ul style="list-style-type: none"> <li>• draw shapes reflected in the x-axis</li> <li>• begin to draw shapes reflected in a line parallel with the x-axis.</li> <li>• plot co-ordinates on a graph and join these to create a polygon</li> <li>• reflect the polygon in the y axis or in another vertical line on the graph</li> <li>• understand what has happened to the co-ordinates after they have reflected the shape in the y axis</li> <li>• begin to explain what happens to the x co-ordinates when they reflect a shape in a vertical line on the graph.</li> <li>• identify regular and irregular polygons</li> <li>• draw regular and irregular 2D shapes using given dimensions and with given angles</li> <li>• recognise and use the properties of rectangles to derive related facts.</li> <li>• chn can identify and name 3D shapes</li> <li>• chn can identify 3D shapes from 2D representations</li> <li>• chn can create 3-d shapes using 2D nets</li> <li>• chn can draw 3D shapes to create a 2D representation</li> </ul>
<p>Written addition and subtraction (<b>WAS</b>)</p>	<p>Add 5-digit numbers using written column addition; subtract 5-digit numbers using written method (decomposition); check answers to subtractions using addition (written column method); solve subtractions of 4- and 5-digit numbers using written column subtraction (decomposition) or Frog (counting up)</p>	<ul style="list-style-type: none"> <li>• add two 5-digit numbers using written column addition.</li> <li>• add two 5-digit numbers using written column addition.</li> <li>• children can subtract 5-digit numbers using decomposition</li> <li>• children can subtract 5-digit numbers using Frog (counting up).</li> <li>• children can subtract 5-digit numbers using decomposition</li> <li>• children can subtract 5-digit numbers using Frog (counting up).</li> <li>• choose the appropriate method to solve subtraction of 5-digit numbers</li> <li>• children can subtract 5-digit numbers using Frog (counting up) or the written column method (decomposition).</li> </ul>
<p><b>Summer 2</b></p>		
<p>Mental multiplication and division (<b>MMD</b>); Fractions, ratio and proportion (<b>FRP</b>)</p>	<p>Identify factors and multiples, find factor pairs; revise equivalent fractions; compare and order fractions with related denominators; add fractions with same denominator, then related denominators then convert answer into a mixed number; subtract fractions with same denominator, then related denominators; revise multiplying fractions by whole numbers</p>	<ul style="list-style-type: none"> <li>• identify factors of 2-digit numbers</li> <li>• pursue a line of enquiry.</li> <li>• recognise equivalent fractions</li> <li>• use equivalence to compare pairs of related fractions.</li> <li>• add fractions with related denominators</li> <li>• change improper fractions to mixed numbers.</li> <li>• subtract pairs of fractions with related denominators.</li> <li>• multiply non-unit fractions by whole numbers</li> <li>• change improper fractions to mixed numbers, simplifying where possible.</li> </ul>
<p>Written multiplication and division (<b>WMD</b>)</p>	<p>Use short division to divide 3-digit numbers by 1-digit numbers and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction; use long multiplication to multiply 3-</p>	<ul style="list-style-type: none"> <li>• use short division to divide 3-digit numbers by 1-digit numbers</li> <li>• write remainders as fraction of the divisor.</li> <li>• use short division to divide 4-digit numbers by single-digit numbers,</li> </ul>



	digit and 4-digit numbers by teens numbers	<p>including those which leave a remainder.</p> <ul style="list-style-type: none"> <li>• use short division to divide 4-digit numbers by 1-digit numbers, including those which leave a remainder</li> <li>• express a remainder as fraction</li> <li>• use multiplication to check.</li> </ul> <ul style="list-style-type: none"> <li>• use a written method to multiply 3-digit and 4-digit numbers by teens numbers</li> <li>• make an approximation.</li> </ul> <ul style="list-style-type: none"> <li>• use a written method to multiply 4-digit numbers by 2-digit numbers</li> <li>• explain their reasoning.</li> </ul>
Measurement (MEA)	Find the area and perimeter of squares and rectangles by calculation; estimate and find the area of irregular shapes; calculate the perimeter and area of composite shapes; use the relations of area and perimeter to find unknown lengths; begin to understand the concept of volume; find the volume of a cube or cuboid by counting cubes; understand volume as measurement in three dimensions; relate volume to capacity; recognise and estimate volumes	<ul style="list-style-type: none"> <li>• calculate the perimeter of a square or rectangle</li> <li>• calculate the area of a square or rectangle</li> <li>• understand that perimeter is measured in centimetres and area is measured in square centimetres.</li> </ul> <ul style="list-style-type: none"> <li>• find the area of an irregular shape</li> <li>• find the area and the perimeter of a composite shape by dividing it into squares and rectangles.</li> </ul> <ul style="list-style-type: none"> <li>• find the area and the perimeter of a rectangle</li> <li>• use the area and one side to find a missing side length</li> <li>• use the perimeter and one side to find a missing side length.</li> </ul> <ul style="list-style-type: none"> <li>• understand that volume is measurement in three dimensions</li> <li>• see that to find the volume of a cube or cuboid, we can count the cubes used to build it</li> <li>• understand that to calculate the volume we can multiply the three sides.</li> </ul> <ul style="list-style-type: none"> <li>• understand that volume is a measurement of the amount of space a shape takes up.</li> <li>• understand that capacity is a measurement of the amount of water or lentils something will hold.</li> </ul>
Decimals, percentages and their equivalence to fractions (DPE); Number and place-value (NPV)	Understand what percentages are, relate them to hundredths; know key equivalences between percentages and fractions, use these to find percentages of amounts of money; find equivalent fractions, decimals and percentages; solve problems involving fraction and percentage equivalents; write dates using Roman numerals	<ul style="list-style-type: none"> <li>• identify percentage coloured</li> <li>• convert percentages to hundredths, simplifying where possible.</li> </ul> <ul style="list-style-type: none"> <li>• find 1%, 10%, 50% and 5% of an amount of money, and use these key percentages and knowledge of equivalent fractions to find other percentages of the same amount.</li> </ul> <ul style="list-style-type: none"> <li>• identify equivalent fractions, decimals and percentages</li> <li>• use equivalent fractions and percentages to solve problems.</li> </ul> <ul style="list-style-type: none"> <li>• write the dates of years using Roman numerals.</li> </ul>
Statistics (STA); Mental multiplication and division (MMD); Written multiplication	Find cubes; draw and interpret line graphs showing change in temperature over time; begin to understand rate; use timetables with times written using the 24-hour clock: use Frog to find time intervals of several hours and	<ul style="list-style-type: none"> <li>• find cubes to at least <math>6^3</math></li> <li>• draw a line graph and interpret intermediate points.</li> <li>• draw and interpret line graphs</li> </ul>

and division ( <b>WMD</b> )	minutes; solve problems involving scaling by simple fractions; use factors to multiply; solve problems involving rate	<ul style="list-style-type: none"> <li>• estimate intermediate values</li> <li>• begin to understand the concept of a constant rate.</li> </ul>
		<ul style="list-style-type: none"> <li>• read a timetable using 24-hour times</li> <li>• convert 24-hour times to 12-hour times</li> <li>• calculate time intervals of more than several hours.</li> </ul>
		<ul style="list-style-type: none"> <li>• use a scale factor to find new dimensions and make a scale model</li> <li>• appreciate the real life applications of scale drawings and models.</li> </ul>
		<ul style="list-style-type: none"> <li>• use factors to multiply numbers mentally</li> <li>• choose and explain mental strategies used to multiply larger numbers</li> <li>• begin to understand the concept of 'rate'</li> <li>• solve simple word problems involving rates.</li> </ul>