



Year 1 Maths Medium Term Planning

Term Topic	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place Value (within 10)	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least read and write numbers from 1 to 20 in numerals and words 	<p>Sort objects Count objects Represent objects Count, read and write forwards from any number 0 to 10 Count, read and writing backwards from any number 0 to 10 Count one more Count one less One to one correspondence to start to compare groups Compare groups using language such as equal, more/greater, less/fewer Introduce =, > and < symbols Compare numbers Order groups of objects Order numbers Ordinal numbers (1st, 2nd, 3rd) The number line</p>	<p>equal to more than less than (fewer) most least greatest smallest same different sort groups digit value</p>
Autumn Addition and Subtraction	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs represent and use number bonds and related subtraction facts within 20 add and subtract one-digit and two-digit numbers to 20, including 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<p>Part-whole model Additional symbol Fact families Number bonds within 10 with methods and comparisons Addition - adding together/more Finding part Subtraction symbol Subtraction - crossing out Subtraction - counting back Subtraction - breaking apart Subtraction - finding the difference Comparing statements $a + b < c$, $a + b < c + d$</p>	<p>add plus subtract take away part whole first then now bar model equal to (=) fact families part-whole model number bond pattern digit more/greater less/smaller</p>
Autumn Geometry (shape)	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<p>Recognise and name 3d shapes Sort 3d shapes Recognise and name 2d shapes Sort 2d shapes Patterns with 3d and 2d shapes</p>	<p>cube cylinder cuboid pyramid 2d 3d orientation face triangles squares rectangles circles surface</p>

<p>Spring Place Value (within 20)</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s • given a number, identify 1 more and 1 less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read and write numbers from 1 to 20 in numerals and words 	<p>Count within 20</p> <p>Understand 10</p> <p>Understand 11, 12 and 13</p> <p>Understand 14, 15 and 16</p> <p>Understand 17, 18 and 19</p> <p>Understand 20</p> <p>1 more and 1 less</p> <p>The number line to 20</p> <p>Use a number line to 20</p> <p>Estimate on a number line to 20</p> <p>Compare numbers to 20</p> <p>Order numbers to 20</p>	<p>equal to more than less than (fewer) most least greatest smallest same different sort groups digit value</p>
<p>Spring Addition and Subtraction (within 20)</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • represent and use number bonds and related subtraction facts within 20 • add and subtract one-digit and two-digit numbers to 20, including 0 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<p>Add by counting on within 20</p> <p>Add ones using number bonds</p> <p>Find and make number bonds to 20</p> <p>Doubles</p> <p>Near doubles</p> <p>Subtract ones using number bonds</p> <p>Subtraction - counting back</p> <p>Subtraction - finding the difference</p> <p>Related facts</p> <p>Missing number problems</p>	<p>add plus subtract take away part whole first then now bar model equal to (=) fact families part-whole model number bond pattern digit more/greater less/smaller</p>

Spring Place value (within 50)	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least <p>read and write numbers from 1 to 20 in numerals and words</p>	<p>Count from 20 to 50 20, 30, 40 and 50 Count by making groups of tens Groups of tens and ones Partition into tens and ones The number line to 50 Estimate on a number line to 50 more, 1 less</p>	<p>equal to more than less than (fewer) most least greatest smallest same different sort groups digit value</p>
Spring Measurement – length and height	<p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] measure and begin to record the following: lengths and heights 	<p>Compare lengths and heights Measure length using objects Measure length in centimetres</p>	<p>long/short longer/shorter tall/short length height double/half measure</p>
Spring Measurement – Mass and volume	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than] <ul style="list-style-type: none"> capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] measure and begin to record the following: <ul style="list-style-type: none"> mass/weight capacity and volume 	<p>Heavier and lighter Measure mass Compare mass Full and empty Compare volume Measure capacity Compare capacity</p>	<p>double/half mass weight light heavy heavier full/empty more than less than capacity volume</p>
Summer Multiplication and division	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher 	<p>Count in 2s Count in 10s Count in 5s Recognise equal groups Add equal groups Make arrays Make doubles Make equal groups – grouping Make equal groups - sharing</p>	<p>multiples double arrays lots of groups of times equal grouping sharing</p>
Summer Fractions	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity 	<p>Recognise a half of an object or a shape Find a half of an object or a shape Recognise a half of a quantity Find a half of a quantity</p>	<p>half quarter fraction equal whole parts shape object quantity</p>

	<ul style="list-style-type: none"> recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity 	<p>Recognise a quarter of an object or a shape Find a quarter of an object or a shape Recognise a quarter of a quantity Find a quarter of a quantity</p>	
Summer Geometry – Position and direction	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> describe position, direction and movement, including whole, half, quarter and three-quarter turns 	<p>Describe turns Describe position - left and right Describe position - forwards and backwards Describe position - above and below Ordinal numbers</p>	<p>Half quarter full turn left right forwards backwards above below ordinal</p>
Summer Place value (within 100)	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least 	<p>Count from 50 to 100 Tens to 100 Partition into tens and ones The number line to 100 1 more, 1 less Compare numbers with the same number of tens Compare any two numbers</p>	<p>equal to more than less than (fewer) most least greatest smallest same different sort groups digit value partition</p>
Summer Money	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> recognise and know the value of different denominations of coins and notes 	<p>Unitising Recognise coins Recognise notes Count in coins</p>	<p>pence coin pound note value</p>
Summer Time	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> compare, describe and solve practical problems for: <ul style="list-style-type: none"> time [for example, quicker, slower, earlier, later] measure and begin to record the following: <ul style="list-style-type: none"> time (hours, minutes, seconds) sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<p>Before and after Days of the week Months of the year Hours, minutes and seconds Tell the time to the hour Tell the time to the half hour</p>	<p>before after next hours/minutes/ seconds first today yesterday/tomorrow</p>



Year 2 Maths Medium Term Planning

Term Topic/Duration	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place Value	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> • Read and write numbers to at least 100 in numerals and in words. • Recognise the place value of each digit in a two-digit number (tens, ones) Identify, represent and estimate numbers using different representations including the number line. • Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs. • Use place value and number facts to solve problems. • Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. 	<p>Numbers to 20 Count objects to 100 by making 10s Recognise tens and ones Place value chart Partition numbers to 100 Write numbers to 100 in words Flexibly partition numbers to 100 Write numbers to 100 in expanded form - tens and ones 10s on the number line to 100 10s and 1s on the number line to 100 Estimate numbers on a number line Compare objects Compare numbers Order objects and numbers Count in 2s, 5s and 10s Count in 3s</p>	<p>ones tens digits represents place value column part whole sum total difference plus minus equals combine partition</p>
Autumn Addition and subtraction	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. • Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 	<p>.Bonds to 10 Fact families Related facts Bonds to 100 (tens) Add and subtract 1s Adding by making 10 Add three 1-digit numbers Add to the next 10 Add across 10 Subtract across 10 Subtract from a 10 Subtract 1-digit number from a 2-digit number (across a 10) 10 more, 10 less Add and subtract 10s Add two 2-digit numbers (not across 10) Add two 2-digit numbers (across 10) Mixed addition and subtraction Compare number sentences Missing number problems</p>	<p>Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Double, near double Half, halve Equals, is the same as (including equals sign) Difference between</p>

Autumn Geometry Shape	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. Compare and sort common 2-D and 3-D shapes and everyday objects. 	<p>Recognise 2-D and 3-D Count sides on a 2-D Count vertices on 2-D Draw 2-D shapes Lines of symmetry on shapes Lines of symmetry to complete shapes Sort 2-D Shapes (shapes not taught in Y1) Count faces on 3-D shapes Count edges on 3-D shapes Count vertices on 3-D shapes Sort 3-D shapes Make patterns with 2-D and 3-D shapes</p>	<p>Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner (point, pointed) Face, side, edge</p>
Spring Money	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. 	<p>Count money – pence Count money – pounds Pounds and pence Choose notes and coins Make the same amount Compare amounts of money Calculate with money Make a pound Find change Two-step problems</p>	<p>money coin penny, pence, pound price, cost buy, bought, sell, sold spend, spent pay change dear, costs more cheap, costs less, cheaper costs the same as how much ...? how many ...? total</p>
Spring Multiplication and division	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Recall and use multiplication and division facts for the 2, 5- and 10-times tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. 	<p>Recognise equal groups Make equal groups Add equal groups Introduce the multiplication symbol Multiplication sentences Use arrays Make equal groups – grouping Make equal groups – sharing 2 times table Divide by 2 Doubling and halving Odd and even numbers 10 times table Divide by 10 5 times table Divide by 5 5 and 10 times tables</p>	<p>multiplication multiply multiplied by multiple groups of times once, twice, three times ... ten times repeated addition multiplication multiply multiplied by multiple groups of times once, twice, three times ... ten times repeated addition</p>

Spring Measurement Length and height	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =. 	<p>Measure in cm Measure in m Compare lengths and heights Order length and heights Four operations with lengths and heights</p>	<p>centimetre, metre length, height, width, depth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher ... and so on longest, shortest, tallest, highest ... and so on far, further, furthest, near, close ruler metre stick, tape measure</p>
Spring Mass, capacity and temperature	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =. 	<p>Compare mass Measure in grams Measure in kilograms Four operations with mass Compare volume and capacity Measure in millimetres Measure in litres Four operations with volume and capacity Temperature</p>	<p>kilogram, half kilogram, gram weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales litre, half litre, millilitre capacity volume full empty more than less than half full temperature degree</p>
Summer Fractions	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	<p>Make equal parts. Recognise half. Find half. Recognise quarter. Find a quarter. Recognise a third. Find a third. Unit fractions. Nonunit fractions. Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$. Find three quarters. Count in fractions.</p>	<p>fraction equivalent fraction mixed number numerator, denominator equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts</p>
Summer Time	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day. Compare and sequence intervals of time. 	<p>O'clock and half past. Quarter past and quarter to. Telling time to 5 minutes. Minutes in an hour, hours in a day. Find durations of time. Compare durations of time</p>	<p>hour, o'clock, half past, quarter past, quarter to 5, 10, 15 ... minutes past days of the week, Monday, Tuesday ... months of the year (January, February ...) seasons: spring, summer, autumn, winter day, week, weekend, fortnight, month, year</p>

<p>Summer Position and direction</p>	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> • Use mathematical vocabulary to describe position, direction and movement; movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). • Order and arrange combinations of mathematical objects in patterns and sequences. 	<p>Describing movement. Describing turns. Describing movement and turns. Making patterns with shapes.</p>	<p>position over, under, underneath above, below top, bottom, side on, in outside, inside around in front, behind front, back beside, next to opposite apart between middle, edge centre corner direction journey, route left, right</p>
<p>Summer Statistics</p>	<p>Pupils should be taught to</p> <ul style="list-style-type: none"> • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • Ask and answer questions about totalling and comparing categorical data. 	<p>Make tally charts. Draw pictograms (1-1). Interpret pictograms (1-1). Draw pictograms (2, 5 and 10). Interpret pictograms (2, 5 and 10). Block diagrams.</p>	<p>count, tally, sort, vote graph, block graph, pictogram represent group, set list, table label, title most popular, most common least popular, least common</p>



Year 3 Maths Medium Term Planning

Term Topic	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place value	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Identify, represent and estimate numbers using different representations. Find 10, 100 more or less Recognise the place value in a three-digit number (hundreds, tens, ones). Compare and order numbers up to 1000. Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. Count from 0 in 4, 8, 50 and 100. 	<p>Represent numbers to 100 Partition numbers to 100 Number line to 100 Hundreds Represent numbers to 1000 Partition numbers to 1000 Flexible partition of numbers to 1000 Hundreds, tens and ones Find 1, 10 or 100 more or less Number line to 1000 Estimate on a number line to 1000 Compare numbers to 1000 / Order numbers to 1000 Count in 50s</p>	<p>number; zero; numbers to 20; count, forwards, backwards; how many, more, fewer, equal, group; order, largest, smallest, less; even, odd, place value; digit, integer; symbol; compare; equal to, more, less, greater than, fewer, less than, greatest, smallest; first, second, third...last; ones, tens, partition, exchange; order, largest, smallest, biggest, least, most, Numbers to one thousand; 3-digit; thousand; ascending, descending;</p>
Autumn Addition and subtraction	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens, a three-digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Estimate the answer to a calculation and use inverse operations to check answers. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction 	<p>Apply number bonds within 10 Add and subtract 1s Add and subtract 10s Add and subtract 100s Spot the pattern – exploring the effect of + and – 1s, 10s, and 100s Add 1s across 10 Add 10s across 100 Subtract 1s across 10 Subtract 10s across 100 Make connections – E.g. if children know $5 + 7 = 12$, then they also know that $12 - 5 = 7$, $120 - 50 = 70$ and $50 + 70 = 120$ Add two numbers (no exchange) Subtract two numbers (no exchange) Add two numbers (across 10) – column addition with exchange Add two numbers (across 100) – column addition with exchange Subtract two numbers (across a 10) – column subtraction exchange</p>	<p>one more, one less, altogether, how many are left? Same, different, number bond, part-whole, add, take-away, number bonds, part, whole; plus; fact family, addition sentence, number sentence; how many more; number line; commutative; addition, more, make, sum, total, add together, altogether; calculation; inverse equals, is the same as (including equals sign); subtract, , subtraction, take away, minus; difference between, what is the difference? how many more?, how many less? how much more is? how many fewer is?, how much less is? Column, column addition and subtraction; regroup; efficient; estimate.</p>

		<p>Subtract two numbers (across a 100) – column subtraction exchange Add 2-digit and 3-digit numbers Subtract a 2-digit from a 3-digit number Complements to 100 Estimate answers Inverse operations Make decisions – which operation and method is appropriate</p>	
Autumn Multiplication and division A	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Count from 0 in multiples of 4, 8, 50 and 100. Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objectives. 	<p>Multiplication – equal groups Use arrays 3. Multiples of 2 Multiples of 5 and 10 Sharing and grouping Multiply by 3 Divide by 3 3 times tables Multiply by 4 Divide by 4 The 4 times table Multiply by 8 Divide by 8 The 8 times table 2, 4 and 8 times tables</p>	<p>Double, half, halve, halving, pairs, twice as many, share, equal, unequal, group, left over, How many altogether? How many are there?; groups, groups of, equal groups, unequal groups; row, column, array; number sentence; double, doubles; equal groups of 2, equal groups of 5, equal groups of 10; share, sharing, equally, odd, even, Times-table; facts; multiples; repeated addition; lots of; of; multiply; multiplied by; times; commutative; twos, fives, tens, threes; array; go into; divide, divide between, division, dividing; grouping, sharing; Fours, eights; remainder; divisor, dividend, quotient.</p>
Spring Multiplication and Division B	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objectives 	<p>Multiples of 10 Related calculations Reasoning about multiplication Multiply a 2-digit number by 1-digit number (no exchange) Multiply a 2-digit number by 1-digit number (with exchange) Link multiplication and division Divide a 2-digit number by a 1-digit number (no exchange) Divide a 2-digit number by a 1-digit number (flexible partitioning) Divide a 2-digit number by a 1-digit number (with remainders) Scaling How many ways? – making combinations</p>	<p>Double, half, halve, halving, pairs, twice as many, share, equal, unequal, group, left over, How many altogether? How many are there?; groups, groups of, equal groups, unequal groups; row, column, array; number sentence; double, doubles; equal groups of 2, equal groups of 5, equal groups of 10; share, sharing, equally, odd, even, Times-table; facts; multiples; repeated addition; lots of; of; multiply; multiplied by; times; commutative; twos, fives, tens, threes; array; go into; divide, divide between, division, dividing; grouping, sharing; Fours, eights; remainder; divisor, dividend, quotient.</p>

Spring Measurement Length and perimeter	Pupils should be taught to: <ul style="list-style-type: none"> • Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). • Measure the perimeter of simple 2D shapes. 	Measure in m and cm / Measure in mm Measure in cm and mm / Metres, cm and mm Equivalent lengths (m and cm) Equivalent lengths (cm and mm) Compare lengths / Add lengths / Subtract lengths What is perimeter? Measure perimeter / Calculate perimeter	length, height, breadth, tall, short, long, tallest, shortest, longest, longer/shorter, taller/shorter, wider/narrower, length, measure, measuring; ruler, cm; change, total; distance; metres; mm; perimeter;
Spring Fractions	Pupils should be taught to: <ul style="list-style-type: none"> • Recognise and show, using diagrams, equivalent fractions with small denominators. • Compare and order unit fractions, and fractions with the same denominators. • Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]. • Solve problems that involve all of the above. 	Understand the denominators of unit fractions Compare and order unit fractions Understand the numerators of non-unit fractions Understand the whole Compare and order non-unit fractions Fractions and scales Fractions on a number line Count in fractions on a number line Equivalent fractions on a number line Equivalent fractions as bar models	Half, halve, halving, whole, parts, equal parts, the same; split; groups; share; equally; quarter; four equal parts One half, two halves A quarter, two quarters, two quarters, three quarters, one third, two thirds; unit fraction, numerator, denominator, vinculum; equivalence, equivalent, non-unit fraction; tenths, two tenths, three tenths etc; two thirds; fifth, sixth, ninth; decimal, decimal point;
Spring Mass and capacity	Pupils should be taught to: <ul style="list-style-type: none"> • Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). 	Use scales Measure mass in grams Measure mass in kilograms and grams Equivalent masses (kg and g) Compare mass / Add and subtract mass Measure capacity and volume in mm Measure capacity and volume in litres and millilitres Equivalent capacities and volumes (litres and millilitres) Compare capacity and volume Add and subtract capacity and volume	weigh, weight, heavy, heavier, heaviest, light, lighter, lightest, balance, mass; balance, scale; volume, full, half full, quarter full, empty; capacity; holds, Container; ml/;
Summer Fractions B	Pupils should be taught to: <ul style="list-style-type: none"> • Recognise and show, using diagrams, equivalent fractions with small denominators. • Compare and order unit fractions, and fractions with the same denominators. • Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]. • Solve problems that involve all of the above 	Compare fractions. Order fractions. Add fractions. Subtract fractions.	Half, halve, halving, whole, parts, equal parts, the same; split; groups; share; equally; quarter; four equal parts One half, two halves A quarter, two quarters, two quarters, three quarters, one third, two thirds; unit fraction, numerator, denominator, vinculum; equivalence, equivalent, non-unit fraction; tenths, two tenths, three tenths etc; two thirds; fifth, sixth, ninth; decimal, decimal point;
Summer Money	Pupils should be taught to: <ul style="list-style-type: none"> • Add and subtract amounts of money to give change, using both £ and p in practical contexts. 	Pounds and pence / Converting pounds and pence. Adding money / Subtracting money. Giving change	money; value; coin; note; amount; 1p, 2p, 5p, 10p, 20p, 50p, £1, £2, £5, £10;

<p>Summer Time</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Tell and write the time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks. • Estimate and read time with increasing accuracy to the nearest minute. • Record and compare time in terms of seconds, minutes and hours. • Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events [for example to calculate the time taken by particular events or tasks 	<p>Months and years. Hours in a day. Telling the time to 5 minutes. Telling the time to the minute. AM and PM. 24 hour clock. Finding the duration. Comparing the duration. Start and end times. Measuring time in seconds</p>	<p>Now, before, soon, later, after, next, fastest; time, yesterday, today, tomorrow, day, week, weekend, month, year; Days of the week: Monday, Tuesday, etc. Seasons: spring, summer, autumn, winter; birthday, holiday; Morning, afternoon, evening, night, midnight bedtime, dinner/lunch time, playtime; hour, o'clock, half past, clock, watch, hands; hour, minute, second; before, after next, last now, soon, early, late, quarter past/to, 5 past, 10 past, twenty to etc, start, duration, end, interval, how long...? When did it start /end /finish...?, seconds; leap year; minutes past/to; a.m., p.m.; analogue, digital; twelve-hour /twenty-four- hour clock; Roman numerals I to XIII.</p>
<p>Summer Geometry Shape</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Recognise angles as a property of shape/description of a turn. • Identify right angles, recognise that two right angles make a half- turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. • Draw 2-D shapes make 3- D shapes using modelling materials. • Recognise 3-D shapes in different orientations and describe them. 	<p>Turns and angles. Right angles in shapes. Compare angles. Draw accurately. Horizontal and vertical. Parallel and perpendicular. Recognise and describe 2D shapes. Recognise and describe 3D shapes. Make 3D shapes.</p>	<p>Shape, circle, triangle, rectangle, square, side, straight, curved, cylinder, cube, cuboid, cone, sphere, pyramid, face, same, different, pattern, polygon, 2D, 3D, group, sort, corner (point, pointed) Face, side, edge Make, build, draw, pentagon, hexagon, octagon, quadrilateral; prism; vertices, vertex;</p>
<p>Summer Statistics</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Interpret and present data using bar charts, pictograms and tables. • Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. 	<p>Pictograms Bar charts Tables.</p>	<p>Count, tally, tally chart, table; data, represent, sort; pictogram, symbol; block diagram, axis; label, title, scale; most popular, most common, least popular, least common; Venn diagram, Carroll diagram, Chart, bar chart; frequency table, Carroll diagram, Diagram</p>



Year 4 Maths Long Term Planning

Term Topic	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place Value	Pupils should be taught to: <ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1,000 find 1,000 more or less than a given number count backwards through 0 to include negative numbers recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) order and compare numbers beyond 1,000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000 solve number and practical problems that involve all of the above and with increasingly large positive numbers read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value 	Represent numbers to 1,000 Partition numbers to 1,000 Number line to 1,000 Thousands Represent numbers to 10,000 Partition numbers to 10,000 Flexible partitioning of numbers to 10,000 Find 1, 10, 100, 1,000 more or less Number line to 10,000 Estimate on a number line to 10,000 add, subtract, sum, total, difference, and exchange. : more than, less than, column method, altogether, strategy, story problem, place value, fact and digit. Compare numbers to 10,000 Order numbers to 10,000 Roman numerals Round to the nearest 10 Round to the nearest 100 Round to the nearest 1,000 Round to the nearest 10, 100 or 1,000	hundreds, tens, counting, compare, order, represent, more than, less than, recombine, partition, numerals rounding', 'round up' and 'round down'
Autumn Addition and subtraction	Pupils should be taught to: <ul style="list-style-type: none"> add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate estimate and use inverse operations to check answers to a calculation solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	Add and subtract 1s, 10s, 100s and 1,000s Add up to two 4-digit numbers - no exchange Add two 4-digit numbers - one exchange Add two 4-digit numbers - more than one exchange Subtract two 4-digit numbers - no exchange Subtract two 4-digit numbers - one exchange Subtract two 4-digit numbers - more than one exchange Efficient subtraction Estimate answers Checking strategies	add, subtract, sum, total, difference, and exchange. : more than, less than, column method, altogether, strategy, story problem, place value, fact and digit.
Autumn Area	Pupils should be taught to: <ul style="list-style-type: none"> find the area of rectilinear shapes by counting squares 	What is area? Count squares Make shapes Compare areas	area squared width, total, distance, convert, equivalent, centimetre (cm) and metre (m).) kilometre'

<p>Autumn Multiplication and division</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recall multiplication and division facts for multiplication tables up to 12×12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	<p>Multiples of 3 Multiply and divide by 6 The 6 times-table and division facts Multiply and divide by 9 The 9 times-table and division facts The 3, 6 and 9 times-tables Multiply and divide by 7 The 7 times-table and division facts The 11 times-table and division facts The 12 times-table and division facts Multiply by 1 and 0 Divide a number by 1 and itself Multiply three numbers Factor pairs Use factor pairs Multiply by 10 Multiply by 100 Divide by 10 Divide by 100 Related facts – multiplication and division Informal written methods for multiplication Multiply a 2-digit number by a 1-digit number Multiply a 3-digit number by a 1-digit number Divide a 2-digit number by a 1-digit number Divide a 2-digit number by a 1-digit number Divide a 3-digit number by a 1-digit number Correspondence problems Efficient multiplication</p>	<p>ones (1s), tens (10s), hundreds (100s), zero (0), times, multiple, sharing, share, times, equal, total, divide, multiply (x), multiplication fact, division fact, lots of, grouping, groups of, times-table, array multiplication, multiply (x), divide (\div), division, group, remainder, share, left over, times-tables, equal, correspondence, combination, repeated addition, whole, one-step, two-step, multi-step</p>
<p>Spring Fractions</p>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number 	<p>Understand the whole Count beyond 1 Partition a mixed number Number lines with mixed numbers Compare and order mixed numbers Understand improper fractions Convert mixed numbers to improper fractions Convert improper fractions to mixed numbers Equivalent fractions on a number line Equivalent fraction families</p>	<p>fraction, numerator, denominator, whole, part, fraction wall, fraction strip, simplify, simplest form, greater than (>), equal to, equivalent to, less than</p>

	<ul style="list-style-type: none"> • add and subtract fractions with the same denominator • recognise and write decimal equivalents of any number of tenths or hundreds 	<p>Add two or more fractions</p> <p>Add fractions and mixed numbers</p> <p>Subtract two fractions</p> <p>Subtract from whole amounts</p> <p>Subtract from mixed numbers</p>	
Spring Length and Perimeter	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • convert between different units of measure [for example, kilometre to metre] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres 	<p>Measure in kilometres and metres</p> <p>Equivalent lengths (kilometres and metres)</p> <p>Perimeter on a grid</p> <p>Perimeter of a rectangle</p> <p>Perimeter of rectilinear shapes</p> <p>Find missing lengths in rectilinear shapes</p> <p>Calculate the perimeter of rectilinear shapes</p> <p>Perimeter of regular polygons</p> <p>Perimeter of polygons</p>	width, total, distance, convert, equivalent, centimetre (cm) and metre (m).) kilometre', 'perimeter' and 'rectilinear shape'
Spring Decimals	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • recognise and write decimal equivalents of any number of tenths or hundreds • recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • round decimals with 1 decimal place to the nearest whole number • compare numbers with the same number of decimal places up to 2 decimal places • solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<p>Tenths as fractions</p> <p>Tenths as decimals</p> <p>Tenths on a place value chart</p> <p>Tenths on a number line</p> <p>Divide a 1-digit number by 10</p> <p>Divide a 2-digit number by 10</p> <p>Hundredths as fractions</p> <p>Hundredths as decimals</p> <p>Hundredths on a place value chart</p> <p>Divide a 1- or 2-digit number by 100</p> <p>Make a whole with tenths</p> <p>Make a whole with hundredths</p> <p>Partition decimals</p> <p>Flexibly partition decimals</p> <p>Compare decimals</p> <p>Order decimals</p> <p>Round to the nearest whole number</p> <p>Halves and quarters as decimals</p>	'regroup', 'partition', 'equivalent' and 'fractions', as well as 'tenths' and 'hundredths' columns integer, one more, one less, greater than (>), less than, regroup, partition, equivalent, fraction, tenths column and hundredths column. decimal point, decimal place
Summer Money	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • estimate, compare and calculate different measures, including money in pounds and pence 	<p>Write money using decimals</p> <p>Convert between pounds and pence</p> <p>Compare amounts of money</p>	pounds (£), pence (p), notes, coins, change, cheaper, more expensive, rounding, nearest,

		Estimate with money Calculate with money Solve problems with money	estimate, over estimate, under estimate, greater than (>), less than (<).
Summer Time	Pupils should be taught to: <ul style="list-style-type: none"> read, write and convert time between analogue and digital 12- and 24-hour clocks solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days 	Years, months, weeks and days Hours, minutes and seconds Convert between analogue and digital times Convert to the 24 hour clock Convert from the 24 hour clock	seconds, minute, hours, days, weeks, months, years, convert, equal to (=), compare, 12-hour, digital, units of time, analogue, 24-hour, am, pm
Summer Shape	Pupils should be taught to: <ul style="list-style-type: none"> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify acute and obtuse angles and compare and order angles up to 2 right angles by size identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry 	Understand angles as turns Identify angles Compare and order angles Triangles Quadrilaterals Polygons Lines of symmetry Complete a symmetric figure	equilateral, scalene and isosceles angle quadrilaterals, acute, triangle, obtuse, polygon, symmetry,
Summer Statistics	Pupils should be taught to: <ul style="list-style-type: none"> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	Interpret charts Comparison, sum and difference Interpret line graphs Draw line graphs	line graph', 'discrete data' and 'continuous data' table, bar chart, pictogram, key, compare, altogether, more than, less than, least, most, greatest, smallest, line graph, discrete data, continuous data
Summer Position and direction	Pupils should be taught to: <ul style="list-style-type: none"> describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon 	Describe position using coordinates Plot coordinates Draw 2-D shapes on a grid Translate on a grid Describe translation on a grid	translation coordinate quadrant right angle



Year 5 Maths Long Term Planning

Term Topic	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place Value	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. • Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. • Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000. • 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. 	<p>Number to 10,000. Roman numerals to 1,000. Round to the nearest 10, 100 and 1000. Number to 100,000. Compare and order numbers to 100,000. Round numbers within 100,000. Numbers to a million. Counting in 10s, 100s, 1,000s, 10,000s and 100,000s. Compare and order numbers to a million. Round numbers to a million. Negative numbers</p>	<p>count, count (up) to, count on (from, to), count back (from, to) forwards backwards count in ones, twos, fives, tens, threes, fours, eights, fifties, sixes, sevens, nines, twenty-fives and so on to hundreds, thousands equal to equivalent to is the same as more, less most, least tally many odd, even multiple of, factor of factor pair sequence continue predict few pattern pair, rule relationship next, consecutive > greater than < less than \geq greater than or equal to \leq less than or equal to Roman numerals integer, positive, negative above/below zero, minus negative numbers formula divisibility square number prime number ascending/descending order</p>
Autumn Addition and subtraction	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • + and - numbers mentally with increasingly large numbers. • + and - whole numbers with more than 4 digits, including using formal written methods (columnar + and -). • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solve + and - multi-step problems in contexts, deciding which operations and methods to use and why 	<p>Mental strategies Add whole numbers with more than four digits Subtract whole numbers with more than four digits Round to check answers Inverse operations (addition and subtraction) Multi-step addition and subtraction problems Compare calculations Find missing numbers</p>	<p>addition add, more, and make, sum, total altogether double near double half, halve one more, two more ... ten more ... one hundred more how many more to make ...? how many more is ... than ...? how much more is ...? subtract take away how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less how many fewer is ... than ...? how much less is ...? difference between equals is the same as number bonds/pairs/facts missing number tens boundary, hundreds boundary, ones boundary, tenths boundary inverse</p>
Autumn Multiplication and division A	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers. 	<p>Multiples Common multiples Factors Common factors</p>	<p>multiply multiplied by multiple, factor groups of times product once, twice, three times ... ten times repeated addition division dividing, divide, divided by,</p>

	<ul style="list-style-type: none"> Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. 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. 	<p>Prime numbers Square numbers Cube numbers Multiply by 10, 100 and 1000 Divide by 10, 100 and 1000 Multiples of 10, 100 and 1000</p>	<p>divided into left, left over, remainder grouping sharing, share, share equally one each, two each, three each ... ten each group in pairs, threes ... tens equal groups of doubling halving array row, column number patterns multiplication table multiplication fact, division fact inverse square, squared cube, cubed</p>
Autumn Fractions A	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Compare and order fractions whose denominators are 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 and write mathematical statements >1 as a mixed number [for example $2\frac{2}{5} + 4\frac{4}{5} = 6\frac{6}{5} = 11\frac{1}{5}$]. 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 [for example $0.71 = \frac{71}{100}$]. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. 	<p>Find fractions equivalent to a unit fraction Find fractions equivalent to a non-unit fraction Recognise equivalent fractions Convert improper fractions to mixed numbers Convert mixed numbers to improper fractions Compare fractions less than 1 Order fractions less than 1 Compare and order fractions greater than 1 Add and subtract fractions with the same denominator Add fractions within 1 Add fractions with total greater than 1 Add to a mixed number Add two mixed numbers Subtract fractions Subtract from a mixed number Subtract from a mixed number – breaking the whole Subtract two mixed numbers</p>	<p>fraction, proper/improper fraction equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every percentage, per cent, %</p>
Spring Multiplication and division B	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Multiply and divide numbers mentally drawing upon known facts. 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>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. Solve problems with multiplication Short division Divide a 4-digit number by a 1 digit number Divide with remainders</p>	<p>multiply multiplied by multiple, factor groups of times product once, twice, three times ... ten times repeated addition division dividing, divide, divided by, divided into left, left over, remainder grouping sharing, share, share equally one each, two each, three each ... ten each group in pairs, threes ... tens equal groups of doubling halving array row, column</p>

	<ul style="list-style-type: none"> 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>Efficient division</p> <p>Solve problems with multiplication and division</p>	<p>number patterns multiplication table</p> <p>multiplication fact, division fact inverse square, squared cube, cubed</p>
Fractions B	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions [for example $0.71 = \frac{71}{100}$]. Solve problems involving multiplication and division 	<p>Multiply a unit fraction by an integer</p> <p>Multiply a non-unit fraction by an integer</p> <p>Multiply a mixed number by an integer</p> <p>Calculate a fraction of a quantity</p> <p>Fraction of an amount</p> <p>Find the whole</p> <p>Use fractions as operators</p>	<p>fraction, proper/improper fraction</p> <p>equivalent fraction mixed number</p> <p>numerator, denominator equivalent, reduced to, cancel equal part equal</p> <p>grouping equal sharing parts of a whole</p> <p>half, two halves one of two equal parts</p> <p>quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every percentage, per cent, %</p>
Decimals and percentages	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Read, write, order & compare numbers with up to 3 DP Recognise & 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 DP Solve problems involving number up to 3 DP Recognise the per cent symbol (%) and understand per cent is 'number of parts per hundred', & write percentages as a fraction with denominator 100, and as a decimal. Solve problems of percentage & decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ & those fractions with a denominator of a multiple of 10 or 25. 	<p>Decimals up to 2 decimals</p> <p>Equivalent fractions and decimals (tenths)</p> <p>Equivalent fractions and decimals (hundredths)</p> <p>Equivalent fractions and decimals</p> <p>Thousandths as a fraction</p> <p>Thousandths as decimals</p> <p>Thousandths on a place value chart</p> <p>Order and compare decimals (same number of decimals)</p> <p>Order and compare any decimals with up to 3 decimal places</p> <p>Round to the nearest whole number</p> <p>Round to 1 decimal place</p> <p>Understand percentages</p> <p>Percentages as fractions</p> <p>Percentages as decimals</p> <p>Equivalent fractions, decimals and percentages</p>	<p>grouping equal sharing parts of a whole</p> <p>half, two halves one of two equal parts</p> <p>quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every percentage, per cent, %</p>
Measurement Perimeter and area	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. 	<p>Perimeter of rectangles</p> <p>Perimeter of rectilinear shapes</p> <p>Perimeter of polygons</p> <p>Area of rectangles</p>	<p>millimetre, centimetre, metre, kilometre,</p> <p>mile length, height, width, depth, breadth</p> <p>long, short, tall high, low wide, narrow</p> <p>thick, thin longer, shorter, taller, higher ...</p>

	<ul style="list-style-type: none"> Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes 	<p>Area of compound shapes Estimate area</p>	<p>and so on longest, shortest, tallest, highest ... and so on far, further, furthest, near, close distance apart ... between ... to ... from edge, perimeter area, covers square centimetre (cm²), square metre (m²), square millimetre (mm²) ruler metre stick, tape measure</p>
Statistics	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables. 	<p>Draw line graphs Read and interpret line graphs Read and interpret tables Two-way tables Read and interpret timetables</p>	<p>count, tally, sort, vote survey, questionnaire, data, database graph, block graph, pictogram represent group, set list, table, chart, bar chart, frequency table, bar line chart Carroll diagram, Venn diagram line graph label, title, axis, axes diagram most popular, most common least popular, least common maximum/minimum value outcome</p>
Summer Geometry Shape	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 degrees. Identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and 1/2 a turn (total 180°) other multiples of 90°. 	<p>Understand and use degrees Classify angles Estimate angles Measure angles up to 180 degrees Draw lines and angles accurately Calculate angles around a point Calculate angles on a straight line Lengths and angles in shapes Regular and irregular polygons 3D shapes</p>	<p>2-D, two-dimensional corner, side point, pointed rectangle (including square), rectangular, oblong rectilinear circle, circular triangle, triangular equilateral triangle, isosceles triangle, scalene triangle pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal quadrilateral parallelogram, rhombus, trapezium 3-D, three-dimensional face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere, spherical cone cylinder, cylindrical prism, triangular prism tetrahedron, polyhedron octahedron</p>
Summer Geometry Position and direction	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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>Read and plot coordinates Problem solving with coordinates Translation Translation with coordinates Lines of symmetry Reflection in horizontal and vertical lines</p>	<p>clockwise, anticlockwise compass point north, south, east, west, N, S, E, W north-east, north-west, south-east, south-west, NE, NW, SE, SW horizontal, vertical, diagonal translate, translation coordinate movement slide roll turn stretch, bend whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle acute angle obtuse angle reflection</p>

			straight line ruler, set square angle measurer, compass, protractor
Summer Decimals	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. 	<p>Adding decimals within 1. Subtracting decimals within 1. Complements to 1. Adding decimals – across 1 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 whole and decimals. Decimal sequences. Multiplying decimals by 10, 100 and 1000. Dividing decimals by 10, 100 and 1,000</p>	<p>Add subtract decimal place whole sequence multiply divide complements</p>
Summer Negative numbers	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero 	<p>Count forward and backwards with positive and negative numbers Count through zero Find the difference</p>	<p>Negative compare find order difference count through zero</p>
Measurment Converting units	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]. 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. 	<p>Kilograms and kilometres. Milligrams and millilitres. Convert units of length Convert metric and imperial Convert units of time Calculate with timetables</p>	<p>Kilograms kilometres milligrams millilitres centimetres millimetres litres convert change unit metric imperial</p>
Measurement Volume	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Estimate volume Use all four operations to solve problems involving measure. 	<p>Cubic centimetres Compare volume Estimate volume Estimate capacity</p>	<p>Volume capacity cubic centimetres full empty more than less than half full quarter full holds, contains container, measuring cylinder pint, gallon</p>



Year 6 Maths Long Term Planning

Term Topic/Duration	N.C. Objectives	Small steps	Key Vocabulary
Autumn Place value	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Round any whole number to a required degree of accuracy. Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve all of the above. 	<p>Numbers to 1,000,000 Numbers to 10,000,000 Read and write numbers to 10,000,000 Powers of 10 Number line to 10,000,000 Compare and order any integers Round any integer Negative Numbers</p>	<p>Roman numerals integer, positive, negative above/below zero, minus negative numbers formula divisibility square number prime number factorise prime factor ascending/descending order digit total</p>
Four operations	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication. 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. Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context. Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving addition, subtraction, multiplication and division. 	<p>Add and subtract integers Common factors Common multiples Rules of divisibility Primes to 100 Square and cube numbers Multiply up to a 4-digit number by a 2-digit number Solve problems with multiplication Short division Division using factors Introduction to long division Long division with remainders Solve problem with division Solve multi-step problems Order of operations Mental calculations and estimation Reason from known facts</p>	<p>addition add, more, and make, sum, total altogether double near double half, halve multiply multiplied by multiple, factor groups of times product once, twice, three times ... ten times repeated addition division dividing, divide, divided by, divided into left, left over, remainder grouping sharing, share, share equally one each, two each, three each ... ten each group in pairs, threes ... tens equal groups of doubling halving array row, column number patterns multiplication table multiplication fact, division fact inverse square, squared cube, cubed</p>
Autumn Fractions A	<p>Pupils should be taught to:</p>	<p>Equivalent fractions and simplifying Equivalent fractions on a number line</p>	<p>equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal</p>

	<ul style="list-style-type: none"> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions >1. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions 	<p>Compare and order (denominator) Compare and order (numerator) Add and subtract simple fractions Add and subtract any two fractions Add mixed numbers Subtract mixed numbers Multi-step problems</p>	<p>part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every ratio percentage, per cent, %</p>
Autumn Fractions B	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$). Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$). Identify the value of each digit to 3DP and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Multiply 1-digit numbers with up to 2DP by whole numbers 	<p>Multiply fractions by integers Multiply fractions by fractions Divide a fraction by an integer Divide any fraction by an integer Mixed questions with fractions Fraction of an amount Fraction of an amount – find the whole</p>	<p>equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every ratio percentage, per cent, %</p>
Autumn Measurement Converting units	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Use, read, write & convert between standard units, converting measurements of length, mass, volume & time from a smaller unit of measure to a larger unit, using decimal notation to up to 3 DP Convert between miles & kilometres. 	<p>Metric measures Convert metric measures Calculate with metric measures Miles and Kilometres Imperial measures</p>	<p>compare unit, standard unit metric unit, imperial unit measuring scale, division centimetre, metre, millimetre, kilometre, mile, yard, foot, feet, inch, inches length, height, width, depth, breadth</p>
Spring Ratio	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving un 	<p>Add or multiply? Use ratio language Introduce ratio symbol Ratio and fractions Scale drawing Use scale factors Similar shapes Ratio problems Proportion problems Recipes</p>	<p>Ratio for every () there are () scale scale factors proportion</p>
Spring Algebra	<p>Pupils should be taught to:</p>	<p>1-step function machines 2-step function machines</p>	<p>formula, formulae equation unknown variable substitution</p>

	<ul style="list-style-type: none"> • Use simple formulae. • Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables. 	<p>Form expressions Substitution Formulae Form equations Solve 1-step equations Solve 2-step equations Find pairs of values Solve problems with two unknowns</p>	
Spring Decimals	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. • Multiply one-digit numbers with up to 2 decimal places by whole numbers. • Use written division methods in cases where the answer has up to 2 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 fractions, decimals and percentages including in different contexts. 	<p>Place value within 1 Place value – integers and decimals Round decimals Add and subtract decimals Multiply by 10, 100 and 1000 Divide by 10, 100 and 1000 Multiply decimals by integers Divide decimals by integers Multiply and divide</p>	<p>decimal, decimal fraction, decimal point, decimal place, decimal equivalent add subtract round multiply divide</p>
Spring Fractions, decimals and percentages	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. Multiply one-digit numbers with up to 2 decimal places by whole numbers. • Use written division methods in cases where the answer has up to 2 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 fractions, decimals and percentages including in different contexts. 	<p>Decimal and fraction equivalents Fractions as division Understand percentages Fractions to percentages Equivalent fractions, decimals and percentages Order fractions, decimals and percentages Percentage of an amount – one step Percentage of an amount – multi step Percentages – missing values</p>	<p>equivalent fraction mixed number numerator, denominator equivalent, reduced to, cancel equal part equal grouping equal sharing parts of a whole half, two halves one of two equal parts quarter, two quarters, three quarters one of four equal parts one third, two thirds one of three equal parts sixths, sevenths, eighths, tenths ... hundredths, thousandths decimal, decimal fraction, decimal point, decimal place, decimal equivalent proportion, in every, for every ratio percentage, per cent, %</p>

Spring Measurement Area, perimeter and volume	Pupils should be taught to: <ul style="list-style-type: none"> Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm³, m³ and extending to other units (mm³, km³). 	Shapes – same area Area and perimeter Area of a triangle – counting squares Area of a right-angled triangle Area of any triangle Area of a parallelogram Volume – counting cubes Volume of a cuboid	Area perimeter triangle right-angled triangle parallelogram volume formulae calculate estimate compare cm ³ , m ³ mm ³ , km ³
Spring Statistics	Pupils should be taught to: <ul style="list-style-type: none"> Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Interpret and construct pie charts and line graphs and use these to solve problems. Calculate the mean as an average. 	Line graphs Dual bar charts Read and interpret pie charts Pie charts with percentages Draw pie charts The mean	count, tally, sort, vote survey, questionnaire, data, database graph, block graph, pictogram represent group, set list, table, chart, bar chart, frequency table, bar line chart Carroll diagram, Venn diagram line graph pie chart label, title, axis, axes diagram most popular, most common least popular, least common maximum/minimum value outcome mean (mode, median, range as estimates for this) statistics, distribution
Summer Geometry Shape	Pupils should be taught to: <ul style="list-style-type: none"> Draw 2 -D 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. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. 	Measure and classify angles Calculate angles Vertically opposite angles Angles in a triangle Angles in a triangle – special cases Angles in a triangle – missing angles Angles in quadrilaterals Angles in polygons Circles Draw shapes accurately Nets of 3D shapes	rectangle (including square), rectangular, oblong rectilinear circle, circular triangle, triangular equilateral triangle, isosceles triangle, scalene triangle pentagon, pentagonal hexagon, hexagonal heptagon octagon, octagonal quadrilateral parallelogram, rhombus, trapezium, kite polygon right-angled parallel, perpendicular x- axis, y-axis, quadrant face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere, spherical cone cylinder, cylindrical prism, triangular prism tetrahedron, polyhedron octahedron dodecahedron net, open, closed
Summer Geometry Position and direction	Pupils should be taught to: <ul style="list-style-type: none"> Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. 	Coordinates in the first quadrant Coordinate in four quadrants Translations Reflections	clockwise, anticlockwise compass point north, south, east, west, N, S, E, W north-east, north- west, south-east, south-west, NE, NW, SE, SW horizontal, vertical, diagonal translate, translation coordinate movement slide roll turn stretch, bend whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle acute angle obtuse angle reflex angle reflection straight line ruler, set square angle measurer, compass, protractor

