Newcomen Primary School Maths Map

NEWCOMEN

Yr	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	Number –Place Value Place value to 100. Counting forwards and backwards in ones. Identify one more/less. Identify and learn number bonds to 10 and 20.	Number – Multiplication Calculate using arrays and pictorial representations.	Number – Place Value 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.	Geometry – Position and Direction Describe position, direction and movement. Turns in both directions and relate clockwise with movement on a clock face.	Number – Place Value Recognise odd and even numbers. Count in multiples of 2, 5 and 10.	Measurement Measure and record mass, weight, capacity, volume and time. compare, describe and solve practical problems involving measures by including related vocabulary.
	Number –Place Value Place value recognition and ordering. Read and write numbers to 100 in numbers. Read and write numbers from 1-20 in words.	Number -Multiplication and Division Calculate x and divide using objects, arrays and pictorial representations.	Number – Addition and Subtraction Add and subtract one and two digit numbers to 20 including zero.	Number – Fractions Recognise ¼ of shapes. Recognise ½ shapes and lengths.	Number – Addition and Subtraction Solve one and two step problems including finding missing numbers.	Geometry – Properties of Shape Recognise and name common 2D and 3D shapes, in different orientations, sizes, spot these shapes around everyday life.
	Number – Addition and Subtraction Represent and use the number bonds and related subtraction facts within 20. Know the language for +, -and =.	Number – Fractions Recognise ½ and ¼ as 2 equal parts using objects.	Number – Addition and Subtraction Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.	Number – Fractions Find ¼ of shapes, objects and quantities, linking to sharing.	Number -Multiplication and Division Solve one step problems involving multiplication and division.	Number – Addition and Subtraction Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. Recognise relationship of +/- as the inverse. 10-9=1 1+9=10
	Number – Addition and Subtraction Represent and use the number bonds and related subtraction facts within 20. Know the language for +, -and =.	Measurement – Money Recognise and know the value of different denominations of coins and notes.	Number -Multiplication and Division Doubling of numbers and quantities. Make connections between arrays, number patterns, and counting in 2's, 5's and 10's.	Measurement Know standard units of measuring and relate to equipment used to measure. Become familiar with standard measuring tools such as a ruler, weighing scales and containers.	Number – Fractions Recognise and combine ¼'s to make ½ and wholes of shapes and quantities.	Number -Multiplication and Division 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, using agreed formal written methods.
	Geometry – Properties of Space Recognise and name common 2D and 3D shapes.	Measurement - Time Sequence events in chronological order using language (next, morning, yesterday, tomorrow, etc.).	Number -Multiplication and Division 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.	Measurement - Time Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Use language of time throughout the day, including hands and face.	Number – Fractions Use knowledge of fractions to solve problems using shapes, objects and quantities. i.e. finding a half of a length.	Measurement – Money Recognise and know the value of different denominations of coins and notes.
	Geometry – Position and Direction To know and use the vocabulary related t position – middle, top, in front, above, near, close, etc.	Measurement – Time Recognise and use the language related to dates, including days, weeks, months, years. Know months of the year, date facts and vocabulary	Geometry – Position and Direction Describe position, direction and movement including whole, ½, ¼ and ¾ turns.	Number – Fractions Recognise ½ and ¼ as 2 equal parts using objects, shapes and quantity.	Measurement Begin to record and measure lengths and heights using standard and non-standard units to compare.	Number – Place Value Create number patterns. Describe, continue and create shape, number and object patterns.

Yr	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2	**Number - Number and Place Value** - Recognise place value of 2-digit numbers. - Count forward and back in steps of 2, 3 and 5 starting from 0 and from any number. Ongoing throughout the year. **Number - Number and Place Value** - Recognise the place value of each digit in a two digit numbers (tens, ones) Identify, represent and estimate numbers using different representations, including a number line.	**Number – Multiplication and Division** - Recall and use multiplication and division facts for the 2, 5 and 10 times tables , including recognising odd and even numbers.	**Number –Addition and Subtraction** - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing numbers. Solve problems with addition and subtraction.	**Fractions** - Write simple fractions eg ½ of 6 = 3 and recognise equivalence of 2/4 and ½	**Geometry –Properties of shape** - Identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid. - Sort and compare everyday common 2-D and 3-D shapes	**Number –Addition and Subtraction** - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing numbers. - Solve problems with addition and subtraction.
	Number – Place value - To read and write numbers to at least 100 in numerals and in words. - Use place value and number facts to solve problems.	**Number – Multiplication and Division** - Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=)	**Number- Multiplication and Division** - Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. - Solve problems involving multiplication and division using and array.	**Measurement** - 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.	**Geometry- Position and direction** - Use mathematical vocabulary to describe position, direction and movement between rotation as a turn and in terms of right angles for quarter and half and three quarter turns (clockwise and anti-clockwise); and movement in straight lines.	**Number- Multiplication and Division** - Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. - Solve problems involving multiplication and division using and array.
	Number –Addition and Subtraction - Recall number facts to 20 for 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	**Fractions** - Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a shape and a set of objects.	**Measurement** 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 measuring vessels.	**Measurement** - Solve simple problems in practical context involving addition and subtraction of money of the same unit, including giving change.	**Measurement** - Compare and order lengths, mass, volume/ capacity and record the results using >, < and =	**Number – Multiplication and Division** - Solve problems involving multiplication and division , using materials, arrays, repeated addition , mental methods and multiplication and division facts, including problems in context.
	Number-Addition and Subtraction - 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	**Fractions** - Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length or a quantity.	**Measurement- Time** - Compare and sequence intervals of time. - Tell and write the time including quarter past/to and to draw hands on a clock face to show these times.	**Fractions** - Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length or a quantity. - Write simple fractions eg ½ of 6 = 3 and recognise equivalence of 2/4 and ½	**Measurement** -They become fluent in counting and recognising coins. They read and say amounts of money confidently and use the symbols £ and p accurately, recording pounds and pence separately.	**Measurement** - 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 measuring vessels.
	Geometry –Properties of shape - identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	**Number - Number and Place Value** - Recognise the place value of each digit in a two digit numbers (tens, ones) Identify, represent and estimate numbers using different representations, including a number line.	**Measurement- Time** - Tell and write the time to five minute intervals and draw hands on a clock face to show these times. -Pupils become fluent in telling the time on analogue clocks and recording it.	**Number- Addition and subtraction** - Solve problems with addition and subtraction linked to numbers and a variety of different measures.	**Statistics** - Interpret and construct simple block diagrams and simple tables. -Ask and answer questions about totalling and comparing categorical data.	**Measurement** - Solve simple problems in practical context involving addition and subtraction of money of the same unit, including giving change.
	Geometry- Properties of Shape - Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.	**Number – Place Value** - Compare and order numbers from 0 up to 100; use <, >, and = signs. **Number –Addition and Subtraction** - Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	**Geometry- Position and direction** - Order and arrange combinations of mathematical objects in patterns.	**Number – Multiplication and Division** - Solve problems involving multiplication and division , using materials, arrays, repeated addition , mental methods and multiplication and division facts, including problems in context.	**Statistics** - Interpret and construct simple pictograms and tally charts. - Ask and answer questions by counting the number of objects and sorting the categories by quantity.	**Statistics** - Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. - Ask and answer questions about totalling and comparing categorical data.

Yr	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
3	Number - Number and Place Value - count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number - recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) - compare and order numbers up to 1,000	Measure - Perimeter and Area -measure the perimeter of simple 2-D shapes - find the area of rectilinear shapes by counting squares	Number - Number and Place Value - compare and order numbers up to 1,000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1,000 in numerals and in words - solve number problems and practical problems involving these ideas	Measure - Time - 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, am/pm, morning, afternoon, noon and midnight	Number - Number and Place Value - compare and order numbers up to 1,000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1,000 in numerals and in words - solve number problems and practical problems involving these ideas	Measure - Area and Perimeter - measure the perimeter of simple 2-D shapes
	Number – Addition - add numbers mentally, including: a three-digit number and 1s, a three-digit number and 10s, a three-digit number and 100s - add numbers with up to 3 digits, using formal written methods of columnar addition. - Estimate the answer to a calculation and use inverse operations to check answers	Measure – Time - 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, am/pm, 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	Number - Addition and Subtraction - add and subtract numbers with up to 3 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 - add and subtract amounts of money to give change, using both £ and p in practical contexts	Measure - Perimeter and Area -measure the perimeter of simple 2-D shapes - find the area of rectilinear shapes by counting squares	Number - Addition and Subtraction - add and subtract numbers with up to 3 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	Measure - Time - 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, am/pm, 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
	Number – Subtraction - Subtract numbers mentally, including: a three-digit number and 1s, a three-digit number and 10s, a three-digit number and 100s - Subtract numbers with up to 3 digits, using formal written methods of columnar addition. - estimate the answer to a calculation and use inverse operations to check answers	Geometry - Properties of Shape - draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them - recognise angles as a property of shape or a description of a turn	Number – Multiplication - 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 that 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 objects	Geometry - Properties of Shape - recognise angles as a property of shape or a description of a turn - identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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	Number - Multiplication and Division - 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 that 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 objects	Geometry - Properties of Shape - recognise angles as a property of shape or a description of a turn - identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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
	Number- Multiplication and Division - 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 that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	Geometry - Position and Direction - identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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	Number – Division - 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 that 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 objects	Geometry - Position and Direction - recognise angles as a property of shape or a description of a turn - identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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	Number - Fractions and Decimals - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole [for example, + =] compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above	Geometry - Position and Direction - recognise angles as a property of shape or a description of a turn - identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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
	Number – Fractions - count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	Statistics - Interpret and Present - 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	Number - Fractions and Decimals - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole [for example, + =] - compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above	Statistics - Interpret and Present - 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	Number - Fractions and Decimals -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 - recognise and write decimal equivalents of any number of tenths or hundreds - 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 - solve simple measure and money problems involving fractions and decimals to 2 decimal places	Statistics - Interpret and Present - 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
	Measure - Units of Measure - measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Statistics - Solve Compare - 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	Measure - Units of Measure - measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) - add and subtract amounts of money to give change, using both £ and p in practical contexts	Statistics - Solve Compare - 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	Measure - Units of Measure - measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) - add and subtract amounts of money to give change, using both £ and p in practical contexts	Statistics - Solve Compare - 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

Yr	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
4	Number - Number and Place Value - 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	Measure - Perimeter and Area -measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - find the area of rectilinear shapes by counting squares	Number - Number and Place Value - identify, represent and estimate numbers using different representations	Measure - Perimeter and Area -measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - find the area of rectilinear shapes by counting squares	Number - Number and Place Value - 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	Measure - Area and Perimeter - measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - find the area of rectilinear shapes by counting squares
	Number – Addition - 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	Geometry - Position and Direction - describe positions on a 2-D grid as coordinates in the first quadrant	Number - Addition and Subtraction - add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Measure - Time - 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	Number - Addition and Subtraction - add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Measure - Time -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
	Number – Subtraction - 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	Measure – Time - 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	Number - Multiplication - 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	Geometry - Properties of Shape - identify acute and obtuse angles and compare and order angles up to 2 right angles by size	Number - Multiplication and Division - 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	Geometry - Properties of Shape - 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
	Number- Multiplication and Division - 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 - multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Statistics - Interpret and Present interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	Number – Division - 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	Geometry - Position and Direction - describe movements between positions as translations of a given unit to the left/right and up/down	Number - Fractions and Decimals - 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	Geometry - Position and Direction - plot specified points and draw sides to complete a given polygon
	Number - Fractions - 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	Statistics - Solve Compare - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Number - Fractions and Decimals - add and subtract fractions with the same denominator - recognise and write decimal equivalents of any number of tenths or hundreds - recognise and write decimal equivalents to ½, ¼ and 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	Statistics - Interpret and Present - interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	Number - Fractions and Decimals - 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 - recognise and write decimal equivalents of any number of tenths or hundreds - 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 - solve simple measure and money problems involving fractions and decimals to 2 decimal places	Statistics - Interpret and Present - interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
	Measure - Units of Measure - convert between different units of measure [for example, kilometre to metre; hour to minute]	Geometry - Properties of Shape - compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Measure - Units of Measure - convert between different units of measure [for example, kilometre to metre; hour to minute]	Statistics - Solve Compare - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Measure - Units of Measure - convert between different units of measure [for example, kilometre to metre; hour to minute]	Statistics - Solve Compare - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	**Number and Place Value** • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	**Fractions continued** • recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal	**Number and Place Value** • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals • Prior concepts revisited and reinforced	**Fractions continued** • 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, + = = 1] • Prior concepts revisited and reinforced	**Number and Place Value** • Prior concepts revisited and reinforced	**Fractions continued** • solve problems involving number up to three decimal places • solve problems which require knowing percentage and decimal equivalents of , , , , and those fractions with a denominator of a multiple of 10 or 25 • Prior concepts revisited and reinforced
2		**Measure** • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²)		**Measure** • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling • Prior concepts revisited and reinforced		**Measure** • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • estimate the area of irregular shapes • estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] • solve problems involving converting between units of time • Prior concepts revisited and reinforced
3	**Addition and Subtraction** • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers		**Addition and Subtraction** • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Prior concepts revisited and reinforced		**Addition and Subtraction** • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Prior concepts revisited and reinforced	
4	**Multiplication and Division** • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • recall prime numbers up to 19 • multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • 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 • recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³	**Geometry – Shape** • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • identify: • angles at a point and one whole turn (total 360º) • angles at a point on a straight line and a turn (total 180º) • other multiples of 90º	**Multiplication and Division** • establish whether a number up to 100 is prime and • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Prior concepts revisited and reinforced	**Geometry – Shape** • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (º) • Prior concepts revisited and reinforced	**Multiplication and Division** • multiply and divide numbers mentally drawing upon known facts • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Prior concepts revisited and reinforced	**Geometry – Shape** • 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. • Prior concepts revisited and reinforced
5		**Geometry – Properties and direction** • 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		**Geometry – Properties and direction** • Prior concepts revisited and reinforced		**Geometry – Properties and direction** • Prior concepts revisited and reinforced
6	**Fractions** • compare and order fractions whose denominators are all multiples of the same number • add and subtract fractions with the same denominator and denominators that are multiples of the same number • read and write decimal numbers as fractions [for example, 0.71 =]	**Statistics** • complete, read and interpret information in tables, including timetables.	**Fractions** • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	**Statistics** • solve comparison, sum and difference problems using information presented in a line graph • Prior concepts revisited and reinforced	**Fractions** • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places	**Statistics** • Prior concepts revisited and reinforced

6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	**Number and Place Value** • 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	**Ratio/Algebra** • 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 the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • use simple formula	**Number and Place Value** • Prior concepts revisited and reinforced	**Ratio/Algebra** • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. • Prior concepts revisited and reinforced	**Number and Place Value** • solve number and practical problems that involve all of the above • Prior concepts revisited and reinforced	**Ratio/Algebra** • solve problems involving similar shapes where the scale factor is known or can be found • 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. • Prior concepts revisited and reinforced
2		**Measurements** • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles		**Measurements** • convert between miles and kilometres • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]. • Prior concepts revisited and reinforced		**Measurements** • recognise that shapes with the same areas can have different perimeters and vice versa • Prior concepts revisited and reinforced
3	**Addition and Subtraction Multiplication and Division** • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context		**Addition and Subtraction Multiplication and Division** • interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for 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 addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Prior concepts revisited and reinforced		**Addition and Subtraction Multiplication and Division** • solve problems involving addition, subtraction, multiplication and division • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Prior concepts revisited and reinforced	
4		**Geometry – properties of shape** • draw 2-D shapes using given dimensions and angles • recognise, describe and build simple 3-D shapes, including making nets		**Geometry – properties of shape** • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • Prior concepts revisited and reinforced		**Geometry – properties of shape** • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Prior concepts revisited and reinforced
5	**Fractions** • 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 • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, × =]	**Geometry – properties of direction** • describe positions on the full coordinate grid (all four quadrants)	**Fractions** • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,] • identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places • multiply one-digit numbers with up to two decimal places by whole numbers • Prior concepts revisited and reinforced	**Geometry – properties of direction** • draw and translate simple shapes on the coordinate plane, and reflect them in the axes. • Prior concepts revisited and reinforced	**Fractions** • use written division methods in cases where the answer has up to two decimal places • solve problems which require answers to be rounded to specified degrees of accuracy • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • Prior concepts revisited and reinforced	**Geometry – properties of direction** • Prior concepts revisited and reinforced
6	• divide proper fractions by whole numbers [for example, ÷ 2 =]	**Statistics** • calculate and interpret the mean as an average.		**Statistics** • Prior concepts revisited and reinforced		**Statistics** • interpret and construct pie charts and line graphs and use these to solve problems