	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. 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. Read and write numbers to at least 100 in numerals and in words. **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to apply their knowledge of numbers to reason and solve problems that emphasise the value of each digit in two-digit numbers. Pupils will have an understanding that zero is a place holder.**	Count from 0 in multiples of 4, 8, 50 and 100. Recognise the place value of each digit in a three-digit number (hundreds, tens and ones). Find 10 or 100 more or less than a given number. Compare and order numbers up to 1000. Identify, represent and estimate numbers using different representations. Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. **Knowledge: Pupils should be able to apply their knowledge to larger numbers up to 1000 and apply theory knowledge of place value to order numbers up to 1000.** **They should build on their knowledge from Year 2 through increasingly complex problems involving 3 digit numbers. This knowledge will be applied through a variety of representations including measures.**	Count in multiples of 6, 7, 9, 25 and 1000. Find 1000 more or less than a given number. Round any number to the nearest 10, 100 or 1000. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens, and ones). Order and compare numbers beyond 1000. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. **Knowledge: Pupils should be able to order numbers beyond 1000.** **They should be able to connect estimation and rounding numbers to the use of measuring instruments.** **Pupils understand that there have been different ways to write whole numbers and that the important concepts of zero and place value were introduced over a period of time; using roman numerals.**	Read, write numbers to at least 1 000 000 Determine the value of each digit to at least 1 000 000 Order & compare numbers to at least 1 000 000. Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Interpret negative numbers in context. Count forwards and backwards with positive and negative whole numbers, including through zero. Round any number up to 1 000 000 to the nearest 10 000 and 100 000 Solve number problems and practical problems that involve all of the above. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. **Knowledge: Pupils should be able to identify the place value in large whole numbers, continuing to use number in context; including measurement.** **Pupils should extend and apply their understanding of the number system to the decimal numbers and**	Read, write, order and compare numbers up to 10 000 000. Determine the value of each digit for numbers up to 10 000 000. Round any whole number up to 10 000 000 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. **Knowledge: Pupils should be able to use the whole number system, including saying, reading and writing numbers accurately.**

				fractions. As well as recognising and describing linear number sequences.	
Addition & Subtraction	Solve problems with addition and subtraction: using concrete objects and pictorial representations; applying their increasing knowledge of mental and written methods. Recall and use add and subtract 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 2-digit no and 1s or 10s; two 2-digit numbers; adding three 1-digit numbers. Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. **Knowledge: pupils should be coming up to Year 3 with from Infant school:** **Pupils should be able to apply mathematical language of addition and subtraction. They should be able to use their knowledge to derive number bond facts such as 3 + 7 =10, 10-7 =3 and 7=10-3 to calculate 30 + 70 = 100. Applying the communicative and associative knowledge of addition. They will have an**	Add and subtract numbers mentally, including: a 3-digit no and 1s, 10s, 100s. Add numbers with up to 3 digits, using formal written methods of columnar addition. Subtract numbers with up to 3 digits, using formal written methods of columnar 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/subtract**.** **Knowledge: Pupils should be able to apply their knowledge of addition and subtraction to solve mental calculations of numbers involving 2 digit numbers.** **They will apply their knowledge of place value when using the column method to add and subtract numbers up to 3 digits.**	Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate. Subtract numbers with up to 4 digits using the formal written methods of columnar 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. **Knowledge: Pupils should be able to apply their knowledge of both mental methods and columnar addition and subtraction with increasingly large numbers.**	Add whole numbers with more than 4 digits, including using formal written methods. Subtract whole numbers with more than 4 digits, including using formal written methods. Add numbers mentally with increasingly large numbers. Subtract numbers mentally with increasingly large numbers. Use rounding to check answers to calculations and levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Knowledge: Pupils should be able to use the formal written methods of columnar addition and subtraction with increasingly large numbers.** **They will practise mental calculations with increasingly large numbers.**	Solve problems involving addition and subtraction. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Knowledge: Pupils should be able to add and subtract using the formal written methods of columnar addition and subtraction,** **They will undertake mental calculations with increasingly large numbers and more complex calculations.** **Pupils round answers to a specified degree of accuracy.**

	understanding of formal written methods with larger numbers.				
Multiplication & Division	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. 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 materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to connect the 10 multiplication table to place value, and the 5 multiplication table to the divisions on a clock face. They can apply their knowledge to grouping and sharing, to arrays and to repeated addition.**	Recall and use multiplication facts for the 3, 4 and 8 multiplication tables. Recall and use division facts for the 3, 4 and 8 multiplication tables. Write and calculate math statements for x using the tables they know, including 2-digit numbers times 1-digit numbers, using mental and formal written methods. Write and calculate math statements for ÷ using the tables they know, including 2-digit numbers divided by 1-digit numbers, using mental and formal written methods. Solve problems and missing number problems, involving x and ÷, including integer scaling problems and correspondence problems in which n objects are connected to m objects. **Knowledge: Pupils should be able to apply their knowledge of multiplication and division to solve mental calculations of numbers involving 2 digit numbers.** **They will apply their knowledge of place value when using the column method to multiply and divide numbers up to 2 digits.** **They will apply their knowledge to solve simple problems in contexts using reliable written methods.**	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 numbers by a one-digit number using formal written layout. Multiply 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 2 digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. **Knowledge: Pupils should be able to recall and use multiplication tables and related division facts.** **Pupils should be able to extend this to three-digit numbers. Pupils should be able to write statements about the equality of expressions.** **They will combine their knowledge of number facts and**	Identify multiple 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. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method. Multiply and divide numbers mentally drawing upon known facts. Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Recognise and use square numbers and cube numbers, and the notation for squared and cubed. Solve problems involving multiplication and division including their knowledge of factors and multiples, square and cubes. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	Multiply numbers up to 4 digits by a 2-digit whole 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. Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of short division, where appropriate and interpreting remainders. Perform mental calculations with mixed operations and large numbers. Identify common factors. Identify common multiples. Identify prime numbers. Solve problems involving multiplication and division. Use estimation to check answers to calculations and determine an appropriate degree of accuracy. Use knowledge of the order of operations to carry out calculations involving the four operations. **Knowledge: Pupils should be able to use multiplication and division for larger numbers, using the formal written methods of short**

			rules of arithmetic to solve mental and written calculations. **Pupils will solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers.**	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. **Knowledge: Pupils should be able to use the formal written methods of short multiplications and short division.** **They use and understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements** **Pupils interpret non-integer answers to division by expressing results in different ways according to the context.**	**and long multiplication, and short and long division.** **They will undertake mental calculations with increasingly large numbers and more complex calculations.** **Pupils will continue to use all the multiplication tables to calculate mathematical statements.** **Pupils will explore the order of operations using brackets; for example, 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9. Common factors can be related to finding equivalent fractions.**
Fractions	Recognise/find/name/write fractions ⅓, ¼, 2/4, ¾of a length, shape, set of objects or quantity. Write simple fractions e.g. ½of 6 = 3 and recognise the equivalence of 2/4 and ½. **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to apply their knowledge of fractions to measures, finding fractions of lengths. They should understand the concept of fractions as numbers and that they can add up to more than one.**	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 fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. 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.	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 a hundred and dividing tenths by ten. 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. Add fractions with the same denominator. Subtract fractions with the same denominator.	Compare and order fractions whose denominators are all multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other. Write mathematical statements > 1 as a mixed number. Add and subtract fractions with the same denominator and multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions below 1 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Multiply simple proper fractions and simplify the answer (e.g. ¼ x ½ =⅛). Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙). **Knowledge: Pupils should be able to use and understand the addition and subtraction of**

		Recognise and show, using diagrams, equivalent fractions with small denominators. Add fractions with the same denominator within one whole (e.g. $^5/_7 + {}^1/_7 = {}^6/_7$). Subtract fractions with the same denominator within one whole. Compare and order unit fractions, and fractions with the same denominators. Solve problems that involve al of the above. **Knowledge: Pupils should be able to apply their knowledge of tenths to place value and division by 10. Apply their knowledge to recognise fractions in different contexts.**	**Knowledge: Pupils should be able to connect tenths to place value, decimal measures and to division by 10. They understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence.** **Pupils should make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. Pupils use factors and multiples to recognise equivalent fractions and simplify where appropriate. They can count using simple fractions and decimals, both forwards and backwards.**	**Knowledge: Pupils should know that percentages, decimals and fractions are different ways of expressing proportions.** **Pupils will connect equivalent fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders and move from these to improper and mixed fractions.** **Pupils will connect multiplication by a fraction to using fractions as operators (fractions of), and to division.** **Pupils will be able to add and subtract fractions, count forwards and backwards in simple fractions.**	**fractions with different denominators by identifying equivalent fractions with the same denominator.** **Pupils will use a variety of images to support their understanding of multiplication with fractions.** **They will be able to calculate with simple fractions and decimal fraction equivalents.** **They will recognise division calculations as the inverse of multiplication.**
Decimals and Percentages		N/A	Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write the decimal equivalents to $^1/_4$, $^1/_2$ and three quarters. 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 one 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.	Read and write decimal numbers as fractions (e.g. 0.72 = $^{72}/_{100}$). Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places. Solve problems involving number up to three decimal places. Recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred'.	Identify the value of each digit to three decimal places Multiply numbers by 10, 100 and 1000 where the answers are up to three decimal places. Divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Multiply one-digit numbers with up to two decimal places by whole numbers. Use written division methods in cases where the answer has up to two decimal places. Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)

			Knowledge: Pupils should be able to use decimal notation and the language associated with it. They make comparisons and order decimal amounts and quantities. They will be able to represent numbers with one or two decimal places in several ways, such as on number lines.	Write percentages as a fraction and a decimal. Solve problems which require knowing percentage and decimal equivalents of ½, ¼, ⅕, ⅖, ⅘. Solve problems with a denominator of a multiple of 10 or 25. **Knowledge: Pupils will say, read and write decimal fractions and related tenths, hundredths and thousandths accurately. They mentally add and subtract tenths, and one-digit whole numbers and tenths. Pupils should be able to make connections between percentages, fractions and decimals.**	Solve problems which require answers to be rounded to a specified degree of accuracy. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Knowledge: Pupils should be able to multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers.** **Pupils should multiply decimals by whole numbers in practical contexts.** **Pupils will begin to understand the division of decimal numbers by one-digit whole number, in practical contexts.** **Pupils will develop their skills of rounding and estimating as a means of predicting and checking their answers to decimal calculations.**
Measurement	Choose/use appropriate stand units to estimate/measure length/height (m/cm); mass (kg/g); temp (°C); cap (litres/ml) to nearest unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and = Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular	Measure: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Compare: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Measure the perimeter of simple 2-D shapes.	Convert between different units of measure (e.g. kilometre to metre; hour to minute). Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days). Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Convert between different units of metric measure (e.g. km & m; cm & m; cm & mm; g & kg; l & ml). Use approx. equivalences between metric and imperial units (e.g. inches, pounds & pints). Measure & calculate the perimeter of composite rectilinear shapes in cm/m. Calculate and compare the area of squares/rectangles using standard units, square cm/m.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Use, read, write & convert between standard units of measure, converting length, mass & volume from smaller to larger units, and vice versa, using decimal notation to up to 3 decimal places. Convert between miles and kilometres.

	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. Compare and sequence intervals of time. Know the number of minutes in an hour and the number of hours in a day. 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. **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to apply their knowledge of the number system to standard units of measure.** **They should be able to tell the time on analogue clocks and read and say amounts of money confidently.**	Add and subtract amounts of money to give change, using both £ and p in practical contexts. Tell and write the time from an analogue clock, including 12-hr/24-hr clocks. Tell and write the time from an analogue clock, including Roman numerals from I to XII. Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms if seconds and hours; use vocabulary (o'clock, am/pm, morning afternoon, noon, midnight) Know the number of seconds in a minute Know the number of days in each month, year and leap year. Compare the duration of events. **Knowledge: Pupils should be able to apply their knowledge of multiplication to compare measures including simple scaling.** **They should apply their knowledge of addition, subtraction to add and subtract mixed units and find the change using manageable amounts.**	Find the area of rectilinear shapes by counting squares. Estimate, compare and calculate different measures, including money in pounds and pence. Read time between analogue and digital, 12 and 24-hour clocks. Write time between analogue and digital, 12 and 24-hour clocks. Convert time between analogue and digital, 12 and 24-hour clocks. **Knowledge: Pupils should be able to record metric measures, including money. They should use multiplications to convert from larger to smaller units.** **They should relate area to arrays and multiplication.**	Estimate the area of irregular shapes. Estimate volume (e.g. using 1 cm blocks to build cubes/cuboids) and capacity (e.g. using water). Solve problems involving converting between units of time. Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. **Knowledge: Pupils should be able to use their knowledge of place value and multiplication and division to convert between standard units.** **Pupils will calculate the perimeter of rectangles and related composite shapes; including using the relations of perimeter or area to find unknown lengths.** **Pupils will calculate the area from scale drawings using given measurements.** **Pupils will use all four operations in problems involving time and money, including conversions.**	Recognise that shapes with the same areas can have different perimeters and vice versa. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^2) and cubic metres (m^3), and extending to other units. **Knowledge: Pupils should be able to connect conversion to a graphical representation. They know approximate conversions and are able to tell if an answer is sensible.** **Using the number line, pupils use, add and subtract positive and negative integers for measures.** **They relate the area of rectangles to parallelograms and triangles, and calculate their areas, understanding and using the formulae.**
Geometry Properties of shape	Identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line. Identify and describe the properties of 3D shapes, inc the no. of edges, vertices and faces.	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.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify acute and obtuse angles. Compare and order angles up to two right angles by size.	Identify 3D shapes, including cubes and other cuboids, from 2D representations. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets

	Identify 2D shapes on the surface of 3D shapes, e.g. circle on a cylinder; a triangle on a pyramid. Compare and sort common 2D and 3D shapes and everyday objects. Order and arrange combinations of mathematical objects in patterns and sequences. Use math vocab to describe position, direction& movement in movement in a straight line and distinguishing rotation as a turn & in terms of right angles for ¼, ½, &¾ turns (clock/anti-clockwise). **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to apply their knowledge to name, identify and compare a range of 2D and 3D shapes including quadrilaterals, polygons, cuboids, prisms and cones.**	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. Identify pairs of perpendicular and parallel lines. **Knowledge: Pupils should be able to apply their knowledge of shapes to angles and their knowledge of measure to measure lengths of shapes.**	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. **Knowledge: Pupils should be able to classify shapes using geometrical properties, extending to classifying different triangles and quadrilaterals.** **Pupils should be able to compare and order angles.** **Pupils should be able to draw symmetric patterns using a variety of media.**	Draw given angles, and measure them in degrees. Identify: angles at a point and one whole turn (total 360^0); angles at a point on a straight line and ½ a turn (total 180^0); other multiples of 90^0. 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. **Knowledge: Pupils should be able to draw lines with a ruler to the nearest millimetre, and measuring with a protractor; with accuracy. They will use conventional markings for parallel lines and right angles.** **Pupils will use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals.** **Pupils will use angle sum facts and other properties to make deductions about missing angles.**	Compare and classify geometric shapes based on their properties and sizes Find unknown angles in any triangles, quadrilaterals, and regular polygons. Illustrate and name parts of circles, including radius, diameter and circumference. Know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite. Find missing angles. **Knowledge: Pupils should be able to draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.** **Pupils should describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements.**
Geometry Position and Direction		N/A	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. **Knowledge: Pupils should be able to draw a pair of axes in one**	Identify and describe the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed. Represent the position of a shape following a reflection or translation. **Knowledge: Pupils should be able to recognise and use reflection and translation in a variety of**	Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane. Reflect simple shapes on the coordinate plane in the axes. **Knowledge: Pupils should be able to draw and label a pair of axes in**

			quadrant, with equal scales and integer labels. They will read, write and use pairs of coordinates.	**diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant.** **They will reflect in lines that are parallel to the axes.**	**all four quadrants with equal scaling.** **Pupils should draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes.**
Statistics	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. **Knowledge: pupils should be coming up to Year 3 from Infant school:** **Pupils should be able to apply their knowledge to collate, interpret and organise information.**	Interpret data using bar charts, pictograms and tables. Present data using bar charts, pictograms and tables. Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables. **Knowledge: Pupils should be able to apply their knowledge of pictograms to use simple scales and interpret data presented in many contexts.**	Interpret discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. 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. **Knowledge: Pupils should be able to use a greater range of scales in their representations.** **Pupils will begin to relate the graphical representation of data to recording change over time.**	Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables, including timetables. **Knowledge: Pupils should be able to connect their work on coordinates and scales to their interpretation of time graphs.**	Interpret pie charts and line graphs. Construct pie charts and line graphs. Use pie charts and line graphs to solve problems. Calculate and interpret the mean as an average. **Knowledge: Pupils should be able to connect their work on angles, fractions and percentages to the interpretation of pie charts.** **Pupils should both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.** **They should connect conversion from kilometres to miles in measurement to its graphical representation. Pupils should know when it is appropriate to find the mean of a data set.**
Ratio and proportion		N/A	N/A	N/A	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 (e.g. of

					measures) such as 15% of 360 and the use of percentages for comparison. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Knowledge: Pupils should be able to recognise proportionality in contexts when the relations between quantities are in the same ratio.** **Pupils should link percentages or 360° to calculating angles of pie charts.** **Pupils should consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. Pupils will also solve problems involving unequal quantities.**
Algebra		N/A	N/A	N/A	Use simple formulae. Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables.

					Knowledge: Pupils should be able to use symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as: missing numbers, lengths, coordinates and angles; formulae in mathematics and science; equivalent expressions; generalisations of number patterns and number puzzles.