	Year 4 Maths							
	Measures	**Geometry: Properties of shapes**	**Geometry - Position**	**Statistics**	**Number and Place Value**	**Addition and Subtraction**	**Multiplication and Division**	**Fractions**
Expected (at national standard)	❑ Convert between different units of measure [for example, kilometre to metre; hour to minute] ❑ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. ❑ Find the area of rectilinear shapes by counting squares. ❑ Estimate, compare and calculate different measures, including money in pounds and pence. ❑ 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.	❑ 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 two 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.	❑ 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	❑ 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.	❑ Count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number. ❑ Count backwards through zero to include negative numbers. ❑ Recognise the place value of each digit in a four-digit number. ❑ Order and compare numbers beyond 1000. ❑ Identify, represent and estimate numbers using different representations. ❑ Round any number to the nearest 10, 100 or 1000. ❑ 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 zero and place value.	❑ 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.	❑ Recall X and ÷ facts for 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 three 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to *m* objects.	❑ Recognise & show, using diagrams, families of common equivalent fractions count up & down in hundredths; recognise that hundredths arise when dividing an object by one hundred & dividing tenths by ten. ❑ Solve problems involving increasingly harder fractions to calculate quantities, & fractions to divide quantities, including non-unit fractions where the answer is a whole number. ❑ + and - fractions with same denominator. ❑ Recognise and write decimal equivalents of any number of tenths or hundredths. ❑ Recognise & write decimal equivalents to ¼, ½, ¾. ❑ 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 & 100ths. ❑ Round decimals with one decimal place to the nearest whole number. ❑ Compare numbers with the same number of decimal places up to 2dps. ❑ Solve simple measure and money problems involving fractions and decimals to two decimal places.
Emerging	❑ Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). ❑ Measure the perimeter of simple 2-D shapes. ❑ Add and subtract amounts of money to give change, using both £ and p in practical contexts. ❑ Tell & write the time from an analogue clock, including using Roman numerals from I to XII, + 12-hour & 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 & leap year. ❑ Compare durations of events [e.g. to calculate the time taken by particular events or tasks].	❑ 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. ❑ 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.	❑ Use mathematical vocabulary to describe position, direction and movement including 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 anti-clockwise).	❑ 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.	❑ 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 three-digit number (hundreds, tens, ones). ❑ 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.	❑ Add & subtract numbers mentally, including: a 3-digit number and ones, a 3-digit number & tens, a 3-digit number & 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 & subtraction.	❑ 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.	❑ 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. ❑ Recognise and show, using diagrams, equivalent fractions with small denominator. ❑ Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]. ❑ Compare and order unit fractions, and fractions with the same denominators. ❑ Solve problems that involve all of the above.

	Measures	Geometry: Properties of shapes	Geometry - Position	Statistics	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions
Exceeding	❑ Convert fluently and efficiently between different units of measures and be able to reason about the multiplicative relationship between related measures. ❑ Use their understanding of the concepts related to measures to solve increasingly complex problems. ❑ Make connections to other areas of mathematics such as fractions, decimals and use this to solve problems. ❑ Communicate reasoning and talk about mathematics using appropriate language. ❑ Apply knowledge of measures to other areas of the curriculum e.g. science.	❑ Sort and classify shapes using a range of criterion using mathematically appropriate vocabulary. ❑ Apply knowledge of shapes to solving problems with increasing complexity explaining reasoning. ❑ Make links and connections with other areas of the curriculum.	❑ Solve increasingly complex problems involving position and movement. ❑ Apply knowledge and understanding of position and movement to other curriculum areas such as geography and science.	❑ Use knowledge of data handling to pose hypothesis and answer questions through the analysis and interpretation of data. ❑ Draw conclusions based on data and be able to justify reasoning.	❑ Demonstrate very good understanding of place value and is able to apply this to working with larger numbers/decimals. ❑ Demonstrate confidence to use knowledge of place value in solving problems. ❑ Apply their understanding to solving increasingly complex problems, is able to reason and explain their thinking.	❑ Demonstrate rapid recall of number facts & is able to use these fluently to generalise to obtain new facts. ❑ Show a wide repertoire of reliable & efficient of calculation strategies, both written & mental, that they are able to apply when solving problems ❑ Make choices regarding choice of strategies and explain reasoning. ❑ Solve problems of increasingly complexity using a range of strategies & is able to communicate their reasoning.	❑ Demonstrate rapid and fluent recall of all x facts to 12 x 12 and is able to use their knowledge to generate new facts. ❑ Show a clear understanding of the different structures of multiplication and division and the related vocabulary. ❑ Demonstrate a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems. ❑ Solve problems of increasingly complexity using a range of strategies and is able to communicate their reasoning.	❑Apply knowledge of fractions to problems involving measures and shapes. ❑Apply links with division to solving increasingly complex problems ❑Show a good understanding of the connections between fractions and decimals and is able to use their knowledge to translate between the two. ❑Apply their knowledge of fractions to problems of increasing complexity and to explain their reasoning and thinking.