Year 1- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y1 Pupils should be taught to:	★ count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number **1.1, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12** ★ count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens **1.1, 1.4, 1.6, 1.7, 1.8, 1.11, 1.13** ★ given a number, identify one more and one less **1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12** ★ 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 **1.1, 1.4, 1.6, 1.8, 1.11** ★ read and write numbers from 1 to 20 in numerals and words **1.11** ★ compare, describe and solve practical problems for: ★ lengths and heights [for example, long / short, longer / shorter, tall / short, double / half] **1.1, 1.4** ★ mass or weight [for example, heavy / light, heavier than, lighter than] **1.1, 1.4** ★ capacity / volume [for example, full / empty, more than, less than, half, half full, quarter] **1.1, 1.4** ★ time [for example, quicker, slower, earlier, later] **1.4** ★ recognise and use language relating to dates, including days of the week, weeks, months and years **1.1, 1.2, 1.4, 1.9** ★ sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] **1.2, 1.9, 1.11** ★ recognise and know the value of different denominations of coins and notes **1.6, 1.7, 1.8, 1.11, 1.13** ★ measure and begin to record the following: ★ lengths and heights **1.8, 1.11** ★ mass / weight **1.8, 1.11** ★ capacity and volume **1.8, 1.11** ★ time (hours, minutes, seconds) **1.11**	★ count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number **1.1, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12** ★ given a number, identify one more and one less **1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.11, 1.12** ★ read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs **1.9, 1.12** ★ represent and use number bonds and related subtraction facts within 20 **1.2, 1.5, 1.9, 1.12** ★ add and subtract one-digit and two-digit numbers to 20, including zero **1.9, 1.12** ★ solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ **1.2, 1.5, 1.9, 1.12** ★ recognise and use language relating to dates, including days of the week, weeks, months and years **1.1, 1.2, 1.4, 1.9** ★ sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] **1.2, 1.9, 1.11**	★ count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens **1.1, 1.4, 1.6, 1.7, 1.8, 1.11, 1.13** ★ 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 **1.7, 1.13** ★ recognise and know the value of different denominations of coins and notes **1.6, 1.7, 1.8, 1.11, 1.13** ★ recognise, find and name a half as one of two equal parts of an object, shape or quantity **1.13, 1.14** ★ recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **1.13, 1.14** ★ tell the time to the hour and half past the hour and draw the hands on a clock face to show these times **1.13**	★ recognise, find and name a half as one of two equal parts of an object, shape or quantity **1.13, 1.14** ★ recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **1.13, 1.14** ★ recognise and name common 2-D and 3-D shapes, including: ★ 2-D shapes [for example, rectangles (including squares), circles and triangles] **1.3, 1.10, 1.14** ★ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] **1.3, 1.10, 1.14** ★ describe position, direction and movement, including whole, half, quarter and three-quarter turns **1.3, 1.10, 1.14**

Year 2- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y2 Pupils should be taught to:	★ count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward **2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13** ★ recognise the place value of each digit in a two-digit number (tens, ones) **2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12** ★ identify, represent and estimate numbers using different representations, including the number line **2.1, 2.4, 2.8, 2.11** ★ compare and order numbers from 0 up to 100; use >, < and = signs **2.1, 2.4, 2.8, 2.11** ★ read and write numbers to at least 100 in numerals and in words **2.1, 2.4, 2.8, 2.11** ★ use place value and number facts to solve problems **2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12** ★ compare and order lengths, mass, volume / capacity and record the results using >, < and = **2.1, 2.4, 2.8, 2.11** ★ compare and sequence intervals of time **2.1, 2.4, 2.8, 2.11** ★ recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers **2.6, 2.7, 2.13** ★ choose and use appropriate standard units to estimate and measure length / height in any direction (m / cm); mass (kg / g); temperature (°C); capacity (litres / ml) to the nearest appropriate unit; using rulers, scales, thermometers and measuring vessels **2.8, 2.11** ★ interpret and construct simple pictograms, tally charts, block diagrams and simple tables **2.6, 2.11** ★ ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity **2.1, 2.4, 2.6, 2.11**	★ count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward **2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13** ★ recognise the place value of each digit in a two-digit number (tens, ones) **2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12** ★ use place value and number facts to solve problems **2.1, 2.2, 2.4, 2.5, 2.8, 2.9, 2.11, 2.12** ★ solve problems with addition and subtraction: ★ using concrete objects and pictorial representations, including those involving numbers, quantities and measures **2.2, 2.5, 2.9, 2.12** ★ applying their increasing knowledge of mental methods and written methods **2.2, 2.5, 2.9, 2.12** ★ recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 **2.2, 2.5, 2.9, 2.12** ★ add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ★ a two-digit number and ones ★ a two-digit number and tens ★ two two-digit numbers ★ adding three one-digit numbers **2.2, 2.5, 2.9, 2.12** ★ show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot **2.5, 2.9, 2.12** ★ recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **2.5, 2.9, 2.12** ★ recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value **2.5, 2.7, 2.9** ★ find different combinations of coins to equal the same amounts of money **2.5, 2.7, 2.9** ★ solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change **2.2, 2.5, 2.9** ★ ask and answer questions about totalling and comparing categorical data **2.2, 2.5, 2.9, 2.12**	★ count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward **2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.11, 2.12, 2.13** ★ recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers **2.6, 2.7, 2.13** ★ calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs **2.7, 2.13** ★ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot **2.7, 2.13** ★ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **2.7, 2.13** ★ recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value **2.5, 2.7, 2.9** ★ find different combinations of coins to equal the same amounts of money **2.5, 2.7, 2.9** ★ 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 **2.7, 2.13** ★ know the number of minutes in an hour and the number of hours in a day **2.7, 2.13** ★ recognise, find, name and write fractions ⅓, ¼, ¾ and ¾ of a length, shape, set of objects or quantity **2.13, 2.14** ★ write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of ¾ and ½ **2.13, 2.14**	★ recognise, find, name and write fractions ⅓, ¼, ¾ and ¾ of a length, shape, set of objects or quantity **2.13, 2.14** ★ write simple fractions for example ½ of 6 = 3 and recognise the equivalence of ¾ and ½ **2.13, 2.14** ★ identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line **2.3, 2.10, 2.14** ★ identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces **2.3, 2.10, 2.14** ★ identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] **2.3, 2.10, 2.14** ★ compare and sort common 2-D and 3-D shapes and everyday objects **2.3, 2.10, 2.14** ★ order and arrange combinations of mathematical objects in patterns and sequences **2.3, 2.10, 2.14** ★ 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) **2.3, 2.10, 2.14**

Year 3- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y3 Pupils should be taught to:	★ count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number **3.1, 3.3, 3.5, 3.8, 3.10, 3.13** ★ recognise the place value of each digit in a three-digit number (hundreds, tens, ones) **3.1, 3.5, 3.10** ★ compare and order numbers up to 1000 **3.1, 3.5, 3.10** ★ identify, represent and estimate numbers using different representations **3.1, 3.5, 3.7, 3.10, 3.12** ★ read and write numbers up to 1000 in numerals and in words **3.1, 3.5, 3.10** ★ solve number problems and practical problems involving these ideas **3.1, 3.5, 3.10** ★ count up and down in tenths, recognising that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 **3.5, 3.7, 3.8, 3.12, 3.13** ★ recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators **3.7, 3.12** ★ recognise and show, using diagrams, equivalent fractions with small denominators **3.12** ★ add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] **3.7, 3.12** ★ compare and order unit fractions and fractions with the same denominator **3.7, 3.12** ★ solve problems that involve all of the above (fractions) **3.7, 3.8, 3.12, 3.13** ★ tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks **3.5, 3.10** ★ 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 **3.10, 3.11** ★ know the number of seconds in a minute and the number of days in each month, year and leap year **3.10, 3.11, 3.13** ★ compare durations of events, [for example, to calculate the time taken by particular events or tasks] **3.10, 3.11**	★ add and subtract numbers mentally, including: ★ a three-digit number and ones ★ a three-digit number and tens ★ a three-digit number and hundreds **3.2, 3.6** ★ add and subtract numbers with up to three digits using formal written methods of columnar addition and subtraction **3.2, 3.6, 3.11** ★ estimate the answer to a calculation and use inverse operations to check answers **3.2, 3.6, 3.11** ★ solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **3.2, 3.6, 3.11** ★ measure, compare, add and subtract: lengths (m / cm / mm); mass (kg / g); volume / capacity (l / ml) **3.2, 3.6, 3.11** ★ add and subtract amounts of money to give change, using both £ and p in practical contexts **3.2, 3.6, 3.11** ★ interpret and present data using bar charts, pictograms and tables **3.2, 3.5, 3.6, 3.11** ★ 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 **3.2, 3.6, 3.11** ★ 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 **3.10, 3.11** ★ know the number of seconds in a minute and the number of days in each month, year and leap year **3.10, 3.11, 3.13** ★ compare durations of events, [for example, to calculate the time taken by particular events or tasks] **3.10, 3.11**	★ count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number **3.1, 3.3, 3.5, 3.8, 3.10, 3.13** ★ recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators **3.8, 3.13** ★ solve problems that involve all of the above (fractions) **3.7, 3.8, 3.12, 3.13** ★ recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables **3.3, 3.8, 3.13** ★ write and calculate mathematical statements for multiplication and division using the multiplication tables that students know, including for two-digit numbers times one-digit numbers using mental and progressing to formal written methods **3.3, 3.8, 3.13** ★ 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 **3.3, 3.8, 3.13** ★ 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 **3.5, 3.7, 3.8, 3.12 3.13** ★ know the number of seconds in a minute and the number of days in each month, year and leap year **3.10, 3.11, 3.13**	★ draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them **3.4, 3.9** ★ recognise that angles are a property of shape or a description of a turn **3.4, 3.9, 3.14** ★ 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 **3.4, 3.9, 3.14** ★ identify horizontal and vertical lines and pairs of perpendicular and parallel lines **3.9, 3.14** ★ measure the perimeter of simple 2-D shapes **3.14**

Year 4- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y4 Pupils should be taught to:	★ count in multiples of 6, 7, 9, 25 and 1000 **4.1, 4.3, 4.5, 4.8, 4.10, 4.13** ★ find 1000 more or less than a given number **4.1, 4.5, 4.10** ★ count backwards through zero to include negative numbers **4.5, 4.10** ★ recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) **4.1, 4.5, 4.10** ★ order and compare numbers beyond 1000 **4.1, 4.5, 4.10** ★ identify, represent and estimate numbers using different representations **4.1, 4.5, 4.10** ★ round any number to the nearest 10, 100 or 1000 **4.1, 4.5, 4.10** ★ solve number and practical problems that involve all of the above and with increasingly large positive numbers **4.1, 4.5, 4.10** ★ 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 **4.5** ★ recognise and show, using diagrams, families of common equivalent fractions **4.7, 4.12** ★ count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten **4.7, 4.12** ★ add and subtract fractions with the same denominator **4.7, 4.12** ★ recognise and write decimal equivalents of any number of tenths or hundredths **4.7, 4.12** ★ recognise and write decimal equivalents to ¼, ½, ¾ **4.7, 4.12** ★ 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 **4.7, 4.12** ★ round decimals with one decimal place to the nearest whole number **4.7, 4.12** ★ compare numbers with the same number of decimal places up to two decimal places **4.7, 4.12** ★ convert between different units of measure [for example, kilometre to metre, hour to minute] **4.7, 4.10, 4.12** ★ solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days **4.8, 4.10, 4.13** ★ read, write and convert time between analogue and digital 12 and 24-hour clocks **4.10**	★ add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate **4.2, 4.6, 4.11** ★ estimate and use inverse operations to check answers to a calculation **4.2, 4.6, 4.11** ★ solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why **4.2, 4.6, 4.11** ★ estimate, compare and calculate different measures, including money in pounds and pence **4.2, 4.6, 4.11** ★ interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs **4.2, 4.6, 4.11** ★ solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs **4.2, 4.6, 4.11** ★ solve simple measure and money problems involving fractions and decimals to two decimal places **4.11**	★ count in multiples of 6, 7, 9, 25 and 1000 **4.1, 4.3, 4.5, 4.8, 4.10, 4.13** ★ recall multiplication and division facts for multiplication tables up to 12 × 12 **4.3, 4.8, 4.13** ★ 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 **4.3, 4.8, 4.13** ★ recognise and use factor pairs and commutativity in mental calculations **4.3, 4.8, 4.13** ★ multiply two-digit and three-digit numbers by a one-digit number using formal written layout **4.13** ★ solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling and harder correspondence problems such as *n* objects are connected to *m* objects **4.3, 4.8, 4.13** ★ solve problems involving increasingly harder fractions to calculate quantities, and fractions to divice quantities, including non-unit fractions where the answer is a whole number **4.8, 4.13** ★ solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days **4.8, 4.10, 4.13**	★ compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes **4.4, 4.9, 4.14** ★ identify acute and obtuse angles and compare and order angles up to two right angles by size **4.4, 4.14** ★ identify lines of symmetry in 2-D shapes presented in different orientations **4.4, 4.14** ★ describe positions on a 2-D grid as coordinates in the first quadrant **4.9** ★ describe movements between positions as translations of a given unit to the left / right and up / down **4.9** ★ plot specified points and draw sides to complete a given polygon **4.9** ★ complete a simple symmetric figure with respect to a specific line of symmetry **4.14** ★ measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres **4.14** ★ find the area of rectilinear shapes by counting squares **4.14**

Year 5- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y5 Pupils should be taught to:	★ read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit **5.1, 5.5, 5.10** ★ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 **5.1, 5.5, 5.10** ★ interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero **5.5, 5.10** ★ round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 **5.1, 5.5, 5.10** ★ solve number problems and practical problems that involve all of the above **5.1, 5.5, 5.10** ★ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 **5.1, 5.3, 5.5, 5.7, 5.8, 5.10, 5.12, 5.13** ★ read and write decimal numbers as fractions [for example, 0.71 = $^{71}/_{100}$] **5.1, 5.5, 5.7, 5.10, 5.12** ★ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents **5.1, 5.5, 5.7, 5.10, 5.12** ★ round decimals with two decimal places to the nearest whole number and to one decimal place **5.1, 5.5, 5.10** ★ read, write, order and compare numbers with up to three decimal places **5.1, 5.5, 5.10** ★ solve problems involving number up to three decimal places **5.1, 5.5, 5.6, 5.10, 5.11** ★ convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) **5.1, 5.5, 5.10, 5.12** ★ solve problems involving converting between units of time **5.1, 5.5, 5.10, 5.11, 5.13** ★ read Roman numerals to 1000 (M) and recognise years written in Roman numerals **5.5** ★ compare and order fractions whose denominators are all multiples of the same number **5.7, 5.10, 5.12** ★ recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example, $^{2}/_{5} + {}^{4}/_{5} = {}^{6}/_{5} = 1\,{}^{1}/_{5}$] **5.7, 5.10, 5.11, 5.12** ★ 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 **5.7, 5.12**	★ solve problems involving number up to three decimal places **5.1, 5.5, 5.6, 5.10, 5.11** ★ add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) **5.2, 5.6, 5.11** ★ add and subtract numbers mentally with increasingly large numbers **5.2, 5.6, 5.11** ★ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy **5.2, 5.6, 5.11** ★ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **5.2, 5.6, 5.11** ★ use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling **5.2, 5.3, 5.6, 5.8, 5.11, 5.13** ★ solve comparison, sum and difference problems using information presented in a line graph **5.2, 5.6, 5.11** ★ complete, read and interpret information in tables, including timetables **5.2, 5.6, 5.11** ★ 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, $^{3}/_{5} + {}^{4}/_{5} = {}^{9}/_{5} = 1\,{}^{4}/_{5}$] **5.7, 5.10, 5.11, 5.12** ★ add and subtract fractions with the same denominator and denominators that are multiples of the same number **5.11** ★ measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres **5.6, 5.14**	★ use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling **5.2, 5.3, 5.6, 5.8, 5.11, 5.13** ★ identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers **5.3, 5.8, 5.13** ★ 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 **5.3, 5.8, 5.13** ★ multiply and divide numbers mentally drawing upon known facts **5.3, 5.8, 5.13** ★ 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 **5.3, 5.8, 5.13** ★ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 **5.1, 5.3, 5.5, 5.7, 5.8, 5.10, 5.12, 5.13** ★ recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) **5.8, 5.13** ★ solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes **5.3, 5.8, 5.13** ★ solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **5.3, 5.8, 5.13** ★ know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers **5.8, 5.13** ★ establish whether a number up to 100 is prime and recall prime numbers up to 19 **5.8, 5.13** ★ solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates **5.8, 5.13** ★ solve problems which require knowing percentage and decimal equivalents of ½, ¼, ⅕, ⅖, ⅘ and those with a denominator of a multiple of 10 or 25 **5.8, 5.13** ★ identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths **5.7, 5.13** ★ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **5.13** ★ understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints **5.13**	★ identify 3-D shapes, including cubes and other cuboids, from 2-D representations **5.4, 5.9** ★ know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles **5.4, 5.9** ★ draw given angles, and measure them in degrees (°) **5.4, 5.9** ★ identify: ★ angles at a point and one whole turn (total 360°) **5.4, 5.9** ★ angles at a point on a straight line and ½ a turn (total 180°) **5.4, 5.9** ★ other multiples of 90° **5.4, 5.9** ★ use the properties of rectangles to deduce related facts and find missing lengths and angles **5.4, 5.9, 5.14** ★ distinguish between regular and irregular polygons based on reasoning about equal sides and angles **5.4, 5.9, 5.14** ★ 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 **5.9, 5.14** ★ measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres **5.6, 5.14** ★ calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes **5.14** ★ estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] **5.14**

Year 6- Maths - Progression Map

	Number Sense	Additive Reasoning	Multiplicative Reasoning	Geometric Reasoning
Y6 Pupils should be taught to:	★ read, write, order and compare numbers up to 10 000 000 and determine the value of each digit **6.1, 6.5, 6.10** ★ round any whole number to a required degree of accuracy **6.1, 6.5, 6.10** ★ use negative numbers in context, and calculate intervals across zero **6.5, 6.6, 6.10** ★ solve number and practical problems that involve all of the above **6.1, 6.5, 6.10** ★ 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 **6.1, 6.5, 6.7, 6.10, 6.12** ★ use, read, write and convert between standard units, converting measurements of length, mass and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13** ★ convert between miles and kilometres **6.1, 6.8, 6.10** ★ express missing number problems algebraically **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ use simple formulae **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ generate and describe linear number sequences **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ find pairs of numbers that satisfy an equation with two unknowns **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ interpret and construct pie charts and line graphs and use these to solve problems **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ use common factors to simplify fractions; use common multiples to express fractions in the same denomination **6.7, 6.10, 6.12** ★ compare and order fractions, including fractions >1 **6.7, 6.10, 6.12** ★ associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, ⅜] **6.7, 6.12**	★ use, read, write and convert between standard units, converting measurements of length, mass and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13** ★ perform mental calculations, including with mixed operations and large numbers **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ use their knowledge of the order of operations to carry out calculations involving the four operations **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **6.2, 6.6, 6.11** ★ solve problems involving addition, subtraction, multiplication and division **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ solve problems which require answers to be rounded to specified degrees of accuracy **6.2, 6.6, 6.11** ★ express missing number problems algebraically **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ use simple formulae **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ generate and describe linear number sequences **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ find pairs of numbers that satisfy an equation with two unknowns **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ enumerate possibilities of combinations of two variables **6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14** ★ solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13**	★ use, read, write and convert between standard units, converting measurements of length, mass and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **6.1, 6.2, 6.3, 6.5, 6.6, 6.7, 6.8, 6.10, 6.11, 6.12, 6.13** ★ solve problems involving addition, subtraction, multiplication and division **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ express missing number problems algebraically **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ use simple formulae **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ generate and describe linear number sequences **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ find pairs of numbers that satisfy an equation with two unknowns **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ enumerate possibilities of combinations of two variables **6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14** ★ solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ interpret and construct pie charts and line graphs and use these to solve problems **6.2, 6.3, 6.6, 6.7, 6.8, 6.11, 6.12, 6.13** ★ multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication **6.3, 6.8, 6.13** ★ divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context **6.3, 6.8, 6.13** ★ 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 **6.3, 6.8, 6.13** ★ perform mental calculations, including with mixed operations and large numbers **6.2, 6.3, 6.6, 6.8, 6.11, 6.13** ★ identify common factors, common multiples and prime numbers **6.3, 6.8, 6.13**	★ express missing number problems algebraically **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ use simple formulae **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ find pairs of numbers that satisfy an equation with two unknowns **6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.14** ★ enumerate possibilities of combinations of two variables **6.2, 6.3, 6.4, 6.6, 6.8, 6.9, 6.11, 6.13, 6.14** ★ draw 2-D shapes using given dimensions and angles **6.4, 6.9, 6.14** ★ recognise, describe and build simple 3-D shapes, including making nets **6.4, 6.9, 6.14** ★ compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons **6.4, 6.9, 6.14** ★ illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **6.4, 6.9, 6.14** ★ recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **6.4, 6.14** ★ recognise that shapes with the same areas can have different perimeters and vice versa **6.4, 6.14** ★ calculate the area of parallelograms and triangles **6.4, 6.9, 6.14** ★ recognise when it is possible to use the formulae for area and volume of shapes **6.4, 6.9, 6.14** ★ describe positions on the full coordinate grid (all four quadrants) **6.9, 6.14** ★ draw and translate simple shapes on the coordinate plane, and reflect them in the axes **6.9, 6.14** ★ 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]. **6.9, 6.14**