Maths Progression Ladder

		Place Value	FDP	Four Operations	Shape/Time/Money	Measurement	Statistics

Year 1 – National Curriculum	Foundation ARE	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any
		• given number
		• count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
		• given a number, identify one more and one less
		• identify and represent numbers using objects and pictorial representations including
		• the number line, and use the language of: equal to, more than, less than (fewer),
		• most, least
		• read and write numbers from 1 to 20 in numerals and words.
			• recognise, find and name a half as one of two equal parts of an object, shape or quantity
			• recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
				• read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
				• represent and use number bonds and related subtraction facts within 20
				• add and subtract one-digit and two-digit numbers to 20, including zero
				• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9.
				• 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.
					• recognise and name common 2-D and 3-D shapes, including:
					  ○ 2-D shapes [for example, rectangles (including squares), circles and triangles]
					  ○ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
					• describe position, direction and movement, including whole, half, quarter and threequarter turns.
						• compare, describe and solve practical problems for:
						  ○ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
						  ○ mass/weight [for example, heavy/light, heavier than, lighter than]
						  ○ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
						  ○ time [for example, quicker, slower, earlier, later]
						• measure and begin to record the following:
						  ○ lengths and heights
						  ○ mass/weight
						  ○ capacity and volume
						  ○ time (hours, minutes, seconds)
						• recognise and know the value of different denominations of coins and notes
						• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
						• recognise and use language relating to dates, including days of the week, weeks, months and years
						• tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
							Statistics are not covered in Year 1.

	1GD *see mastery documents APP	• Identify missing numbers in sequence • Children make conjectures e.g true and false and explain why ('Convince me') • Manipulate digit cards – smallest number, largest number, less than 30, etc • Finding the odd one out in a series of numbers. • 'If I count on from 0 in 5s, will I land on…'	• Children investigate shapes and amounts that can and cannot halve. • Can everything that can halve, quarter? • Use diagrams and images to find equivalence. • What fractions of shapes are shown, when they are not in equal parts? • Shade halves in different ways. • Halve different foods e.g ½ an apple, ½ of 4 strawberries, ½ of a piece of banana.	• Children use a range of contexts and wording in problems. • Children give questions to partner. • Children become more confident with using the bar model. • Find different possibilities in word problems, not one answer • Inverse word problems (one step) e.g 'Gemma thought of a number….' • Price lists – what could I buy with 20p? • Change • Addition/Subtraction diagrams with answer only – finding all possibilities • 3 step addition/subtraction with missing numbers • Magic number grids	• Children investigate and sort a range of shapes – what is the same? What is different? • Odd one out • Find shapes from description of properties • 5 questions to find out which shape I am thinking of… • Children sort using their own criteria, as well as others. • Children apply ordinal numbers to everyday events. • Children work with simple maps and charts to describe position and movement.	• Children become familiar and competent with a range of measuring equipment. • Children measure practically in a range of contexts, such as cooking, building, etc. • Compare lengths/weights e.g one is halve the length of another, which is longer, 2 of one or 3 of the other? • True and false with comparing measurements • Using only ….coins, could you make? What can't you make? • Finding dates on calendar e.g Party on the 3rd Friday of the month. • Time problems involving quicker/slower • Put missing minute hand on clock based on position of hour hand.	

Maths Progression Ladder

		Place Value	FDP	Four Operations	Shape	Measurement	Statistics

Year 2		• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and 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
		• use place value and number facts to solve problems.
			• recognise, find, name and write fractions 1/3, ¼, 2/4 and 3/4 of a length, shape, set of objects or quantity
			• write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½
				• solve problems with addition and subtraction:
				  ○ using concrete objects and pictorial representations, including those involving
				  ○ numbers, quantities and measures
				  ○ applying their increasing knowledge of mental and written methods
				• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
				• add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
				  ○ a two-digit number and ones
				  ○ a two-digit number and tens
				  ○ two two-digit numbers
				  ○ adding three one-digit numbers
				• show that 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 solve missing number problems.
				• 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.
					• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
					• identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
					• identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]
					• compare and sort common 2-D and 3-D shapes and everyday objects.
					• order and arrange combinations of mathematical objects in patterns and sequences
					• 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).
						• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
						• compare and order lengths, mass, volume/capacity and record the results using >, < and =
						• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money
						• solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
						• compare and sequence intervals of time
						• tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
						• know the number of minutes in an hour and the number of hours in a day.
							• 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.

Year 2 Greater Depth		• Count in 2s, 5s and 10s beyond 100 • Count in 3s beyond 100 and start making links to thirds • Connect the 10s to place value and 5s to divisions on a clock face. • Represent numbers and values in a variety of ways and can make comparisons between different ones.	• Make links between sequences and fractions. • Count up and down in fractions to zero • Make links between different representations of fractions including a range of 2D and 3D shapes, as well as numerical values. • Use and construct fraction walls to find links between different fractions. • Can find and compare different fractions of amounts.	• Children hone skills within appropriate number range within a range of contexts. • Children have practical situations in which to apply skills e.g the shop • Solve word problems involving more than one step. • Children make their own decisions on resources and representations. • Use multiplication facts to make deductions about outside known facts. • Complex missing number problems • Recognise the relationship between complex repeated addition to write simplified multiplication. • Relate multiplication and division sentences to fractions e.g 8÷2 = ½ of 8 • Children become more fluent with calculating mentally through a range of games and activities.	• Read and write the names of shapes that re appropriate for reading and spelling • Draw lines and shapes with a straight edge. • Apply directional language to partners and robots. • Work with patterns of shapes included those in different orientations • Children practise using appropriate equipment to draw shapes accurately. • Find the similarities and differences between different shapes in relation to properties	• Children measure with increasing accuracy, reading to the nearest division on a scale. • Compare measures using 'half as..' 'twice as…' • Become fluent in counting and recognising coins – say amounts properly and use symbols • Know the equivalence of pounds and pence e.g 312p = £3.12 • Become fluent in telling time on analogue clock and recording it. Tell and write the time to 5 minute intervals and show on an analogue clock	• Extract and interpret information given in pictograms, tables and tally charts. • Construct bar charts and pictograms where the symbol represents a group of unit; decide how to represent data and an appropriate scale

Maths Progression Ladder

		Place Value	FDP	Four Operations	Shape/Money	Measurement	Statistics
Year 3		- 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.	- 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 denominators - 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.	- add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds - add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction - estimate the answer to a calculation and use inverse operations to check answers - solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction - 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.	- 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.	- 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 and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight - know the number of seconds in a minute and the number of days in each month, year and leap year - compare durations of events [for example to calculate the time taken by particular events or tasks].	- 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.
3GD	***see mastery documents**	- Use a variety of representations, including measures, to continue counting in ones, tens and hundreds. – identify numbers represented from different resources - Make largest numbers, smallest with resources - Make conjectures and reason about what numbers can and cannot be made e.g if I add 3 to a number ending in 7, the final digit will always be zero… - Insert missing digits to make numbers that are smaller/larger/in order	- Understand the link between unit fractions and division by integers - Recognise unit and non-unit fractions as numbers on a number line (beyond 1) - Interpret mixed numbers and position on a number line – link to measure - Practise adding and subtracting fractions with the same denominator – more complex, through problems - Draw a diagram to show what has happened in problem. - True or false with diagrams. - If this is 2/5, what does the whole look like? - Find all possibilities of equalling 1. - Reason about amount shaded using clues. - Link problems to simple fractions	- Always, sometimes, never statements with calculations - Identify correct and incorrect calculations to solve a problem. - Calculations involving money and measures – different possibilities. - Children answer questions about calculations without doing them e.g which involves carrying? - Find relationships between multiplication statements - associatively - Write additions as multiplication statements. - Write a story for different calculations. - Complete missing digits in formal calculations - Solve missing number balancing equations e.g. 832 = 512 + 394 - _____ 500 - ____ = 4 x 37	- Use the eight compass points to describe direction; - Start to give directions between different locations. - Describe the properties of 2D and 3D shapes, embedding main vocabulary – angles, length of side - Sort shapes, including angles by one criteria - True or false statements - How many different shapes on a pin-board? - Connect decimals and rounding to drawing and measuring straight lines in centimetres. - Symmetry	- Find start and end times - Children work practically with a range of scales. - Show broken ruler – how could we work out the length of something with this? - Difference in lengths shown on different parts of ruler - Children start to compare sizes of different containers e.g height vs width - Reason about comparisons with 3 objects compared. - Someone has 5 coins, what is the biggest amount they can have? The smallest amount? - Work out proportions of an amount e.g £35 altogether, but one has £4 more than the other. - Read clocks with only hour hand. - Rounding linked to measure - Link measure to decimals	- Create different charts to display same data - Children interpret a range of graphs and charts with different scales. - Children answer patterns and investigate trends. - Children start creating their own charts to represent data given or collected. - Combine data to create one graph.

Maths Progression Ladder

	Place Value	FDP	Four Operations	Shape	Measurement	Statistics
Year 4	• 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 (thousands, hundreds, tens, and ones) • 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.	• 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 one 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 and subtract fractions with the same denominator • recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to ½, ¼, 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 and hundredths • round decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places • solve simple measure and money problems involving fractions and decimals to two decimal places	• 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 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 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.	• 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.	• 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.	• 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.
Year 4 Greater Depth	• Finding different ways of writing same number. • Negative numbers in context e.g. sea level and different depths – mark on scale. • Predict later appearances in a sequence e.g. the 19th, etc. • Connect estimating and rounding to measurement • Round up or down with remainders when appropriate • Make up own numeral system.	• Connect tenths and hundredths to place value and decimal measure • Continue sequences involving decimals • Extend adding and subtracting fractions to using mixed numbers and improper fractions (beyond 1 whole) • Use <> = to compare fractions of amounts. • Draw diagrams of fractions in many different ways. • Show 1/3 of a shape, draw the whole shape. • Use digit cards to make largest decimal and smallest decimal.	• Find missing parts of bar models. • Write a problem for a bar model. • Give examples of problems where you would use different types of methods. • Begin to use short multiplication and division • Fill in missing digits in multi-step calculations • Use <>= to compare calculations in balancing – reason rather than calculate. • True or false with product of 2 and 3 numbers – are they equal? • Manipulate the factors in multiplications by 1 more/1less – what do you notice?	• Start to classify types of triangle and quadrilateral • Complete shapes which has some sides already completely at oblique angles on a grid. • Use coordinates accurately on maps and grids, in relation to positions and shapes • Investigate when a shape has reflective symmetry and when it does not • Write coordinates in pairs. • Using angles/side lengths, reason about regular and irregular, amount of right-angles, etc. • Line of symmetry? True or False?	• Start to express perimeter algebraically • Compare the impact of scales with different step sizes • Investigate different shapes with the same area/perimeter • Use multiplication to convert from larger to smaller units. • Connect different tiles and calculate perimeters and areas. • Order volumes with different unit representations.	• Interpret scales using a greater range of scales • Start interpreting scales where the reading falls between divisions • Compare the same data shown on different scales/charts • Use line graphs to explain changes over time • What would happen if….? • Make a story to fit a line graph.

Maths Progression Ladder

	Number/Place Value	FDP	Four Operations	Shape	Measurement	Statistics

Year 5	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
	• 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, 100, 1000, 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.
		• 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 and write mathematical statements > 1 as a mixed number [for example, 2/5+4/5=6/5=1 and 1/5]
		• add and subtract fractions with the same denominator and denominators that are multiples of the same number
		• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
		• read and write decimal numbers as fractions [for example, 0.71 = 71/100]
		• 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 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
		• solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.
			• 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
			• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
			• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
			• 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
			• 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, including long multiplication for two-digit numbers
			• multiply and divide numbers mentally drawing upon known facts
			• 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
			• 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 (^{2}) and cubed (^{3})
			• 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
			• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
				• identify 3-D shapes, including cubes and other cuboids, from 2-D representations
				• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
				• draw given angles, and measure them in degrees (°)
				• identify:
				  o angles at a point and one whole turn (total 360°)
				  o angles at a point on a straight line and ½ a turn (total 180°)
				  o other multiples of 90°
				• 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.
				• 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.
					• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
					• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
					• 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 (cm^2) and square metres (m^2) and 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
					• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
						• solve comparison, sum and difference problems using information presented in a line graph
						• complete, read and interpret information in tables, including timetables.

Year 5 GD	• Give the place value of digits in all larger numbers – explore millions in population and stadium capacity etc. • Use digits 0 – 9 to write largest number, smallest, can you make all numbers? • Reason with temperatures – why do you think I falls, rises? Difference between coldest and warmest. • Use one number sentence (decimals, negatives) to predict others that would also be true. • Explain reasoning from a statement e.g If I keep subtracting 3 from 397, I will get to zero. • All numbers have an even amount of factors. True or False? • Fill in missing values in equivalent calculations – some multi-step.	• When adding and subtracting fractions, include mixed numbers and improper fractions – solve problems • Give fractions that have denominators that are multiples – which is bigger? • Statement comparing two fractions – is it correct? • Which fraction is closer to one? • Fill in empty boxes in calculation to give biggest answer/smallest answer. • Shade grid in different way to the same proportion is shaded.	• Check all results and ensure they are reasonable, including with fraction and decimal answers • Solve puzzles including decimals – magic squares, pyramids • Bar Model questions with unknown values. • Explore problems with multiple solutions e.g ribbon cut into equal parts – what could they be? • True and False with equivalent equations	• Recognise pairs of perpendicular lines in shapes and patterns • Estimate and compare all types of angle, including reflex • Find a range of angles with different shapes and dissections; make links between angles • Use angle facts to find missing angles in problems. • Angles using a compass – which direction? • Statements about shapes – true or false? • Draw net of shape – accurately measured.	• Begin to find areas of shapes by splitting into rectangles • Find area using whole and half squares • Use timetables to plan journeys • Calculate area from scale drawings • Use conventional markings for parallel lines and right angles. • True or False equivalent statements. • Calculate unknown from comparisons with known.	• Find as many possibilities of rectangles with same area/perimeter • Become fluent with readier a range of graphs and scales • Present collected information in a variety of ways. • Solve problems with timetables – which is quickest? Best route? Which bus? • Use line graph to predict further data.

Maths Progression Ladder

	Place Value/Four Operations	FDP	Algebra/Ratio	Shape	Measurement	Statistics
Year 6	• read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above. • 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, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • 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 • 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 • 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.	• 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, ½ x ¼ = 1/8] • divide proper fractions by whole numbers [for example, 1/3÷2=1/6] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] • 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 • 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.	• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables. • 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 • 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.	• draw 2-D shapes using given dimensions and angles • recognise, describe and build simple 3-D shapes, including making nets • 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 • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • describe positions on the full coordinate grid (all four quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	• 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 • convert between miles and kilometres • recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³].	• interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average.
Year 6 Greater Depth	Find the prime number decomposition of any number Use all four operations with decimals to two places Use approximations, inverse operations and tests of divisibility to estimate and check results Find a percentage increase/decrease. Make generalisations about sequences e.g numbers that will or will not be in the sequence – compare different sequences – why are they similar? Statements about number card or different cards – can out work out which number is which? True and false statements involving rounding with different levels of accuracy. Temperature problems involving rising and falling by different increments. Give other children's strategies for solving sums – would they work? Give problem with all digits missing but the answer – what would make it work? Is there only one way? Work out numbers from their difference and other criteria. Find calculation which is the odd one out. Which calculation would be easier to work out? Why? Can you change this to make it easier? Calculate with negative numbers in the context of temperature	Use conversions between fractions, decimals and percentages to order amounts Solve a range of problems including fractions, decimals and percentages of amounts Work backwards from a fraction to find a whole From fraction, identify whole length and compare with other. Find the odd one out with fractions and proportions. Give FDP that represent spaces on number line. Identify how a pizza was cut up from the final fraction remaining. Answer true or false statements about properties of fractions.	Recognise proportionality in contexts where the relations are in the same ratio. Evaluate expressions by substituting numbers into them Is there one whole number that fits all statements? Recognise equivalent expressions Compare prices, which is better value? What are x and y when…? Problems involving an estimated amount – do you think they are correct? Show word problem to match ratio bar model. Find ages, based on combined and other criteria. Find total number based on fraction left.	Draw nets and shapes accurately using measuring tools and conventional labels for lines and angles Compare relationships algebraically Recognise order of rotation symmetry Rotate shapes, through 90° or 180°, when the centre of rotation is a vertex of the shape, and recognise such rotations Reason about shapes, positions and movements, predict missing co-ordinates of vertices Reflect shapes using an axis Reason about angles between clock hands at different times. Find angles in bisected shapes using angles knowledge. Work out angles in triangle from comparisons Compare circle and oval –what is the same/different? Reason about nets. Relate areas of parallelograms and triangles to rectangles	Use formulas to calculate Introduce compound units for speed and apply to science Explain time using decimals. Calculate height based on criteria in different forms. Compare methods of finding area of complex shape – which is correct? If the perimeter of a shape is bigger, will the area be? Find cuboids with the same volume – what is the same/different? Solve problem involving comparing qualities e.g doubles each day vs. increases by 10.	Design and use two-way tables Link percentages and 360° to pie charts Estimate using pie charts – link to fractions. Estimate angles needed to represent data. Compare different lines on a graph.