Progression in Mathematics Y1-3

National Curriculum for Mathematics: 2014			
	Year 1	**Year 2**	**Year 3**
Number and Place Value	Pupils should be taught to: • 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 different multiples including ones, twos, fives and tens • Given a number, identify one more and one less • Identify and represent numbers using concrete 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 1 to 20 in digits and words	Pupils should be taught to: • Count in steps of 2, 3, and 5 from 0, and count in tens from any number, forward or backward • Recognise the value of each digit in a two digit number (tens, ones) • Identify, represent and estimate numbers using different representation, including the number line • Compare and order numbers from 0 up to 100; use <, > and = signs • Read and number facts to solve problems • Read and write numbers to at least 100 in numerals and in words • Use place value and number facts to solve problems	Pupils should be taught to: • Count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more 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 to at least 1000 in numerals and in words • Solve number problems and practical problems involving these ideas.
Addition and subtractions	Pupils should be taught to: • 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.	Pupils should be taught to: • Solve simple one-step 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 missing number problems	Pupils should be taught to: • 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 the efficient 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.

APPENDIX 2a

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Multiplication and division	Pupils should be taught to: • Solve simple one step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Pupils should be taught to: • 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 (x), division (÷) and equals (=) signs • Show that multiplications of two numbers can be done in any order (commutative and division of one number by another cannot • Solve one-step problems involving multiplication and division, using materials arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Pupils should be taught to: • 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 two-digit numbers times one-digit numbers, using mental and progressing to efficient written methods • Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
Fractions	Pupils should be taught to: • 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.	Pupils should be taught to: • Recognise, find name and write fractions 1/3, ¼, 2/4, and ¾ of a length, shape, set of objects or quantity • Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalent of two quarters and one half	Pupils should be taught to: • 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 (e.g. 5/7 + 1/7 = 6/7) • Compare and order unit fractions with the same denominator • Solve problems that involve all of the above

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Measures	Pupils should be taught to:
	
	• Compare, describe and solve practical problems for:
	  ▪ Lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)
	  ▪ Mass or weight (e.g. heavy/light, heavier than, lighter than
	  ▪ Capacity/volume (full/empty, more than/less than, quarter
	  ▪ Time (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 such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening
	
	• Recognise and use the 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.
		Pupils should be taught to:
		
		• 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 =
		
		• Read relevant scales to the nearest numbered unit
		
		• 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 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
			Pupils should be taught to:
			
			• 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 giving change, using both £ and p in practical contexts
			
			• Tell and write the time from an analogue clock, including using Roman numerals from 1 to X11, and 12 hour and 24 hour clocks
			
			• Estimate and read time to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight
			
			• Know the number of seconds in a minute and the number of days in each month, year and leap year
			
			• Compare durations of events, for example to calculate the time taken by particular events or tasks.

Geometry: properties of shape	Pupils should be taught to:
	
	• Recognise and name common 2-D and 3-D shapes, including:
	  ▪ 2-D shapes (e.g. rectangles (including squares), circles and triangles)
	  ▪ 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres)
		Pupils should be taught to:
		
		• Identify and describe the properties of 2-D shapes, including the number of sides and 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
			Pupils should be taught to:
			
			• Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them with increasing accuracy
			
			• Recognise angles as a property of shape and associate angles with turning
			
			• 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, vertical, perpendicular and parallel lines in relation to other lines.

Geometry: position, direction, motion	Pupils should be taught to: • Describe position, directions and movements, including half, quarter and three-quarter turns	Pupils should be taught to: • Order and arrange combinations of mathematical objects in patterns • Use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	
Statistics		Pupils should be taught to: • 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 compare categorical data.	Pupils should be taught to: • Interpret and 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.