Year 5 Primary Curriculum Programme of Study for Mathematics (Draft)

NUMBER: Pupils should be taught to

Number, place value, approximation and estimation			
	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 100, 1000 or 10,000 for any given number up to 1,000,000	
	round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000	estimate the answers to calculations involving addition, subtraction, multiplication and division	
	read Roman numerals to 1000 (M) and recognise years written in Roman numerals		
Addition and subtraction			
	add and subtract whole numbers with up to 5 digits, including using formal written methods	add and subtract numbers mentally with increasingly large numbers	
Multiplication and division			
	identify multiples including common multiples, and factors including common factors	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 the prime numbers up to 19	multiply numbers up to 4-digits by a 1 or 2-digit number using a formal written method, including long multiplication	
	accurately multiply and divide numbers mentally drawing upon known facts	divide numbers up to 4 digits by a 1-digit number and 10 and interpret remainders appropriately	
	divide numbers up to 4 digits by a 1-digit number and 10 and interpret remainders appropriately	recognise and use square numbers and square roots, and the notation for square (^{2}) and square root ($\sqrt{}$)	
	solve word problems involving addition and subtraction, multiplication and division		
Fractions			
	compare and order fractions with different denominators	recognise mixed numbers and improper fractions and convert from one form to the other	
	add and subtract fractions with the same denominator and related fractions;, write mathematical statements that exceed 1 as a mixed number: (e.g. 2/5 + 4/5 = 6/5 = 11/5)	multiply proper fractions and mixed numbers by whole numbers	
Decimals			
	read and write decimal numbers as fractions (e.g. 0.71 = 71/100)	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
	read, write, order and compare numbers with up to three decimal places	add and subtract numbers with up to three decimal places	
Percentage			
	recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred" for example that 100% represents a whole quantity and 1% is 1/100, 50% is 50/100, 25% is 25/100, etc.	write simple fractions as percentages and decimals as percentages (e.g. ½ = 50% = 0.5)	

GEOMETRY AND MEASURES: Pupils should be taught to

Properties of shapes			
	measure angles in degrees and draw a given angle, writing its size in degrees		
	know angles are measured in degrees and identify:		
	right-angles and ¼ turn (total 90°)	angles at a point on a straight line and ½ a turn (total 180°)	
	angles at a point and one whole turn (total 360°)	reflex angles and compare different angles	
	recognise and compare different triangles including: isosceles, equilateral and right-angled; identify and name the following: parallelogram; rhombus; trapezium	construct shapes from given dimensions; state and use properties of a square and rectangle	
	identify 3-D shapes including cubes and cuboids from 2-D representations		
Position, direction, motion			
	identify, describe and represent the position of a shape following a reflection or translation using the appropriate vocabulary		
Measures			
	add, subtract, multiply and divide units of measure (e.g. length, mass, volume, money) using decimal notation	understand and use basic equivalencies between metric and common imperial units and express them in approximate terms	
	measure force in Newtons (N)	calculate, estimate and compare the area of squares, rectangles and related composite shapes using standard units, including centimetre squared (cm^2) and metre squared (m^2)	
	recognise volume in practical contexts, for example using sand and water, 1 cm^3 blocks or interlocking cubes to build cubes and cuboids		
Data			
	complete tables and bar graphs from given information and solve problems using data presented in bar graphs, tables and simple pie charts		