Year 6 Primary Curriculum Programme of Study for Mathematics (Draft)

NUMBER: **Pupils should be taught to**

Number, place value and rounding		
	read, write, order and compare numbers up to 10 million and determine the value of each digit	round any number to a required degree of accuracy
	recognise binary numerals to 15 (1111) and convert between binary and decimal numerals	

Addition, subtraction, multiplication and division		
	add and subtract negative integers	multiply numbers with at least 4-digits by a 2-digit whole number using long multiplication
	divide numbers up to 4-digits by a 2-digit whole number using long division, and interpret remainders as whole number remainders, fractions, decimals or by rounding	perform mental calculations, including with mixed operations and large numbers
	use estimation to check answers to calculations and determine, in the context of a problem, whether an answer should be rounded or written as a fraction or a decimal	carry out combined operations involving the four operations accurately and state the order of operations
	solve word problems involving addition, subtraction, multiplication and division	

Fractions		
	add and subtract mixed numbers and fractions with different denominators	multiply simple unit fractions by fractions and pairs of proper fractions, writing the answer in its simplest form
	divide proper fractions by whole numbers	associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8)

Decimals		
	identify the value of each digit to three decimal places and multiply and divide numbers up to three decimal place by 10, 100 and 1000	multiply and divide numbers with up to two decimal places by 1-digit and 2-digit whole numbers

Percentage		
	use percentages for comparison and calculate percentages of whole numbers or measures such as 15% of 360	recall and use equivalences between fractions, decimals and percentages

Ratio and proportion		
	use ratios to show the relative sizes of two quantities	recognise equivalent ratios and reduce a given ratio to its lowest terms
	recognise and use division in the context of fractions, percentages and ratio	

Algebra		
	solve linear missing number problems, including those involving decimals and fractions, and find pairs of numbers that satisfy number sentences involving two unknowns	use simple formulae expressed in words
	generate and describe linear number sequences, including those involving negative and decimal numbers, and proper fractions e.g. 1.4, 1.1, 0.8	

GEOMETRY AND MEASURES: **Pupils should be taught to**

Properties of shapes		
	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
	recognise, describe and build simple 3-D shapes, including making nets	describe properties of cuboids and other common 3-D shapes including prisms and identify parallel planes and symmetries
	estimate the size of angles	find unknown angles involving angles at a point, on a straight line, in a triangle (180°), in a quadrilateral (360°) and vertically opposite angles

Position, direction, motion		
	describe positions on the full coordinate grid (all four quadrants)	construct, translate and reflect simple shapes on the coordinate plane

Measures		
	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, including between miles and kilometres	recognise that shapes with the same areas can have different perimeters and vice versa
	calculate the area of parallelograms and triangles	recognise when it is necessary to use the formulae for area and volume of shapes
	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3) and extending to other units, such as mm^3 and km^3	use decimal notation to three decimal places to solve problems involving calculation and conversion of measures

Data		
	draw, read and interpret line graphs and use these to solve problems	use and interpret averages including mean, median and mode and solve simple problems using different kinds of averages

Probability		
	use the language associated with probability such as certain, equally likely, unlikely, impossible and use this to describe the likelihood of particular events	