WHOLE SCHOOL MATHS PROGRESION

Fluency	Reason Mathematically	Solve Problems
To become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.	To reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language	To solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

MULTIPLICATION & DIVISION

MULTIPLICATION & DIVISION FACTS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Explore and represent patterns within numbers up to 10, including double facts and how quantities can be distributed equally	***Count in multiples of twos, fives and tens*** ***Copied from Number and Place Value***	***Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward*** ***Copied from Number and Place Value***	***Count from 0 in multiples of 4, 8, 50 and 100*** ***Copied from Number and Place Value***	***Count in multiples of 6, 7, 9, 25 and 1,000*** ***Copied from Number and Place Value***	***Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000*** ***Copied from Number and Place Value***	
		Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12 × 12		
MENTAL CALCULATION						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
		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 (appears also in Written Methods)	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	Multiply and divide numbers mentally drawing upon known facts	Perform mental calculations, including with mixed operations and large numbers	
	Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		***Recognise and use factor pairs and commutativity in mental calculations*** ***Appears also in Properties of Numbers***	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	***Associate a fraction with division and calculate decimal fraction equivalents (e.g., 0.375) for a simple fraction (e.g., $^3/_8$)*** ***Copied from Fractions***	
WRITTEN CALCULATION						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the	***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***	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

		multiplication (×), division (÷) and equals (=) signs	***progressing to formal written methods*** ***Appears also in Mental Methods***			
					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	Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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
						Use written division methods in cases where the answer has up to two decimal places ***Copied from Fractions (including decimals)***
PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
				Recognise and use factor pairs and commutativity in mental calculations (repeated)	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	Identify common factors, common multiples and prime numbers ***Use common factors to simplify fractions; use common multiples to express fractions in the same denomination*** **Copied from Fractions**
					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	
					Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	***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*** ***Copied from Measures***

ORDER OF OPERATIONS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
						Use their knowledge of the order of operations to carry out calculations involving the four operations
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
			Estimate the answer to a calculation and use inverse operations to check answers ***Copied from Addition and Subtraction***	***Estimate and use inverse operations to check answers to a calculation*** ***Copied from Addition and Subtraction***		Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy