St Brigid's Catholic Primary School – Multiplication & Division - Progression Map

MULTIPLICATION & DIVISION FACTS								
24mths		30mths		36mths		42mths		48mths
54mths	60mths	66mths	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count in ones	*to join in with adults when counting in multiples of tens*	*to begin to count in multiples of twos*	*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 1000 (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)*	
		to distribute quantities equally and represent double facts. ELG	*to begin to recognise odd and even numbers*	*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								
Count in ones	*to begin to count in multiples of tens*	*to begin to count sequences of 2s and 10*	*to count in sequences of 2s 5s and 10*	*to begin to automatically recall multiplication facts for the 10, 2 and 5 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 (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		*recognise and use*	*multiply and divide*	*associate a fraction*

				multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	whole numbers and those involving decimals by 10, 100 and 1000	with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)
WRITTEN CALCULATION								
54mths	**60mths**	**66mths**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
			To begin to recognise mathematical statements using the multiplication (×), division (÷) and equals (=) signs	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	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 Mental Methods)	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
							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								
54mths	60mths	66mths	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								
54mths	60mths	66mths	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								
					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
PROBLEM SOLVING								
24mths		30mths		36mths		42mths		48mths
54mths	60mths	66mths	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

to share objects through play	to begin to solve one-step problems including doubling and sharing	solve one-step problems including doubling and sharing	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	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	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	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	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
		to distribute quantities equally and represent double facts. ELG					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	solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)