Number: Multiplication and Division

EYFS

Cardinality and Counting
Counting – Saying number words in sequence

MULTIPLICATION & DIVISION FACTS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count in multiples of twos, fives and tens (copied from Number and Place Value) **Autumn 1 & 4** **Spring 2 & Summer 4**	*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) **Autumn 1**	*count from 0 in multiples of 4, 8, 50 and 100* (copied from Number and Place Value) **Autumn 1 & 3**	*count in multiples of 6, 7, 9, 25 and 1 000* (copied from Number and Place Value) **Autumn 1 & 4**	*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) **Autumn 1**	
	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Autumn 4 & Spring 1	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables Spring 1	recall multiplication and division facts for multiplication tables up to 12 × 12 Spring 1		
MENTAL CALCULATION					
		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 Autumn 3 & Spring 1	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 Spring 1	multiply and divide numbers mentally drawing upon known facts Autumn 4 Spring 1 Summer 1	perform mental calculations, including with mixed operations and large numbers Autumn 2
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Autumn 4 & Spring		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers) Autumn 4 & Spring 1	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Autumn 4 Spring 1 Summer 1	*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) Spring 1 & Spring 2

WRITTEN CALCULATION					
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 multiplication (×), division (÷) and equals (=) signs Autumn 4 Spring 1	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) Autumn 3 & Spring 1	multiply two-digit and three-digit numbers by a one-digit number using formal written layout Spring 1	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 Autumn 4 Spring 1 Summer 1	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication Autumn 2
				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 Autumn 4 Spring 1 Summer 1	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 Autumn 2
					use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals)) Spring 1

PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			recognise and use factor pairs and commutativity in mental calculations (repeated) Autumn 4 Spring 1	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Autumn 4 know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers Autumn 4 establish whether a number up to 100 is prime and recall prime numbers up to 19 Autumn 4	identify common factors, common multiples and prime numbers Autumn 2 *use common factors to simplify fractions; use common multiples to express fractions in the same denomination* (copied from Fractions)
				recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) Autumn 4	*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) Spring 5
ORDER OF OPERATIONS					
					use their knowledge of the order of operations to carry out calculations involving the four operations Autumn 2
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
		estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction) Autumn 2	*estimate and use inverse operations to check answers to a calculation* (copied from Addition and Subtraction) Autumn 2		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy Autumn 2

PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 Summer 1	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts Autumn 4 Spring 1	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 Spring 1	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 Spring 1	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes Autumn 4	solve problems involving addition, subtraction, multiplication and division Autumn 2
				solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Autumn 4 & Spring 1	
				solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates Spring 1	*solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion) Spring 6