Maths Curriculum Progression

Number – Multiplication and Division							
Understanding Multiplication and Division							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method)	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method)*	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method)*	*Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method)*
	ELG: *Understand that doubling is adding the same number to itself and that it is multiplying by 2* *Understand that halving is sharing into two equal portions and that this is dividing by 2*		*Understand multiplication as repeated addition* *Understand division as sharing and grouping and that a division calculation can have a remainder* Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	*Understand that division is the inverse of multiplication and vice versa* *Understand how multiplication and division statements can be represented using arrays* *Understand division as sharing and grouping and use each appropriately*			
Multiplication and Division Facts							

			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		
	ELG: Know doubles of numbers to 5 and corresponding halves	*Recall and use doubles of all numbers to 10 and corresponding halves*	*Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10)* *Derive and use halves of simple two-digit even numbers (numbers in which the tens are even)*	*Derive and use doubles of all numbers to 100 and corresponding halves* *Derive and use doubles of all multiples of 50 to 500*	*Use partitioning to double or halve any number, including decimals to one decimal place*	*Use partitioning to double or halve any number, including decimals to two decimal places*	*Use partitioning to double or halve any number*

	Split objects into equal groups to find out how many groups there are Share a set of objects equally **ELG: Use doubling, halving and sharing**		Calculate mathematical statements for multiplication *(using repeated addition)* 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 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 Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	Perform mental calculations, including with mixed operations and large numbers

Written Methods

	Record, using marks that they can interpret and explain	*Written methods are informal at this stage – see mental methods for expectation of calculations*	*Written methods are informal at this stage – see mental methods for expectation of calculations*	Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, progressing to formal written 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 numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

Multiply one-digit numbers with up to two decimal places by whole numbers |
| | | | | Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, progressing to formal written methods | *Divide numbers up to 3 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 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 number using the formal written method of short division where appropriate, interpreting remainders according to the context

Use written division methods in cases where the answer has up to two decimal places |

Inverse Operations, Estimating and Checking Calculations

				Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	*Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy*	*Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy*	Use estimation *and inverse* to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers

						Recognise and use factor pairs and commutativity in mental calculations	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers 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})	Identify common factors, common multiples and prime numbers
Solving multiplication and division problems including those with missing numbers								
	ELG: Solve problems, including doubling, halving 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 *(including those with remainders),* 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 *(and interpreting remainders)*, 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, *division (including interpreting remainders)*, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	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 multiplication and division including using their knowledge of factors and multiples, squares and cubes	Solve problems involving addition, subtraction, multiplication and division	

Order of operations							
							Use their knowledge of the order of operations to carry out calculations involving the four operations
Vocabulary							