

Maths Knowledge and Skills Progression

Multiplication and Division

Key of Text Colours

National Curriculum Objectives

NC Objective appears elsewhere within the same topic progression document

NC Objective also appears in another topic progression document

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
MULTIPLICATION & DIVISION FACTS					
count in multiples of twos, fives and tens (Number: Place Value NC Objective)	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (Number: Place Value NC Objective)	count from 0 in multiples of 4, 8, 50 and 100 (Number: Place Value NC Objective)	count in multiples of 6, 7, 9, 25 and 1 000 (Number: Place Value NC Objective)	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (Number: Place Value NC Objective)	
	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					
solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher (Objective also shown in Problem Solving)		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 (Objective also shown 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 (Objective also shown in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) (Fractions NC Objective)

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WRITTEN CALCULATION					
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) 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 (Objective also shown 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 3 digits by a one-digit number using the formal written method of short division including those with a remainder written as 'r' <i>(This is not statutory until Year 5 but as a school we have decided this step to be necessary in this year group to support progression in this area through Y5 and Y6)</i>	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 (Fractions: using decimals NC Objective)

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PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS					
			recognise and use factor pairs and commutativity in mental calculations (Objective also shown in Mental Calculation)	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 (Fractions NC Objective)
				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 (Measures NC Objective)
ORDER OF OPERATIONS					
					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 (Addition & Subtraction NC Objective)	estimate and use inverse operations to check answers to a calculation (Addition & Subtraction NC Objective)		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy