

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
MULTIPLICATION & DIVISION FACTS	Three and Four-Year-Olds Reception Early Learning Goals						
	Explore the composition of numbers to 10.	count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	To make connections between arrays, number patterns, and counting in twos, fives and tens. Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.	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	To apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.	To continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
MENTAL CALCULATION	Explore the composition of numbers to 10. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.		<i>Begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations</i> <i>Begin to relate multiplication and division facts to fractions and measures (e.g., $40 \div 2 = 20$, 20 is a half of 40)</i>	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	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 <i>Write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$)</i> <i>Combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations, e.g. $2 \times 6 \times 5 = 10 \times 6 = 60$.</i> <i>Practise mental methods and extend this to three-digit numbers to derive associative facts, (e.g. $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$).</i>	multiply and divide numbers mentally drawing upon known facts	perform mental calculations, including with mixed operations and large numbers

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places
WRITTEN CALCULATION			calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$),	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know,	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

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			division ($\div$) and equals (=) signs	including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	<i>Become fluent in the formal written method of short division with exact answers.</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
PROPERTIES OF NUMBERS	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.				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 <i>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</i>
						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	<i>calculate, estimate and compare volume of cubes and cuboids using standard units,</i>

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)	<i>including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³</i>
ORDER OF OPERATIONS							use their knowledge of the order of operations to carry out calculations involving the four operations
INVERSE OPERATIONS, ESTIMATING & CHECKING ANSWERS			<i>begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</i> <i>use commutativity and inverse relations to develop multiplicative reasoning (for example, $4 \times 5 = 20$ and $20 \div 5 = 4$).</i>	<i>estimate the answer to a calculation and use inverse operations to check answers</i>	<i>estimate and use inverse operations to check answers to a calculation</i>	use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres.	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

SHCPS Progression in Number: Multiplication & Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
PROBLEM SOLVING	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.	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 and a combination of these, including understanding the meaning of the equals sign	solve problems involving addition, subtraction, multiplication and division
						solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	<i>solve problems involving similar shapes where the scale factor is known or can be found</i>