



Maths Progression of Skills and Knowledge Assessment Grid
Multiplication and Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division Facts	<p>count in multiples of twos, fives and tens (copied from Number and Place Value)</p>	<p>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)</p> <p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p>	<p>count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)</p> <p>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p>	<p>count in multiples of 6, 7, 9, 25 and 1000 (copied from Number and Place Value)</p> <p>recall multiplication and division facts for multiplication tables up to 12×12</p>	<p>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)</p>	

Mental Calculations

show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

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

recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)

multiply and divide numbers mentally drawing upon known facts

multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

perform mental calculations, including with mixed operations and large numbers

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) (copied from Fractions)

Written Methods

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 (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

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

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 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

							<i>to two decimal places (copied from Fractions (including decimals))</i>
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**Properties of Numbers:
Multiples, Factors, Primes, Square and Cube Numbers**

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

calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre

recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)

cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³ (copied from Measures)

<p>Order of operations</p>						<p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>
<p>Inverse operations, estimating and checking answers</p>			<p><i>estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)</i></p>	<p><i>estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)</i></p>		<p>use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy</p>

Problem Solving

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

problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

solve problems involving addition, subtraction, multiplication and division

solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)