

# Progression Document - National curriculum and 'Ready to Progress' mapping (EYFS – See NSM section)



Table 1 - National Curriculum Objectives

Table 2 - Ready To Progress Criteria

Table 3 - Small Steps

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
National Curriculum Objectives	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	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 $12 \times 12$	identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	
		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	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers	know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	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	
	show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	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	recognise and use factor pairs and commutativity in mental calculations	establish whether a number up to 100 is prime and recall prime numbers up to 19	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	
				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	perform mental calculations, including with mixed operations and large numbers	
		solve problems involving multiplication and division, 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 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	multiply and divide numbers mentally, drawing upon known facts	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	identify common factors, common multiples and prime numbers	
				multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ )	use their knowledge of the order of operations to carry out calculations involving the 4 operations	
		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	use estimation to check	use estimation to check	use estimation to check	use estimation to check
					use estimation to check	use estimation to check	use estimation to check
					use estimation to check	use estimation to check	use estimation to check
		solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	use estimation to check	use estimation to check	use estimation to check
use estimation to check	use estimation to check				use estimation to check		

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	Ready to Progress Criteria	Block	Steps
Year 1			-
			-
			-
			-
			-
Year 2	2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	Spr 2	<ul style="list-style-type: none"> <li>- Introduce the multiplication symbol</li> <li>- Multiplication sentences</li> <li>- The 2 times-table</li> <li>- The 10 times-table</li> <li>- The 5 times-table</li> <li>- The 5 and 10 times-tables</li> </ul>
		Spr 4	<ul style="list-style-type: none"> <li>- Four operations with column and capacity</li> </ul>
		Sum 2	<ul style="list-style-type: none"> <li>- Tell the time to 5 minutes</li> <li>- Minutes in an hour</li> </ul>
	2MD-2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	Spr 2	<ul style="list-style-type: none"> <li>- Make equal groups</li> <li>- Make equal groups – grouping</li> <li>- Make equal groups – sharing</li> <li>- Divide by 2</li> <li>- Divide by 10</li> <li>- Divide by 5</li> </ul>
Year 3	3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.	Aut 3	<ul style="list-style-type: none"> <li>- All steps in this block relate to this criterion</li> </ul>
		Spr 1	<ul style="list-style-type: none"> <li>- All steps in this block relate to this criterion</li> </ul>
Year 4	4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	Spr 1	<ul style="list-style-type: none"> <li>- Multiply by 10</li> <li>- Multiply by 100</li> <li>- Divide by 10</li> <li>- Divide by 100</li> </ul>
	4MD-2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	Aut 4	<ul style="list-style-type: none"> <li>- All 13 steps in this block relate to this criterion</li> </ul>
	4MD-3 Understand and apply the distributive property of multiplication.	Spr 1	<ul style="list-style-type: none"> <li>- Informal written methods for multiplication</li> <li>- Multiply a 2-digit number by a 1-digit number</li> <li>- Multiply a 3-digit number by a 1-digit number</li> </ul>

	Ready to Progress Criteria	Block	Steps
Year 5	5MD-1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	Aut 3	<ul style="list-style-type: none"> <li>- Multiply by 10, 100 and 1,000</li> <li>- Divide by 10, 100 and 1,000</li> <li>- Multiples of 10, 100 and 1,000</li> </ul>
		Sum 3	<ul style="list-style-type: none"> <li>- Multiply by 10, 100 and 1,000</li> <li>- Divide by 10, 100 and 1,000</li> <li>- Multiply and divide decimals - missing values</li> </ul>
	5MD-2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	Aut 3	<ul style="list-style-type: none"> <li>- Multiples</li> <li>- Common multiples</li> <li>- Factors</li> <li>- Common factors</li> <li>- Square numbers</li> </ul>
	5MD-3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	Spr 1	<ul style="list-style-type: none"> <li>- Multiply up to a 4-digit number by a 1-digit number</li> <li>- Multiply a 2-digit number by a 2-digit number (area model)</li> <li>- Multiply a 2-digit number by a 2-digit number</li> <li>- Multiply a 3-digit number by a 2-digit number</li> <li>- Multiply a 4-digit number by a 2-digit number</li> </ul>
	5MD-4 Divide a number with up to 4 digits by a one digit number using a formal written method, and interpret remainders appropriately for the context.	Spr 1	<ul style="list-style-type: none"> <li>- Short division</li> <li>- Divide a 4-digit number by a 1-digit number</li> <li>- Divide with remainders</li> </ul>
Year 6	6AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	Spr 1	<ul style="list-style-type: none"> <li>- Add or multiply?</li> <li>- Scale drawing</li> <li>- Use scale factors</li> <li>- Similar shapes</li> <li>- Ratio problems</li> <li>- Proportion problems</li> <li>- Recipes</li> </ul>
	6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	Aut 2	<ul style="list-style-type: none"> <li>- Solve problems with multiplication</li> <li>- Division using factors</li> <li>- Solve problems with division</li> <li>- Solve multi-step problems</li> <li>- Reason from known facts</li> </ul>
	6AS/MD-3 Solve problems involving ratio relationships.	-	- See under Ratio and Proportion
	6AS/MD-4 Solve problems with 2 unknowns.	-	- See under Algebra

## White Rose Maths National Curriculum Smaller Steps linked to Ready to Progress Criteria

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall / Use	•	<b>Spr 2</b> <ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li> </ul>	<b>Aut 3 &amp; Spr 1</b> <ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> </ul>	<b>Aut 4 &amp; Spr 1</b> <ul style="list-style-type: none"> <li>recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>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</li> <li>recognise and use factor pairs and commutativity in mental calculations</li> </ul>	<b>Aut 3</b> <ul style="list-style-type: none"> <li>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers</li> <li>establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>)</li> </ul>	<b>Aut 2</b> <ul style="list-style-type: none"> <li>identify common factors, common multiples and prime numbers</li> <li>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> </ul>
Calculations	•	<b>Spr 2</b> <ul style="list-style-type: none"> <li>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (<math>=</math>) signs</li> </ul>	<b>Aut 3 &amp; Spr 1</b> <ul style="list-style-type: none"> <li>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</li> </ul>	<b>Spr 1</b> <ul style="list-style-type: none"> <li>multiply two-digit and three-digit numbers by a one digit number using formal written layout</li> </ul>	<b>Aut 3 &amp; Apr 1</b> <ul style="list-style-type: none"> <li>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</li> <li>multiply and divide numbers mentally drawing upon known facts</li> <li>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</li> <li>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> </ul>	<b>Aut 2</b> <ul style="list-style-type: none"> <li>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>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</li> <li>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</li> <li>perform mental calculations, including with mixed operations and large numbers</li> </ul>

Problems	<b>Sum 1</b> <ul style="list-style-type: none"> <li>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</li> </ul>	<b>Spr 2</b> <ul style="list-style-type: none"> <li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</li> </ul>	<b>Spr 1</b> <ul style="list-style-type: none"> <li>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</li> </ul>	<b>Spr 1</b> <ul style="list-style-type: none"> <li>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</li> </ul>	<b>Sut 3 &amp; Spr 1</b> <ul style="list-style-type: none"> <li>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes                             <ul style="list-style-type: none"> <li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul> </li> </ul>	<b>Aut 2</b> <ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication and division</li> </ul>
Combined		•	•	•	<b>Spr 1</b> <ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	<b>Aut 2</b> <ul style="list-style-type: none"> <li>use their knowledge of the order of operations to carry out calculations involving the four operations</li> </ul>