



Coverage and progression of multiplication and division across year groups

	1	2	3	4	5	6
Autumn 1						
Autumn 2						<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> • identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> • 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 long division, and interpret remainders as whole number remainders, fractions, or by

						<p>rounding, as appropriate for the context</p> <ul style="list-style-type: none">• 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• perform mental calculations, including with mixed operations and large numbers <p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none">• solve problems involving addition, subtraction, multiplication and division <p><u>Multiplication and division: combined</u></p> <ul style="list-style-type: none">• use their knowledge of the order of operations to carry out calculations involving the four operations <p><u>RTP: Addition subtraction, multiplication and division</u></p> <p><u>6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic</u></p>
--	--	--	--	--	--	--

						<p>properties, inverse relationships, and place-value understanding.</p> <p>8 – Solve problems with multiplication</p> <p>10 – Division using factors</p> <p>13 – Solve problems with division</p> <p>14 – Solve multi-step problems</p> <p>17 – Reason from known facts</p>
Autumn 3			<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> 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 <p>RTP Number facts</p> <p>3NF-2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these</p>		<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> 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) <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> multiply numbers up to 4 digits by a one- or two-digit number using a 	

			<p><u>multiplication tables as multiples of the corresponding number.</u></p> <p>3 – Multiples of 2 4 – Multiples of 5 and 10 5 – Sharing and grouping 9 – Multiply by 4 10 – Divide by 4 11 – The 4 times-table</p> <p><u>RTP Multiplication and division</u></p> <p><u>3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</u></p> <p>All 15 steps in this block relate to this criterion</p>		<p>formal written method, including long multiplication for two-digit numbers</p> <ul style="list-style-type: none"> • 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 • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 <p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none"> • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates <p><u>RTP Number facts</u> <u>5NF-1 Secure fluency in multiplication table facts, and</u></p>
--	--	--	--	--	---

					<p><u>corresponding division facts, through continued practice.</u> 1 – Multiples 2 – Common multiples 3 – Factors 4 – Common factors 6 – Square numbers</p> <p><u>5NF-2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).</u> 10 – Divide by 10, 100 and 1000</p> <p><u>RTP Multiplication and division</u> <u>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.</u> 8 – Multiply by 10, 100 and 1,000 9 – Divide by 10, 100 and 1,000 10 – Multiples of 10, 100 and 1,000</p> <p><u>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.</u></p>	
--	--	--	--	--	--	--

Autumn 4

Multiplication and division: Recall / Use

- recall multiplication and division facts for multiplication tables up to 12×12
- 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

RTP Number facts

4NF-1 Recall multiplication and division facts up to 12×12 and recognise products in multiplication tables as multiples of the corresponding number.

All 13 steps in this block relate to this criterion

4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.

All 13 steps in this block relate to this criterion

1 – Multiples
2 – Common multiples
3 – Factors
4 – Common factors
6 – Square numbers

				<p><u>RTP Multiplication and division</u> <u>4MD-2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.</u> All 13 steps in this block relate to this criterion</p>		
Spring 1			<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> 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 <p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none"> solve problems, including missing number problems, involving multiplication and division, including positive integer 	<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> recall multiplication and division facts for multiplication tables up to 12×12 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 <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> multiply two-digit and three-digit numbers by a one-digit number using formal written layout <p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none"> solve problems involving multiplying and 	<p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> 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 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 multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 <p><u>Multiplication & division: Problems</u></p>	<p><u>RTP: Addition subtraction, multiplication and division</u> <u>6AS/MD-1</u> <u>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).</u> 1 – Add or multiply? 5 – Scale drawing 6 – Use scale factors 7 – Similar shapes 8 – Ratio problems 9 – Proportion problems 10 – Recipes <u>6AS/MD-3 Solve problems involving ratio relationships.</u></p>

			<p>scaling problems and correspondence problems in which n objects are connected to m objects</p> <p><u>RTP Number facts 3NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).</u></p> <p>1 – Multiples of 10 2 – Related calculations 10 – Scaling</p> <p><u>RTP Multiplication and division 3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</u></p> <p>All 11 steps in this block relate to this criterion</p>	<p>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</p> <p><u>RTP Number facts 4NF-1 Recall multiplication and division facts up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number.</u></p> <p>1 – Factor pairs 2 – Use factor pairs 7 – Related facts – multiplication and division 8 – Informal written methods for multiplication 9 – Multiply a 2-digit number by a 1-digit number 10 – Multiply a 3-digit number by a 1-digit number</p> <p><u>4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.</u></p> <p>11 – Divide a 2-digit</p>	<ul style="list-style-type: none"> • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates <p><u>Multiplication and division: combined</u></p> <ul style="list-style-type: none"> • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign <p><u>RTP Number facts 5NF-1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.</u></p> <p>All 11 steps in this block relate to this criterion</p> <p><u>RTP Multiplication and division 5MD-3 Multiply any whole number with up to 4 digits by any</u></p>	
--	--	--	---	---	--	--

				<p>number by a 1-digit number (1) 1 2 – Divide a 2-digit number by a 1-digit number (2) 13 – Divide a 3-digit number by a 1-digit number</p> <p><u>4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100).</u> 4 – Multiply by 100 6 – Divide by 100</p> <p><u>RTP Multiplication and division</u> <u>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.</u> 3 – Multiply by 10 4 – Multiply by 100 5 – Divide by 10 6 – Divide by 100 <u>4MD-3 Understand and apply the distributive property of multiplication.</u> 8 – Informal written methods for multiplication 9 – Multiply a 2-digit number by a 1-digit number 10 – Multiply a 3 digit number by a 1 digit</p>	<p><u>one-digit number using a formal written method.</u> 1 – Multiply up to a 4-digit number by a 1-digit number 2 – Multiply a 2-digit number by a 2-digit number (area model) 3 – Multiply a 2-digit number by a 2-digit number 4 – Multiply a 3-digit number by a 2-digit number 5 – Multiply a 4-digit number by a 2-digit number <u>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.</u> 7 – Short division 8 – Divide a 4-digit number by a 1-digit number 9 – Divide with remainders</p>
--	--	--	--	---	---

				number		
Spring 2		<p><u>Multiplication and division: Recall / Use</u></p> <ul style="list-style-type: none"> recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot <p><u>Multiplication and division: Calculations</u></p> <ul style="list-style-type: none"> calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs <p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none"> solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 			<p><u>RTP Number facts 5NF-1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.</u></p> <p>All 7 steps in this block relate to this criterion</p>	<p><u>RTP: Addition subtraction, multiplication and division 6AS/MD-4 Solve problems with 2 unknowns.</u></p>

		<p><u>RTP Multiplication and division</u> <u>2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</u> 4 – Introduce the multiplication symbol 5 – Multiplication sentences 9 – The 2 times-table 13 – The 10 times-table 15 – The 5 times-table 17 – The 5 and 10 times-tables <u>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).</u> 2 – Make equal groups 7 – Make equal groups – grouping 8 – Make equal groups – sharing 10 – Divide by 2 14 – Divide by 10 16 – Divide by 5</p>				
Spring 3			<p><u>RTP Number facts</u> <u>3NF-3 Apply place-value knowledge to known additive and</u></p>		<p><u>RTP Multiplication and division</u></p>	

			<p><u>multiplicative number facts (scaling facts by 10).</u> 6 – Fractions and scales 9 – Equivalent fractions on a number line 10- Equivalent fractions as bar models</p>			
Spring 4		<p><u>RTP Multiplication and division</u> <u>2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</u> 8 – Four operations with volume and capacity</p>		<p><u>RTP Number facts</u> <u>4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100).</u> 10-Divide a 1 or 2 digit number by 100</p>		
Summer 1	<p><u>Multiplication & division: Problems</u></p> <ul style="list-style-type: none"> • 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 <p><u>RTP Number facts</u> <u>1NF-2 Count forwards and backwards in</u></p>					

	<u>multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</u>					
Summer 2		<u>RTP Multiplication and division 2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</u>				
Summer 3					<u>RTP Multiplication and division 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.</u>	
Summer 4	<u>RTP Number facts 1NF-2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</u>					

Summer 5	<u>RTP Number facts</u> <u>1NF-2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</u>					
----------	--	--	--	--	--	--