

MULTIPLICATION AND DIVISION FACTS							
Foundation Stage 1	Foundation Stage 2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Count in multiples of twos, fives and tens <b>(Number and Place Value)</b>	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward <b>(Number and Place Value)</b>  Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.	Count from 0 in multiples of 4, 8, 50 and 100 <b>(Number and Place Value)</b>  Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Count in multiples of 6, 7, 9, 25 and 1 000 <b>(Number and Place Value)</b>  Recall multiplication and division facts for multiplication tables up to $12 \times 12$	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 <b>(Number and Place Value)</b>	
MENTAL CALCULATION							
			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	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  <i>Associate a fraction with division and calculate decimal equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>) (copied from Fractions)</i>

IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS							
			<p>2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</p>	<p>3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</p>	<p>4MD-1 To 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.</p>	<p>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</p> <p>5MD-3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method</p> <p>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.</p>	
			<p>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 (=) signs</p>	<p>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>	<p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>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</p>	<p>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</p>

				(appears also in Mental Methods)		remainders appropriately for the context	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
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PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS

			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).		4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	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.	
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					<p>Recognise and use factor pairs and commutativity in mental calculations (repeated)</p>	<p>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 <math>()^2</math> for squared <math>()^3</math> and cubed <math>()^3</math></p>	<p>Identify common factors, common multiples and prime numbers</p> <p><i>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions) calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units such as <math>\text{mm}^3</math> and <math>\text{km}^3</math> (copied from Measures)</i></p>
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## ORDER OF OPERATIONS

							Use their knowledge of the order of operations to carry out calculations involving the four operations
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## INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS

				<i>Estimate the answer to a calculation and use inverse operations to check answers</i> (copied from Addition and Subtraction)	<i>Estimate and use inverse operations to check answers to a calculation</i> (copied from Addition and Subtraction)		Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy
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## 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	Solve problems involving addition, subtraction, multiplication and division <i>solve problems involving similar shapes where the scale factor is known or can be found</i> (copied from Ratio and Proportion)
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						a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	
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