Winton Primary School   **Maths curriculum**

	TO MULTIPLY AND DIVIDE		
	Milestone 1	**Milestone 2**	**Milestone 3**
Multiplication & division problem solving	• **Solve one-step problems involving multiplication and division using concrete objects, pictorial representations and arrays with support (Y1)** • **Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts (Y2)**	• Solve contextual problems involving known multiplication and division facts. • Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context (Y4) • **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 (Y3)**	• **Solve problems involving addition, subtraction, multiplication and division and 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 (Y5)** • **Use knowledge of the order of operations to carry out calculations (BIDMAS) (Y6)**

In bold – National curriculum objectives for the year group.

In blue - Ready-to-progress criteria identified as the most important conceptual knowledge and understanding that pupils need as they progress to the next year's curriculum.

Multiplication & division methods	• **Write mathematical statements using multiplication (x), division (÷) and equals (=) symbols (Y2)**
	• Solve problems involving multiplication and division using mental methods
	• Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables
	• Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division)
		• Apply place value, known and derived facts to multiply and divide mentally, including: scaling by 10, multiplying by 0 and 1; dividing by 1; multiplying together three numbers (Y3)
		• Use short multiplication for 1-digit times 2-digit numbers (Y4)
		• **Multiply two-digit and three-digit numbers by a one-digit number using formal written layout (Y4)**
		• **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 (Y4)**
		• **Recognise, use and manipulate factor pairs and commutativity in mental calculations (Y4)**
		• Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100) (Y4)
		• 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 (Y4)
			• **Use long multiplication for multiplying numbers up to 4 digits by two-digits.**
			  - Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.
			• **Use long multiplication for one-digit numbers with up to 2 decimal places by whole numbers (Y6)**
			• Divide numbers up to 4 digits by a one-digit number using short division (bus stop).
			• **Use short division for one-digit numbers with up to 2 decimal places by whole numbers (Y6)**
			• **Divide numbers up to 4 digits by a two-digit number using long division and interpret the remainders as whole number remainders, fractions or by rounding, as appropriate for the context (Y6)**
			• Interpret remainders appropriately for the context.
			• **Multiply and divide numbers mentally drawing upon known facts.**
			  - Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.
			• **Perform mental calculations, including with mixed operations and large numbers (Y6)**

Checking	• Use known multiplication facts to check the accuracy of calculations	• **Recognise and use the inverse relationship between multiplication and division and use this to check calculations and solve missing number problems.**	• Estimate and use inverse operations and rounding to check answers to a calculation • **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy (Y6)**

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Using multiplication & division facts	- Know the 2 times table (Y2) - Know the 5 times table (Y2) - Know the 10 times table (Y2) - Recognise odd and even numbers (Y2) - Recognise doubles to double 6 (Y1) - Half even numbers up to 12 (Y1) - Recall doubles of numbers to 12 (Y2) - Recall halves of even numbers to 24 (Y2) - Use multiplication and division facts to solve problems **Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot (Y2)**	- Know the 3 times table (Y3) - Know the 4 times table (Y3) - Know the 8 times table (Y3) - Know the 6 times table (Y4) - Know the 7 times table (Y4) - Know the 9 times table (Y4) - Know the 11 times table (Y4) - Know the 12 times table (Y4) - Recall multiplication and division facts up to 12, and recognise products in multiplication tables as multiples of the corresponding number (Y4) **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 (Y4)** - Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts (Y4)	- Identify multiples and factors including finding common factors (Y5) **Identify common factors, common multiples, and prime numbers (Y6)** **Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.** **Establish whether a number up to 100 is prime.** **Recall prime numbers up to 19 (Y5)** **Multiply and divide numbers by 10, 100 and 1000 up to 3 decimal places (Y5)** - 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. - Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). **Recognise and use square numbers and cube numbers (Y5)** **Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes** - 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) (Y6) - Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. (Y6)

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