

Fluency Strands Year 2 onwards

Term	Theme	Year 2 objectives from NC	Year 3 objectives from NC	Year 4 objectives from NC	Year 5 objectives from NC	Year 6 objectives from NC
Autumn1	Counting	<ul style="list-style-type: none"> count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward They count in multiples of three to support their later understanding of a third. Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line. This reinforces the concept of fractions as numbers and that they can add up to more than one. 	<ul style="list-style-type: none"> count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100. Using a variety of representations, including those related to measure, pupils continue to count in ones, tens and hundreds, so that they become fluent in the order and place value of numbers to 1000. count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 count backwards through zero to include negative numbers pupils become fluent in the order and place value of numbers beyond 1000, including counting in tens and hundreds, and maintaining fluency in other multiples through varied and frequent practice. count up and down in hundredths They practise counting using simple fractions and decimals, both forwards and backwards. 	<ul style="list-style-type: none"> count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero Pupils continue to practise counting forwards and backwards in simple fractions. Pupils extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line. 	
	Rounding and estimating	<ul style="list-style-type: none"> identify, represent and estimate numbers using different representations, including the number line choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$C); capacity (litres/ml) to the nearest appropriate unit, 	<ul style="list-style-type: none"> estimate the answer to a calculation and use inverse operations to check answers 	<ul style="list-style-type: none"> round any number to the nearest 10, 100 or 1000 They connect estimation and rounding numbers to the use of measuring instruments. estimate and use inverse operations to check answers to a calculation round decimals with one decimal place to 	<ul style="list-style-type: none"> round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy round decimals with two decimal places to the nearest whole number and to one decimal place 	<ul style="list-style-type: none"> round any whole number to a required degree of accuracy Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc., but not to a specified number of significant figures. solve problems which require answers to be rounded to specified degrees of accuracy

				<p>the nearest whole number</p> <ul style="list-style-type: none"> • identify, represent and estimate numbers using different representations • estimate, compare and calculate different measures, including money in pounds and pence 		<ul style="list-style-type: none"> • Pupils also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers. • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • calculate, estimate and compare volume of cubes and cuboids using standard units
Autumn 2	Adding and subtracting powers of 10	<ul style="list-style-type: none"> • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> ○ a two-digit number and ones ○ a two-digit number and tens 	<ul style="list-style-type: none"> • add and subtract numbers mentally, including: <ul style="list-style-type: none"> ○ a three-digit number and ones ○ a three-digit number and tens ○ a three-digit number and hundreds 	<ul style="list-style-type: none"> • find 1000 more or less than a given number 	<ul style="list-style-type: none"> • add and subtract numbers mentally with increasingly large numbers • They practise mental calculations with increasingly large numbers to aid fluency (for example, $12\ 462 - 2300 = 10\ 162$). 	
	Time tables 1	<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 • They practise to become fluent in the 2, 5 and 10 multiplication tables and connect them to each other. They connect the 10 	<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they 	<ul style="list-style-type: none"> • recall multiplication and division facts for multiplication tables up to 12×12 • Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency. 	<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply and divide numbers mentally drawing upon known facts 	<ul style="list-style-type: none"> • identify common factors, common multiples and prime numbers • Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.

		<p>multiplication table to place value, and the 5 multiplication table to the divisions on the clock face. They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</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, 	<p>connect the 2, 4 and 8 multiplication tables.</p> <ul style="list-style-type: none"> • Pupils develop efficient mental methods, for example, using commutativity and associativity (for example, $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$) and multiplication and division facts (for example, using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$) to derive related facts (for example, $30 \times 2 = 60$, $60 \div 3 = 20$ and $20 = 60 \div 3$). 	<ul style="list-style-type: none"> • Pupils write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, $2 \times 6 \times 5 = 10 \times 6 = 60$. • multiplying together three numbers 	<ul style="list-style-type: none"> • recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) • They use and understand the terms factor, multiple and prime, square and cube numbers. • They understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements (for example, $4 \times 35 = 2 \times 2 \times 35$; $3 \times 270 = 3 \times 3 \times 9 \times 10 = 9^2 \times 10$). 	
Spring 1	Partitioning	<ul style="list-style-type: none"> • Pupils should partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) to support subtraction. 	<ul style="list-style-type: none"> • They use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, $146 = 100 + 40$ and 6, $146 = 130 + 16$). 			
	Reordering	<ul style="list-style-type: none"> • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition 	<ul style="list-style-type: none"> • 		<ul style="list-style-type: none"> • They mentally add and subtract tenths, and one-digit whole numbers and tenths. 	<ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • Pupils explore the order of operations using brackets; for example, $2 + 1 \times 3 = 5$ and $(2 + 1) \times 3 = 9$.

		<p>(for example, $5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5$). This establishes commutativity and associativity of addition.</p> <ul style="list-style-type: none"> • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 				
Spring 2	Compensating	<ul style="list-style-type: none"> • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$. 				
	Time tables	See above	See above	See above	See above	See above
Summer 1	Doubling		<ul style="list-style-type: none"> • Through doubling, they connect the 2, 4 and 8 multiplication tables. 			
	Halving					
Summer 2	Multiplying and dividing by powers of 10	<ul style="list-style-type: none"> • They connect the 10 multiplication table to place value • They begin to understand zero as a place holder. 	<ul style="list-style-type: none"> • Pupils connect tenths to place value, decimal measures and to division by 10. 	<ul style="list-style-type: none"> • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1 • recognise that hundredths arise when dividing an object by 	<ul style="list-style-type: none"> • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	<ul style="list-style-type: none"> • identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

				<p>one hundred and dividing tenths by ten.</p> <ul style="list-style-type: none"> • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • Pupils' understanding of the number system and decimal place value is extended at this stage to tenths and then hundredths. This includes relating the decimal notation to division of whole number by 10 and later 100. • Pupils should connect hundredths to tenths and place value and decimal measure. 		
	Duration of time/ partition over 60	<ul style="list-style-type: none"> • Know the number of minutes in an hour and the number of hours in a day. 	<ul style="list-style-type: none"> • know the number of seconds in a minute and the number of days in each month, year and leap year • Compare durations of events [for example to calculate the time taken by particular events or tasks]. 	<ul style="list-style-type: none"> • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. 	<ul style="list-style-type: none"> • solve problems involving converting between units of time • Pupils use all four operations in problems involving time and money, including conversions (for example, days to weeks, expressing the answer as weeks and days). 	