Symphony Assessment System – **Mathematics** Bold = **end of KS Performance Descriptors** which are, other than in exceptional circumstances, deemed essential for a pupil to be assessed at that step
Bold and Underlined are essential but not end of KS performance descriptors

Year Group	Year 4 (page 1 of 2)		
Point	25	27	29
Grade	4C	4B	4A
Assessment Milestone	Step 1	Step 2	Achieved Y4 *Refer to non-statutory guidance for exemplification*
Number and Place Value	■**confidently count on in multiples of 2, 3, 4, 5, 8, 10 ® 50 and 100 (from any given starting number)** ■**recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)** ■begin to identify, represent and estimate numbers four digit up to 9999 using different representations (using counters, jottings, pictures) ■begin to find 1000 more or less than a given number ■**read Roman numerals to 50 (I to L)** ■begin to understand the concept of negative numbers ■solve number and practical problems that involve all of the above	■begin to count in multiples of 25 and 1000 ■begin to identify, represent and estimate numbers four digit up to 9999 using different representations (using counters, jottings, pictures) ® ■order and compare numbers beyond 1000 using < > = ® ■round any number to the nearest 1000 ■find 1000 more or less than a given number ■**read Roman numerals to 100 (I to C)** and know that over time, the numeral system changed to include the concept of zero and place value. ■**count backwards through zero to include negative numbers** ■solve number and practical problems that involve all of the above and with increasingly large positive numbers up to 10 000	■count in multiples of 6, 9, 25 and 1000 ■use partitioning up to 9999 to solve problems ■beginning to identify, represent and estimate numbers up to 10 000 using different representations ■read, write and order numbers to 10 000 ■**round any number to the nearest 10, 100 or 1000** ■**read Roman numerals to 100 (I to C)** and know that over time, the numeral system changed to include the concept of zero and place value. ® ■begin to order and compare negative numbers ■**count forwards through zero from a negative number** ■**order and compare numbers beyond 1000 using >, < and =** ■solve number and practical problems that involve all of the above and with increasingly large positive numbers up to 10 000 and explain reasoning. Begin to solve problems with negative numbers in context e.g. temperature
Addition and Subtraction	■add and subtract numbers mentally, including: 4 digit numbers and ones (multiples of 10) 4 digit numbers and tens (multiples of 100) With different numbers of digits e.g. 3-digit +/- 2-digit (without crossing the 100s boundary) ■**add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction with answers exceeding 999** ■solve problems, using number facts, place value, and multiple step addition and subtraction. With numbers up to 100 explaining reasoning ■solve missing number problems involving addition and subtraction, which include balancing equations numbers up to 100, explaining reasoning	■**add and subtract numbers mentally, including:** □**4-digit numbers and hundreds (multiples of 100)** □**4-digit numbers and thousands (multiples of 1000)** *(including crossing the 100s boundary)* ■add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate not crossing thousands barrier ■begin to estimate and use inverse operations to check answers to a calculation with appropriate numbers (up to 9999) ■begin to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with numbers up to 9999 ■begin to solve missing number problems involving addition and subtraction with numbers bonds up to 1000, which include balancing equations	■**add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate, crossing the thousands barriers with different numbers of digits** e.g. 4-digit =? - 3-digit ■**estimate and use inverse operations to check answers to a calculation with appropriate numbers, explaining reasoning and beginning to ensure solutions make sense in the context of a problem** ■solve missing number problems involving addition and subtraction, which include balancing equations numbers up to 1000, explaining reasoning
Multiplication and Division	■**know facts for 2,3,4,5,8,10 times tables up to x12 ®** ■understand the term 'factor' ■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 *(e.g. Suppose that there were 10 children and 10 rats and that they all have the usual number of legs, there will be 60 legs in the town belonging to people and rats. But now, what if you were only told that there were 60 legs belonging to people and rats but you did not know how many children/rats there were – work out what solutions exist)* ■**use place value, known and derived facts to multiply and divide mentally, including:** □**multiplying by 0 and 1** □**dividing by 1** e.g. 2x3=6 so 600÷3=200	■know multiplication and division facts for 6 and 9 times tables ■recall multiplication and division facts for all multiplication tables up to 12 x12 ■recognise and use factor pairs and commutativity in mental calculations ■**multiply two-digit and three-digit numbers by a one-digit number using formal written layout** ■begin to divide two-digit and three-digit numbers by a one-digit number using formal written layout ■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 *(using appropriate x tables) see 4C for base example*	■know 7 and 11 times tables ■**instantly recall all facts for tables to 12x12** ■**begin to use formal method of short multiplication** ■**begin to use formal method of short division** ■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 *(using appropriate x tables) see 4C for base example* ■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 ■**multiply and divide whole numbers by 10, 100**
Problem Solving and Reasoning	Pupils demonstrate <u>mastery of the expectations of this year group by solving increasingly complex problems and</u> reasoning mathematically, using the content above.		

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Assessment Milestone	**Step 1**	**Step 2**	**Achieved Y4** *Refer to non-statutory guidance for exemplification*
Fractions (incl. Decimals)	■count up in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten ■compare and order unit fractions, and fractions with the same denominators using <,> = ® ■<u>add and subtract fractions with the same denominator within one whole [for example, $^5/_7 + ^1/_7 = ^6/_7$] with appropriate fractions</u> ® ■solve problems with simple non-unit fractions [$^3/_4$, $5^2/_3$,] to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number ■<u>round decimals with one decimal place to the nearest whole number</u> ■solve simple measure and money problems involving fractions and decimals to one decimal place	■count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten, including use of number line ■<u>recognise and show, using diagrams, families of common equivalent fractions</u> ½, ¼, $^1/_3$ ■<u>add and subtract fractions with the same denominator within and beyond 1</u> ■solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number ■<u>recognise and write decimal equivalents to ¼, ½, ¾</u> ■compare numbers with one decimal place ■solve simple measure and money problems involving fractions and decimals to two decimal places	■connect hundredths to tenths and place value and decimal measures ■<u>recognise and write decimal equivalents of any number of tenths or hundredths, including use of number line</u> ■compare numbers with two decimal places ■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 ■solve simple measure and money problems involving fractions and decimals to two decimal places, with mixed number of decimal places
Measurement	■**Find the area of rectilinear shapes by counting squares** ■measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m ■use decimal notation to record money ■**read and write analogue and digital time**	■ read labelled/unlabelled divisions for measure - in 25s, 50s, 100s, and other multiples of 1000) ■**convert time between analogue and digital 12- and 24-hour clocks (using am and pm)** ■compare and calculate different measures, including money in pounds and pence ■convert between different units of measure [for example, kilometre to metre, hour to minute]	■ begin to read (and apply to problem solving) labelled divisions for measure – including decimals (tenths) ■convert between different units of measure [for example, kilometre to metre, hour to minute] ® ■estimate, compare and calculate different measures, including money in pounds and pence ■<u>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days using appropriate amounts</u>
Properties of Shapes	■know names of common quadrilaterals ■know and name common triangles ■<u>identify all lines of symmetry in common 2-D shapes</u> ■complete a simple symmetric figure with respect to a specific line of symmetry	■compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ■identify lines of symmetry in 2-D shapes presented in different orientations ■<u>identify acute and obtuse angles</u>	■compare and order angles up to two right angles by size
Position and Direction	■<u>know and use all terms relating to compass directions</u>	■<u>describe positions on a 2-D grid as coordinates in the first quadrant</u> ■read, write and use pairs of co-ordinates (2,5) ■describe movements between positions as translations of a given unit to the left/right and up/down	■plot specified points and draw sides to complete a given polygon
Statistics	■<u>solve two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables</u> ®	■<u>draw and read line graphs</u>	■<u>draw and read line graphs</u> ® ■interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
Problem Solving and Reasoning	**Pupils demonstrate <u>mastery of the expectations of this year group by solving increasingly complex problems and</u> reasoning mathematically, using the content above.**		