

# NC2014 MATHEMATICS LIST

## OBJECTIVES and CHILD SPEAK TARGETS

### MATHEMATICS Key Stage 2 Year 5

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 2 Y5	Number Place Value			
KS 2 Y5	Number Place Value	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	<i>I can read, write, order and compare numbers to at least 1 000 000 and know the value of each digit.</i>	
KS 2 Y5	Number Place Value	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	<i>I count forwards or backwards in steps 10, 100, 1000, 10000 or 100000 for any given number up to 1000000.</i>	
KS 2 Y5	Number Place Value	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	<i>I can use negative numbers in my work and can count backwards and forwards to and from negative numbers.</i>	
KS 2 Y5	Number Place Value	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	<i>I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</i>	
KS 2 Y5	Number Place Value	Solve number problems and practical problems that involve numbers up to 1000000, negative numbers, rounding or jumping in steps.	<i>I can solve number problems and practical problems that involve numbers up to 1000000, negative numbers, rounding or jumping in steps.</i>	
KS 2 Y5	Number Place Value	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	<i>I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</i>	
KS 2 Y5	Addition Subtraction			
KS 2 Y5	Addition Subtraction	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).	<i>I can add and subtract whole numbers with more than 4 digits using written methods such as column addition and subtraction.</i>	
KS 2 Y5	Addition Subtraction	Add and subtract numbers mentally with increasingly large numbers.	<i>I can add and subtract larger numbers in my head.</i>	
KS 2 Y5	Addition Subtraction	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	<i>I round numbers to check the accuracy of my solution.</i>	
KS 2 Y5	Addition Subtraction	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	<i>I can solve addition and subtraction multi-step problems, deciding which operations and methods to use and why.</i>	
KS 2 Y5	Multiplication Division			

KS 2 Y5	Multiplication Division	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	<i>I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</i>	
KS 2 Y5	Multiplication Division	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.	<i>I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</i>	
KS 2 Y5	Multiplication Division	Establish whether a number up to 100 is prime and recall prime numbers up to 19.	<i>I know whether a number up to 100 is prime and recall prime numbers up to 19.</i>	
KS 2 Y5	Multiplication Division	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.	<i>I can multiply 4 digit numbers by a one- or two-digit number using a written method, including long multiplication for two-digit numbers.</i>	
KS 2 Y5	Multiplication Division	Multiply and divide numbers mentally drawing upon known facts.	<i>I multiply and divide numbers mentally drawing upon my times table knowledge and other number facts.</i>	
KS 2 Y5	Multiplication Division	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.	<i>I can divide 4 digit numbers by a one-digit number using the written method of short division and find the remainder.</i>	
KS 2 Y5	Multiplication Division	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	<i>I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</i>	
KS 2 Y5	Multiplication Division	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).	<i>I know what square numbers and cube numbers are, including the notation for squared (2) and cubed (3).</i>	
KS 2 Y5	Multiplication Division	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	<i>I can solve multiplication and division problems using my knowledge of factors and multiples, squares and cubes.</i>	
KS 2 Y5	Multiplication Division	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	<i>I can solve more difficult problems involving addition, subtraction, multiplication and division and a combination of these.</i>	
KS 2 Y5	Multiplication Division	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	<i>I can solve problems including scaling by simple fractions and problems involving simple rates.</i>	
KS 2 Y5	Fractions			
KS 2 Y5	Fractions	Compare and order fractions whose denominators are all multiples of the same number.	<i>I can compare and order fractions whose denominators are all multiples of the same number.</i>	
KS 2 Y5	Fractions	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	<i>I can name and write equivalent fractions of a given fraction, and show these in a drawing (including tenths and hundredths).</i>	
KS 2 Y5	Fractions	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements greater than 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$ ].	<i>I know what mixed numbers and improper fractions are and I can convert from one to the other [for example, <math>2/5 + 4/5 = 6/5 = 1 \frac{1}{5}</math>].</i>	
KS 2 Y5	Fractions	Add and subtract fractions with the same denominator and denominators	<i>I can add and subtract fractions with the same denominator and</i>	

		that are multiples of the same number.	<i>denominators that are multiples of the same number.</i>	
KS 2 Y5	Fractions	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	<i>I use diagrams and some fraction tools to multiply proper fractions (7/10) and mixed numbers (1 7/10) by whole numbers.</i>	
KS 2 Y5	Fractions	Read and write decimal numbers as fractions [for example, 0.71 = 71/100].	<i>I can read and write decimal numbers as fractions [for example, 0.71 = 71/100].</i>	
KS 2 Y5	Fractions	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	<i>I know what thousandths are and how to use them with tenths, hundredths and decimals.</i>	
KS 2 Y5	Fractions	Round decimals with two decimal places to the nearest whole number and to one decimal place.	<i>I can round decimals with two decimal places to the nearest whole number and to one decimal place.</i>	
KS 2 Y5	Fractions	Read, write, order and compare numbers with up to three decimal places.	<i>I can read, write, order and compare numbers with up to three decimal places.</i>	
KS 2 Y5	Fractions	Solve problems involving number up to three decimal places.	<i>I can solve problems involving numbers with up to three decimal places.</i>	
KS 2 Y5	Fractions	Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	<i>I know what the per cent symbol is (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.</i>	
KS 2 Y5	Fractions	Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	<i>I work on problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.</i>	
KS 2 Y5	Measurement			
KS 2 Y5	Measurement	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).	<i>I can convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</i>	
KS 2 Y5	Measurement	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	<i>I can change metric units to become imperial units such as inches, pounds and pints.</i>	
KS 2 Y5	Measurement	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.	<i>I can calculate the perimeter of multi-shape shapes in centimetres and metres.</i>	
KS 2 Y5	Measurement	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm <sup>2</sup> ) and square metres (m <sup>2</sup> ) and estimate the area of irregular shapes.	<i>I can calculate the area of rectangles in square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes.</i>	
KS 2 Y5	Measurement	Estimate volume [for example, using 1 cm <sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water].	<i>I can estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids] and capacity [for example, using water].</i>	
KS 2 Y5	Measurement	Solve problems involving converting between units of time.	<i>I can convert between the units of time.</i>	

KS 2 Y5	Measurement	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	<i>I can solve more difficult problems which involve units of measurement, decimal numbers and scales.</i>	
KS 2 Y5	Shape			
KS 2 Y5	Shape	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	<i>I can identify 3-D shapes, including cubes and other cuboids, from 2-D drawings.</i>	
KS 2 Y5	Shape	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	<i>I know that angles are measured in degrees and I can estimate and compare acute, obtuse and reflex angles.</i>	
KS 2 Y5	Shape	Draw given angles, and measure them in degrees ( $^{\circ}$ ).	<i>I can draw a given angle (such as <math>47^{\circ}</math>), and then measure them in degrees (<math>^{\circ}</math>).</i>	
KS 2 Y5	Shape	Identify angles at a point and one whole turn (total $360^{\circ}$ ).	<i>I know one whole turn - or a set of angles all around a point - measure a total of <math>360^{\circ}</math>.</i>	
KS 2 Y5	Shape	Identify angles at a point on a straight line and a turn (total $180^{\circ}$ ).	<i>I know that a straight line - or angles that add up to a straight line - measure <math>180^{\circ}</math>.</i>	
KS 2 Y5	Shape	Identify other multiples of $90^{\circ}$ .	<i>I can identify multiples of <math>90^{\circ}</math> (right angles).</i>	
KS 2 Y5	Shape	Use the properties of rectangles to deduce related facts and find missing lengths and angles.	<i>I can find the missing lengths and angles of a rectangle.</i>	
KS 2 Y5	Shape	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	<i>I know regular shapes have equal sides and angles and irregular shapes do not have equal sides and angles.</i>	
KS 2 Y5	Position			
KS 2 Y5	Position	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	<i>I can reflect or translate a shape on a grid.</i>	
KS 2 Y5	Statistics			
KS 2 Y5	Statistics	Solve comparison, sum and difference problems using information presented in a line graph.	<i>I can solve problems using a line graph to find the answers.</i>	
KS 2 Y5	Statistics	Complete, read and interpret information in tables, including timetables.	<i>I can find the information I need from a timetable or large table of data.</i>	