

# NC2014 MATHEMATICS LIST

## OBJECTIVES and CHILD SPEAK TARGETS

### MATHEMATICS Key Stage 1 Year 1

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 1 Y1	Number Place Value			
KS 1 Y1	Number Place Value	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	<i>I can count up and down from 0 to 100 and more.</i>	
KS 1 Y1	Number Place Value	Count, read and write numbers to 100 in numerals.	<i>I can count, read and write numbers up to 100.</i>	
KS 1 Y1	Number Place Value	Count in multiples of twos, fives and tens.	<i>I can count in 2 or 5 or 10.</i>	
KS 1 Y1	Number Place Value	Given a number, identify one more and one less.	<i>When you show me a number, I can tell you what is one more and one less.</i>	
KS 1 Y1	Number Place Value	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	<i>I can find numbers on a number line when I am solving problems with questions using equal to, more than, less than, most and least.</i>	
KS 1 Y1	Addition Subtraction			
KS 1 Y1	Addition Subtraction	Read and write numbers from 1 to 20 in numerals and words.	<i>I read and write numbers from 1 to 20 in numbers and words.</i>	
KS 1 Y1	Addition Subtraction	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.	<i>I know and can use the maths symbols + - and = in a number sentence.</i>	
KS 1 Y1	Addition Subtraction	Represent and use number bonds and related subtraction facts within 20.	<i>I know my number bond facts to 20 - such as <math>1+5 = 6</math> and <math>5 = 6 - 1</math>.</i>	
KS 1 Y1	Addition Subtraction	Add and subtract one-digit and two-digit numbers to 20, including zero.	<i>I add and subtract numbers up to 20 - such as <math>5+5</math> or <math>12-8</math>.</i>	
KS 1 Y1	Addition Subtraction	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ .	<i>I can solve some number problems such as <math>7 = ? - 9</math>.</i>	
KS 1 Y1	Multiplication Division			

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KS 1 Y1	Multiplication Division	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.	<i>I answer maths multiplication or division problems with help from an adult and using objects to see what the problem means.</i>	
KS 1 Y1	Fractions			
KS 1 Y1	Fractions	Recognise, find and name a half as one of two equal parts of an object, shape or quantity.	<i>I know that a half is one of two equal parts, and I find half of a shape or a set of objects by sharing the shape or set into two equal parts.</i>	
KS 1 Y1	Fractions	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	<i>I find a quarter of a shape or a set of objects by sharing the shape or set into four equal parts.</i>	
KS 1 Y1	Measurement			
KS 1 Y1	Measurement	Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half].	<i>I use words such as long/short, longer/shorter, tall/short, double/half to describe my maths work when I am measuring.</i>	
KS 1 Y1	Measurement	Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than].	<i>When weighing, I use the words heavy/light, heavier than, lighter than to explain my work.</i>	
KS 1 Y1	Measurement	Compare, describe and solve practical problems for capacity and volume [for example, full/empty, more than, less than, half, half full, quarter].	<i>When working with capacity, I use the words full/empty, more than, less than, half, half full and quarter to explain my work.</i>	
KS 1 Y1	Measurement	Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later].	<i>I can answer questions about time, such as Who is quicker? or What is earlier?</i>	
KS 1 Y1	Measurement	Measure and begin to record lengths and heights.	<i>I can measure the length or height of something and write down what measure.</i>	
KS 1 Y1	Measurement	Measure and begin to record mass/weight.	<i>I can measure how heavy an object is and write down what I find.</i>	
KS 1 Y1	Measurement	Measure and begin to record capacity and volume.	<i>I can measure the capacity of jugs of water and write down what I measure.</i>	
KS 1 Y1	Measurement	Measure and begin to record time (hours, minutes, seconds).	<i>I can measure how long something takes to happen - such as how long it takes me to run around the playground.</i>	
KS 1 Y1	Measurement	Recognise and know the value of different denominations of coins and notes.	<i>I know that coins have different values - such as 2p, 5p, 10p and 50p.</i>	
KS 1 Y1	Measurement	Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	<i>I use special time words such as before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</i>	
KS 1 Y1	Measurement	Recognise and use language relating to dates, including days of the week, weeks, months and years.	<i>I can tell you the days of the week and months of the year and I can talk about weeks and months and years and what they mean.</i>	

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KS 1 Y1	Measurement	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	<i>I can tell the time and draw hands on a clock for to the hour and half past the hour times.</i>	
KS 1 Y1	Shape			
KS 1 Y1	Shape	Recognise and name common 2-D and 3-D shapes, including 2-D shapes [for example, rectangles (including squares), circles and triangles].	<i>I can name common 2-D shapes such as rectangles, squares, circles and triangles.</i>	
KS 1 Y1	Shape	Recognise and name common 2-D and 3-D shapes, including 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	<i>I can name some 3-D shapes such as cuboids and cubes, pyramids and spheres.</i>	
KS 1 Y1	Position			
KS 1 Y1	Position	Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	<i>I can describe my position, direction and movement, including whole turns, half turns, quarter turns and three-quarter turns.</i>	

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# MATHEMATICS Key Stage 1 Year 2

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 1 Y2	Number Place Value			
KS 1 Y2	Number Place Value	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	<i>I can count forward and backward in steps of 2, 3, and 5 from 0, and make jumps in tens from any number.</i>	
KS 1 Y2	Number Place Value	Recognise the place value of each digit in a two-digit number (tens, ones).	<i>I know what each digit means in Tens and Unit numbers such as 24.</i>	
KS 1 Y2	Number Place Value	Identify, represent and estimate numbers using different representations, including the number line.	<i>I can find and show numbers on a number line.</i>	
KS 1 Y2	Number Place Value	Compare and order numbers from 0 up to 100.	<i>I can order numbers up to 100 and tell you which numbers are bigger or smaller.</i>	
KS 1 Y2	Number Place Value	Use greater than, less than and = signs.	<i>I use the greater than, less than and equals signs in maths and know what they mean.</i>	
KS 1 Y2	Number Place Value	Read and write numbers to at least 100 in numerals and in words.	<i>I can read and write numbers to 100 in digits and words.</i>	
KS 1 Y2	Number Place Value	Use place value and number facts to solve problems.	<i>I solve problems using number facts such as <math>18+2=20</math> and what I know about the value of digits in a number.</i>	
KS 1 Y2	Addition Subtraction			
KS 1 Y2	Addition Subtraction	Using concrete objects and pictorial representations, including those involving numbers, quantities and measures.	<i>I answer addition and subtraction maths problems using objects to help me work it out.</i>	
KS 1 Y2	Addition Subtraction	Applying their increasing knowledge of mental and written methods.	<i>I can solve addition and subtraction problems and work out how I answer it on paper or show you how I did it in my head by explaining step by step.</i>	
KS 1 Y2	Addition Subtraction	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.	<i>I answer problems with addition and subtraction using my number facts to 20 and other number facts up to 100.</i>	
KS 1 Y2	Addition Subtraction	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and ones.	<i>I can add and subtract numbers such as <math>34 - 8</math> or <math>52 + 5</math> using objects or pictures to help.</i>	
KS 1 Y2	Addition Subtraction	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and tens.	<i>I add and subtract two-digit numbers using objects to help me.</i>	
KS 1 Y2	Addition Subtraction	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including two two-digit numbers.	<i>I can add or subtract numbers such as <math>42 - 22</math> or <math>56 + 29</math> using objects or pictures to help me.</i>	
KS 1 Y2	Addition	Add and subtract numbers using concrete objects, pictorial	<i>I can add or subtract three numbers such as <math>2 + 5 + 9</math>.</i>	

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	Subtraction	representations, and mentally, including adding three one-digit numbers.		
KS 1 Y2	Addition Subtraction	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	<i>I know that adding to numbers together can be done in any order but subtracting numbers can only be done in one order.</i>	
KS 1 Y2	Addition Subtraction	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	<i>I can check my answers or solve missing number problems by doing an inverse check.</i>	
KS 1 Y2	Multiplication Division			
KS 1 Y2	Multiplication Division	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	<i>I know my 2 and 5 and 10 times tables by heart and can tell whether a number is odd or even.</i>	
KS 1 Y2	Multiplication Division	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.	<i>I use multiplication (x), division (÷) and equals (=) signs when writing out my times tables.</i>	
KS 1 Y2	Multiplication Division	Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	<i>I know that the multiplication of two numbers can be done in any order, but that the division of numbers can only be done in one order.</i>	
KS 1 Y2	Multiplication Division	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	<i>I can solve multiplication and division problems using times table facts and objects or pictures to help me.</i>	
KS 1 Y2	Fractions			
KS 1 Y2	Fractions	Recognise, find, name and write fractions $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.	<i>I can find <math>\frac{1}{3}</math> or <math>\frac{1}{4}</math> or <math>\frac{2}{4}</math> or <math>\frac{3}{4}</math> of a shape, length or set of objects.</i>	
KS 1 Y2	Fractions	Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	<i>I can write simple fractions sentences such as <math>\frac{1}{2}</math> of <math>6 = 3</math> and know that <math>\frac{2}{4}</math> equals <math>\frac{1}{2}</math>.</i>	
KS 1 Y2	Measurement			
KS 1 Y2	Measurement	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.	<i>I can choose, use and measure the correct unit to measure length or height in any direction (m/cm); weight (kg/g); temperature (°C); or capacity (litres/ml).</i>	
KS 1 Y2	Measurement	Compare and order lengths, mass, volume/capacity and record the results using symbols for greater than, less than and =.	<i>I can compare and order lengths, weight and capacity and then record the results using symbols for greater than, less than and equals.</i>	
KS 1 Y2	Measurement	Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.	<i>I know and use the symbols for pounds (£) and pence (p) and can add together different amounts of money, such as 253p and £2.</i>	
KS 1 Y2	Measurement	Find different combinations of coins that equal the same amounts of	<i>I can find different combinations of coins that equal the same</i>	

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		money.	amounts of money.	
KS 1 Y2	Measurement	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	<i>I have solved money problems such as how much change do I get from 50p if I buy an apple for 35p?</i>	
KS 1 Y2	Measurement	Compare and sequence intervals of time.	<i>I can put the time of events in order.</i>	
KS 1 Y2	Measurement	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	<i>I can tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.</i>	
KS 1 Y2	Measurement	Know the number of minutes in an hour and the number of hours in a day.	<i>I know there are 60 minutes in an hour and 24 hours in a day.</i>	
KS 1 Y2	Shape			
KS 1 Y2	Shape	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.	<i>I can describe the properties of some 2-D shapes, including the number of sides they have and facts about their symmetry.</i>	
KS 1 Y2	Shape	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.	<i>I can describe the properties of some 3-D shapes, including the number of edges, faces and vertices they have.</i>	
KS 1 Y2	Shape	Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid].	<i>I can tell you which 2-D shapes appear as the faces on 3-D shapes, such as triangles on a pyramid.</i>	
KS 1 Y2	Shape	Compare and sort common 2-D and 3-D shapes and everyday objects.	<i>I can compare 2-D and 3-D shapes with everyday objects around me.</i>	
KS 1 Y2	Position			
KS 1 Y2	Position	Order and arrange combinations of mathematical objects in patterns and sequences.	<i>I can order combinations of mathematical objects in patterns and sequences.</i>	
KS 1 Y2	Position	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).	<i>I can describe my position, direction and movement, including describing turns as quarter, half and three-quarter turns in clockwise and anti-clockwise directions.</i>	
KS 1 Y2	Statistics			
KS 1 Y2	Statistics	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	<i>I can read and construct picture graphs, tally charts and tables.</i>	
KS 1 Y2	Statistics	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.	<i>I can sort objects into categories and tell you how many objects are in each category and show which category has the most.</i>	
KS 1 Y2	Statistics	Ask and answer questions about totalling and comparing categorical data.	<i>I work on sorting objects and can answer questions about the groups of objects I have sorted.</i>	

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# MATHEMATICS Key Stage 2 Year 3

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 2 Y3	Number Place Value			
KS 2 Y3	Number Place Value	Count from 0 in multiples of 4, 8, 50 and 100.	<i>I can count from 0 in steps of 4, 8, 50 and 100.</i>	
KS 2 Y3	Number Place Value	Find 10 or 100 more or less than a given number.	<i>I can find 10 or 100 more or less than a given number.</i>	
KS 2 Y3	Number Place Value	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).	<i>I know what each digit means in Hundred Tens and Unit numbers such as 204.</i>	
KS 2 Y3	Number Place Value	Compare and order numbers up to 1000.	<i>I can compare and order numbers up to 1000.</i>	
KS 2 Y3	Number Place Value	Identify, represent and estimate numbers using different representations.	<i>I can identify and estimate numbers in different units such as length (mm and m) and weight (g and kg).</i>	
KS 2 Y3	Number Place Value	Read and write numbers up to 1000 in numerals and in words.	<i>I read and write numbers up to 1000 in numerals and in words.</i>	
KS 2 Y3	Number Place Value	Solve number problems and practical problems involving working with and estimating numbers up to 1000 in a variety of units.	<i>I can solve number problems, working with numbers up to 1000 and in different units of measurement.</i>	
KS 2 Y3	Addition Subtraction			
KS 2 Y3	Addition Subtraction	Add and subtract numbers mentally, including three-digit number and ones.	<i>I can add and subtract numbers in my head, including questions such as 432 - 7.</i>	
KS 2 Y3	Addition Subtraction	Add and subtract numbers mentally, including three-digit number and tens.	<i>I can add and subtract numbers in my head, including questions such as 432 - 70.</i>	
KS 2 Y3	Addition Subtraction	Add and subtract numbers mentally, including three-digit number and hundreds.	<i>I can add and subtract numbers in my head, including questions such as 432 - 300.</i>	
KS 2 Y3	Addition Subtraction	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	<i>I can use written methods to add or subtract two three-digit numbers.</i>	
KS 2 Y3	Addition Subtraction	Estimate the answer to a calculation and use inverse operations to check answers.	<i>I can estimate the answer to a question before I work it out and then use inverse operations to check the answer when I have finished.</i>	
KS 2 Y3	Addition Subtraction	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	<i>I solve problems such as missing numbers (for example, 452 - ? = 122) using my knowledge of number facts and methods of addition and subtraction.</i>	

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KS 2 Y3	Multiplication Division		
KS 2 Y3	Multiplication Division	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	<i>I know my 3, 4 and 8 times tables.</i>
KS 2 Y3	Multiplication Division	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.	<i>I can answer multiplication and division questions such as <math>16 \times 5</math> or <math>45</math> divided by <math>9</math>.</i>
KS 2 Y3	Multiplication Division	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.	<i>I can solve more complex problems and missing number questions involving multiplication and division.</i>
KS 2 Y3	Fractions		
KS 2 Y3	Fractions	Count up and down in tenths.	<i>I can count up and down in tenths.</i>
KS 2 Y3	Fractions	Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.	<i>I know that tenths can be found by dividing an object or shape into ten equal parts or by dividing numbers by 10.</i>
KS 2 Y3	Fractions	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.	<i>I can find a fraction (such as <math>2/5</math> or <math>3/4</math>) of a set of objects.</i>
KS 2 Y3	Fractions	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	<i>I know how to find fractions of a number or shape - such as <math>3/5</math>, <math>1/4</math> or <math>4/6</math>.</i>
KS 2 Y3	Fractions	Recognise and show, using diagrams, equivalent fractions with small denominators.	<i>I can show that some fractions have the same value - such as <math>1/2</math>, <math>3/6</math> and <math>5/10</math> or <math>1/3</math> and <math>3/9</math>.</i>
KS 2 Y3	Fractions	Add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$ ].	<i>I can add and subtract fractions with the same denominator [for example, <math>5/7 + 1/7 = 6/7</math>].</i>
KS 2 Y3	Fractions	Compare and order unit fractions, and fractions with the same denominators.	<i>I can compare and order unit fractions, and fractions with the same denominators.</i>
KS 2 Y3	Fractions	Solve problems that involve my understanding of fractions.	<i>I solve problems that finding, ordering or comparing fractions.</i>
KS 2 Y3	Measurement		
KS 2 Y3	Measurement	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	<i>I can measure and compare in these units: lengths (m/cm/mm), weight (kg/g) and capacity (l/ml).</i>
KS 2 Y3	Measurement	Measure the perimeter of simple 2-D shapes.	<i>I can measure the perimeter of a 2-D shape such as a square or triangle.</i>
KS 2 Y3	Measurement	Add and subtract amounts of money to give change, using both £ and p in practical contexts.	<i>I can work on money problems, adding and subtracting amounts of money and working out how much change is left. I use both £ and p in my problems.</i>

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KS 2 Y3	Measurement	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.	<i>I can tell and write the time from a clock with numbers or Roman numerals or using 12 and 24 hour clocks.</i>	
KS 2 Y3	Measurement	Estimate and read time with increasing accuracy to the nearest minute.	<i>I can tell the time accurately to the nearest minute.</i>	
KS 2 Y3	Measurement	Record and compare time in terms of seconds, minutes and hours.	<i>I can measure and record time passing in seconds, minutes and hours.</i>	
KS 2 Y3	Measurement	Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.	<i>I know and use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight in my maths work.</i>	
KS 2 Y3	Measurement	Know the number of seconds in a minute and the number of days in each month, year and leap year.	<i>I know the number of seconds in a minute and the number of days in each month, year and leap year.</i>	
KS 2 Y3	Measurement	Compare durations of events [for example to calculate the time taken by particular events or tasks].	<i>I can calculate how long an event or task took to complete.</i>	
KS 2 Y3	Shape			
KS 2 Y3	Shape	Draw 2-D shapes and make 3-D shapes using modelling materials.	<i>I draw 2-D shapes and make 3-D shapes using modelling materials.</i>	
KS 2 Y3	Shape	Recognise 3-D shapes in different orientations and describe them.	<i>I recognise and can describe 3-D shapes even when they have been turned about in different ways.</i>	
KS 2 Y3	Shape	Recognise angles as a property of shape or a description of a turn.	<i>I know an angle is used to measure how far something turns. An angle is also the point in a 2-D shape.</i>	
KS 2 Y3	Shape	Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn .	<i>I know what a right angles is and I know that two right angles make a half-turn, three make three quarters of a turn and four right angles make a complete turn.</i>	
KS 2 Y3	Shape	Identify whether angles are greater than or less than a right angle.	<i>I can tell whether an angle is greater than or less than a right angle.</i>	
KS 2 Y3	Shape	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	<i>I know when a line is horizontal or vertical or when two lines are perpendicular or parallel.</i>	
KS 2 Y3	Statistics			
KS 2 Y3	Statistics	Interpret and present data using bar charts, pictograms and tables.	<i>I can answer questions about bar charts, pictograms and tables and make my own bar charts, pictograms and tables.</i>	
KS 2 Y3	Statistics	Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	<i>I can answer maths problems such as 'How many more?' and 'How many fewer?' by finding the information in bar charts, pictograms and tables.</i>	

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# MATHEMATICS Key Stage 2 Year 4

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 2 Y4	Number Place Value			
KS 2 Y4	Number Place Value	Count in multiples of 6, 7, 9, 25 and 1000.	<i>I can count in multiples of 6, 7, 9, 25 and 1000.</i>	
KS 2 Y4	Number Place Value	Find 1000 more or less than a given number.	<i>I can find 1000 more or less than a given number.</i>	
KS 2 Y4	Number Place Value	Count backwards through zero to include negative numbers.	<i>I can count backwards to negative numbers below zero.</i>	
KS 2 Y4	Number Place Value	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	<i>I know what each digit means in Thousands, Hundreds Tens and Unit numbers such as 2024.</i>	
KS 2 Y4	Number Place Value	Order and compare numbers beyond 1000.	<i>I can order and compare numbers above 1000.</i>	
KS 2 Y4	Number Place Value	Identify, represent and estimate numbers using different representations.	<i>I can makes estimates of a range of things - such as how many small objects there are in a large jar, how long in cm an object is, how heavy an object may weigh in kg.</i>	
KS 2 Y4	Number Place Value	Round any number to the nearest 10, 100 or 1000.	<i>I can round a number to the nearest 10, 100 or 1000.</i>	
KS 2 Y4	Number Place Value	Solve number and practical problems that involve rounding, ordering and exploring negative numbers and with increasingly large positive numbers.	<i>I can solve number and practical problems that involve rounding, ordering and exploring negative numbers and with increasingly large positive numbers.</i>	
KS 2 Y4	Number Place Value	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.	<i>I can 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.</i>	
KS 2 Y4	Addition Subtraction			
KS 2 Y4	Addition Subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	<i>I can add and subtract numbers with up to 4 digits using written methods (for example, using column addition and subtraction).</i>	
KS 2 Y4	Addition Subtraction	Estimate and use inverse operations to check answers to a calculation.	<i>I can estimate an answer and check my answer using inverse operations.</i>	
KS 2 Y4	Addition Subtraction	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	<i>I can solve longer addition and subtraction problems and explain all the steps I took and why I worked things out as I did.</i>	
KS 2 Y4	Multiplication Division			

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KS 2 Y4	Multiplication Division	Recall multiplication and division facts for multiplication tables up to 12 x 12.	<i>I know all my times table up to the 12 times tables.</i>	
KS 2 Y4	Multiplication Division	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1.	<i>I know what the outcome is when I multiply a number by 1 or by zero.</i>	
KS 2 Y4	Multiplication Division	Use place value, known and derived facts to multiply and divide mentally, including: Dividing by 1.	<i>I know what the outcome is when I divide a number by 1.</i>	
KS 2 Y4	Multiplication Division	Use place value, known and derived facts to multiply and divide mentally, including: multiplying together three numbers.	<i>I can multiply three numbers together, such as 3 x 6 x 9.</i>	
KS 2 Y4	Multiplication Division	Recognise and use factor pairs and commutativity in mental calculations.	<i>I know what factor pairs are how I can multiply numbers in any order and use my knowledge to work out questions in my head.</i>	
KS 2 Y4	Multiplication Division	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	<i>I can multiply a two-digit or a three-digit number by a one-digit number using written methods.</i>	
KS 2 Y4	Multiplication 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.	<i>I can solve maths problems such as - how many different outfits can I make from 3 hats and 4 coats.</i>	
KS 2 Y4	Fractions			
KS 2 Y4	Fractions	Recognise and show, using diagrams, families of common equivalent fractions.	<i>I can show in drawings why a number of fractions equal each other (such as 3/5 and 6/10) and are called equivalent fractions.</i>	
KS 2 Y4	Fractions	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	<i>I can count up and down in hundredths and know that a hundredth is made by dividing an object by one hundred and a tenth is made by dividing an object by ten.</i>	
KS 2 Y4	Fractions	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.	<i>I can work out the fractions of numbers such as 4/5 of 25 or 7/10 of 700.</i>	
KS 2 Y4	Fractions	Add and subtract fractions with the same denominator.	<i>I can add and subtract fractions with the same denominator.</i>	
KS 2 Y4	Fractions	Recognise and write decimal equivalents of any number of tenths or hundredths.	<i>I can tell you the decimal equivalents of any number of tenths or hundredths - such as 1/10 = 0.1 and 23/100 = 0.23.</i>	
KS 2 Y4	Fractions	Recognise and write decimal equivalents to 1/4, 1/2, 3/4.	<i>I know what the decimal equivalents are for 1/4, 1/2 and 3/4.</i>	
KS 2 Y4	Fractions	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.	<i>I can divide a one- or two-digit number by 10 and 100 and I know what the tenths and hundredths mean after the decimal point.</i>	
KS 2 Y4	Fractions	Round decimals with one decimal place to the nearest whole number.	<i>I can round decimals with one decimal place to the nearest whole number.</i>	

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KS 2 Y4	Fractions	Compare numbers with the same number of decimal places up to two decimal places.	<i>I can compare numbers such as 0.26 and 0.56 to say which is bigger or lower.</i>	
KS 2 Y4	Fractions	Solve simple measure and money problems involving fractions and decimals to two decimal places.	<i>I can solve measure and money problems involving fractions and decimals to two decimal places.</i>	
KS 2 Y4	Measurement			
KS 2 Y4	Measurement	Convert between different units of measure [for example, kilometre to metre; hour to minute].	<i>I can convert one unit of measurement to another, such as kilometre to metre, hour to minute and cm to mm.</i>	
KS 2 Y4	Measurement	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	<i>I can measure and calculate the perimeter of a rectangle (including a square).</i>	
KS 2 Y4	Measurement	Find the area of rectilinear shapes by counting squares.	<i>I can find the area of a rectangular shape by counting the number of squares the shape takes up.</i>	
KS 2 Y4	Measurement	Estimate, compare and calculate different measures, including money in pounds and pence.	<i>I can estimate and compare the measurements of a range of measures (such as cm, km, g, litres) and money.</i>	
KS 2 Y4	Measurement	Read, write and convert time between analogue and digital 12- and 24-hour clocks.	<i>I can read, write and convert time between clocks with hands (analogue clocks) and digital 12- and 24-hour clocks.</i>	
KS 2 Y4	Measurement	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	<i>I can convert hours to minutes, minutes to seconds, years to months and weeks to days.</i>	
KS 2 Y4	Shape			
KS 2 Y4	Shape	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	<i>I can group 2-D shapes based on their properties (such as the number of sides) and sizes.</i>	
KS 2 Y4	Shape	Identify acute and obtuse angles and compare and order angles up to two right angles by size.	<i>I can find acute and obtuse angles and order a set of given angles by size.</i>	
KS 2 Y4	Shape	Identify lines of symmetry in 2-D shapes presented in different orientations.	<i>I can find all the lines of symmetry in 2-D shapes.</i>	
KS 2 Y4	Shape	Complete a simple symmetric figure with respect to a specific line of symmetry.	<i>If I have been given one half of a symmetrical shape, I can complete the other half based on the position of the line of symmetry.</i>	
KS 2 Y4	Position			
KS 2 Y4	Position	Describe positions on a 2-D grid as coordinates in the first quadrant.	<i>I can find the coordinates of a point on a grid.</i>	
KS 2 Y4	Position	Describe movements between positions as translations of a given unit to the left/right and up/down.	<i>I can move (translate) a point on a grid by a given set of jumps either up/down or left/right.</i>	
KS 2 Y4	Position	Plot specified points and draw sides to complete a given polygon.	<i>I can plot points using coordinates and join up the points to create a shape.</i>	

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KS 2 Y4	Statistics			
KS 2 Y4	Statistics	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	<i>I can take continuous and discrete data and create a bar chart or time graph.</i>	
KS 2 Y4	Statistics	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	<i>I can solve comparison, sum and difference problems using information in bar charts, pictograms, tables and other graphs.</i>	

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# 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>	

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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 that are multiples of the same number.	<i>I can add and subtract fractions with the same denominator and 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 (<math>7/10</math>) and mixed numbers (<math>1 \frac{7}{10}</math>) 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, <math>0.71 = 71/100</math>].</i>	
KS 2 Y5	Fractions	Recognise and use thousandths and relate them to tenths, hundredths	<i>I know what thousandths are and how to use them with tenths,</i>	

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		and decimal equivalents.	<i>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 $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{5}$ , $\frac{2}{5}$ , $\frac{4}{5}$ 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 <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> 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,	<i>I know that angles are measured in degrees and I can estimate</i>	

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		obtuse and reflex angles.	<i>and compare acute, obtuse and reflex angles.</i>	
KS 2 Y5	Shape	Draw given angles, and measure them in degrees (°).	<i>I can draw a given angle (such as 47°), and then measure them in degrees (°).</i>	
KS 2 Y5	Shape	Identify angles at a point and one whole turn (total 360°).	<i>I know one whole turn - or a set of angles all around a point - measure a total of 360°.</i>	
KS 2 Y5	Shape	Identify angles at a point on a straight line and a turn (total 180°).	<i>I know that a straight line - or angles that add up to a straight line - measure 180°.</i>	
KS 2 Y5	Shape	Identify other multiples of 90°.	<i>I can identify multiples of 90° (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>	

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# MATHEMATICS Key Stage 2 Year 6

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 2 Y6	Number Place Value			
KS 2 Y6	Number Place Value	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.	<i>I can work with numbers up to 10 000 000 and know what each digit represents.</i>	
KS 2 Y6	Number Place Value	Round any whole number to a required degree of accuracy.	<i>I can round a whole number as requested - for example to the nearest 10 or 1000 or 100000.</i>	
KS 2 Y6	Number Place Value	Use negative numbers in context, and calculate intervals across zero.	<i>I understand and use negative numbers in my work, for example - working out how much is between -7 and +8.</i>	
KS 2 Y6	Number Place Value	Solve number and practical problems that involve large numbers, rounding and negative numbers.	<i>I can solve number and practical problems that involve large numbers, rounding and negative numbers.</i>	
KS 2 Y6	Multiplication Division			
KS 2 Y6	Multiplication Division	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.	<i>I can multiply 4 digit numbers by a two-digit number (for example 4307 x 34) using the written method of long multiplication.</i>	
KS 2 Y6	Multiplication Division	Divide numbers 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.	<i>I can divide 4 digit numbers by a two-digit number using the written method of long division - and tell you the remainder.</i>	
KS 2 Y6	Multiplication Division	Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.	<i>I can choose to divide 4 digit numbers by a two-digit number using the written method of short division if this is possible.</i>	
KS 2 Y6	Multiplication Division	Perform mental calculations, including with mixed operations and large numbers.	<i>I can multiply, divide, add and subtract large numbers in my head.</i>	
KS 2 Y6	Multiplication Division	Identify common factors, common multiples and prime numbers.	<i>I identify common factors, common multiples and prime numbers.</i>	
KS 2 Y6	Multiplication Division	Use their knowledge of the order of operations to carry out calculations involving the four operations.	<i>I know that addition, subtraction, multiplication and division should be carried out in a specific order when looking at problems.</i>	
KS 2 Y6	Multiplication Division	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 where to add or subtract.</i>	
KS 2 Y6	Multiplication Division	Solve problems involving addition, subtraction, multiplication and division.	<i>I can solve problems involving addition, subtraction, multiplication and division.</i>	

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KS 2 Y6	Multiplication Division	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	<i>I always estimate my answer before I begin calculating - this helps me to check at the end to make sure I am correct.</i>	
KS 2 Y6	Fractions			
KS 2 Y6	Fractions	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	<i>I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination.</i>	
KS 2 Y6	Fractions	Compare and order fractions, including fractions greater than 1.	<i>I can compare and order fractions, including fractions greater than 1.</i>	
KS 2 Y6	Fractions	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	<i>I add and subtract fractions with different denominators and mixed numbers.</i>	
KS 2 Y6	Fractions	Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$ ].	<i>I can multiply fractions such as <math>1/4 \times 1/2 = 1/8</math>.</i>	
KS 2 Y6	Fractions	Divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$ ].	<i>I know how to divide proper fractions by whole numbers [for example, <math>1/3 \div 2 = 1/6</math>].</i>	
KS 2 Y6	Fractions	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$ ].	<i>I can change a fraction into a decimal - for example, I can change <math>3/8</math> to 0.375 by dividing 1 by 8 and multiplying by 3.</i>	
KS 2 Y6	Fractions	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.	<i>I can multiply and divide numbers by 10, 100 and 1000 and know what each digit means up to three decimal places.</i>	
KS 2 Y6	Fractions	Multiply one-digit numbers with up to two decimal places by whole numbers.	<i>I can multiply numbers such as 1.45 by a one digit number - for example <math>1.45 \times 7</math>.</i>	
KS 2 Y6	Fractions	Use written division methods in cases where the answer has up to two decimal places.	<i>I use written division methods in cases where the answer has up to two decimal places.</i>	
KS 2 Y6	Fractions	Solve problems which require answers to be rounded to specified degrees of accuracy.	<i>I can solve problems which include rounding to a required accuracy such as the nearest 10, 100 or 10000.</i>	
KS 2 Y6	Fractions	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	<i>I know the decimal value, percentage and fraction of a range of values - such as 0.5, 50 per cent and <math>1/2</math>.</i>	
KS 2 Y6	Ratio			
KS 2 Y6	Ratio	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	<i>I can solve problems about relative sizes (ratio).</i>	
KS 2 Y6	Ratio	Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.	<i>I can find the percentage of an amount - such as finding 15 per cent of 360.</i>	
KS 2 Y6	Ratio	Solve problems involving similar shapes where the scale factor is known	<i>I can solve similar shape problems.</i>	

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		or can be found.		
KS 2 Y6	Ratio	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	<i>I can solve problems about unequal sharing - such as 'I need four eggs and for every egg I need three spoonfuls of flour. How much flour do I need?'</i>	
KS 2 Y6	Algebra			
KS 2 Y6	Algebra	Use simple formulae.	<i>I know how to use simple formulae such as <math>n - 10 = 2</math>.</i>	
KS 2 Y6	Algebra	Generate and describe linear number sequences.	<i>I can create a sequence of numbers that follow a rule.</i>	
KS 2 Y6	Algebra	Express missing number problems algebraically.	<i>I can use a letter (such as <math>n</math> or <math>x</math>) to show a missing number - such as <math>10 - x = 5</math>.</i>	
KS 2 Y6	Algebra	Find pairs of numbers that satisfy an equation with two unknowns.	<i>I can find pairs of numbers that satisfy an equation with two unknowns.</i>	
KS 2 Y6	Algebra	Enumerate possibilities of combinations of two variables.	<i>I can list possible answers to missing numbers such as listing the possible answers of <math>a</math> and <math>b</math> in <math>a + 6 = b - 10</math>.</i>	
KS 2 Y6	Measurement			
KS 2 Y6	Measurement	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	<i>I solve problems about different units of measures with three decimal places.</i>	
KS 2 Y6	Measurement	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.	<i>I can convert measurements of length, weight, volume and time up to three decimal places in length (for example <math>0.345\text{kg} = 345\text{g}</math>).</i>	
KS 2 Y6	Measurement	Convert between miles and kilometres.	<i>I can convert between miles and kilometres.</i>	
KS 2 Y6	Measurement	Recognise that shapes with the same areas can have different perimeters and vice versa.	<i>I know that even though shapes may have the same area, the perimeter may be different - or a shapes with the same perimeter may have a different areas.</i>	
KS 2 Y6	Measurement	Recognise when it is possible to use formulae for area and volume of shapes.	<i>I can use a formulae for area and volume of shapes.</i>	
KS 2 Y6	Measurement	Calculate the area of parallelograms and triangles.	<i>I can calculate the area of parallelograms and triangles.</i>	
KS 2 Y6	Measurement	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [for example, $\text{mm}^3$ and $\text{km}^3$ ].	<i>I can work with the volume of cubes and cuboids using cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and other units too such as <math>\text{mm}^3</math> and <math>\text{km}^3</math>.</i>	
KS 2 Y6	Shape			
KS 2 Y6	Shape	Draw 2-D shapes using given dimensions and angles.	<i>I accurately draw 2-D shapes using given dimensions and angles.</i>	

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KS 2 Y6	Shape	Recognise, describe and build simple 3-D shapes, including making nets.	<i>I can recognise, describe and build 3-D shapes, including making nets.</i>	
KS 2 Y6	Shape	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.	<i>I can classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</i>	
KS 2 Y6	Shape	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	<i>I know the parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</i>	
KS 2 Y6	Shape	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	<i>I can work with angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</i>	
KS 2 Y6	Position			
KS 2 Y6	Position	Describe positions on the full coordinate grid (all four quadrants).	<i>I can use the four quadrants in a coordinate grid.</i>	
KS 2 Y6	Position	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	<i>I can draw and translate shapes using coordinates or reflect a shape on the grid.</i>	
KS 2 Y6	Statistics			
KS 2 Y6	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems.	<i>I can use and construct pie charts and line graphs and use these to solve problems.</i>	
KS 2 Y6	Statistics	Calculate and interpret the mean as an average.	<i>I can calculate the mean as an average.</i>	

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# MATHEMATICS Key Stage 3 Year 7,8,9

(These objectives will be used for children working at the equivalent of the current Level 6)

Key Stage	Strand	Objective	Child Speak Target	Notes
KS 3 Y7,8,9	Number Place Value			
KS 3 Y7,8,9	Number Place Value	Understand and use place value for decimals, measures and integers of any size.	<i>I understand and use place value for decimals, measures and integers of any size.</i>	
KS 3 Y7,8,9	Number Place Value	Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols equals, not equals, less than, greater than, less than or equal, greater than or equals.	<i>I can order positive and negative integers, decimals and fractions accurately and know how to use the symbols equals, not equals, less than, greater than, less than or equal, greater than or equals when ordering.</i>	
KS 3 Y7,8,9	Number Place Value	Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property.		
KS 3 Y7,8,9	Multiplication Division			
KS 3 Y7,8,9	Multiplication Division	Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.		
KS 3 Y7,8,9	Number Place Value			
KS 3 Y7,8,9	Number Place Value	Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals.		
KS 3 Y7,8,9	Multiplication Division			
KS 3 Y7,8,9	Multiplication Division	Recognise and use relationships between operations including inverse operations.		
KS 3 Y7,8,9	Number Place Value			
KS 3 Y7,8,9	Number Place Value	Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations .		
KS 3 Y7,8,9	Number Place Value	Interpret and compare numbers in standard form $A \times 10^n$ where A greater than or equal to 1 less and A is less than 10, where n is a positive or negative integer or zero.		
KS 3 Y7,8,9	Fractions			

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KS 3 Y7,8,9	Fractions	Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$ ).		
KS 3 Y7,8,9	Fractions	Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%.		
KS 3 Y7,8,9	Fractions	Interpret fractions and percentages as operators.		
KS 3 Y7,8,9	Measurement			
KS 3 Y7,8,9	Measurement	Use standard units of mass, length, time, money and other measures, including with decimal quantities.		
KS 3 Y7,8,9	Number Place Value			
KS 3 Y7,8,9	Number Place Value	Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures].		
KS 3 Y7,8,9	Number Place Value	Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a less than x less than or equal to b.		
KS 3 Y7,8,9	Number Place Value	Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.		
KS 3 Y7,8,9	Number Place Value	Appreciate the infinite nature of the sets of integers, real and rational numbers.		
KS 3 Y7,8,9	Algebra			
KS 3 Y7,8,9	Algebra	$ab$ in place of $a \times b$ .		
KS 3 Y7,8,9	Algebra	$3y$ in place of $y + y + y$ and $3 \times y$ .		
KS 3 Y7,8,9	Algebra	$a^2$ in place of $a \times a$ , $a^3$ in place of $a \times a \times a$ ; $a^2b$ in place of $a \times a \times b$ .		
KS 3 Y7,8,9	Algebra	$A/b$ in place of $a$ divided by $b$ .		
KS 3 Y7,8,9	Algebra	Coefficients written as fractions rather than as decimals.		
KS 3 Y7,8,9	Algebra	Brackets.		
KS 3 Y7,8,9	Algebra	Substitute numerical values into formulae and expressions, including scientific formulae.		
KS 3 Y7,8,9	Algebra	Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors.		

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KS 3 Y7,8,9	Algebra	Collecting like terms.		
KS 3 Y7,8,9	Algebra	Multiplying a single term over a bracket.		
KS 3 Y7,8,9	Algebra	Taking out common factors.		
KS 3 Y7,8,9	Algebra	Expanding products of two or more binomials.		
KS 3 Y7,8,9	Algebra	Understand and use standard mathematical formulae; rearrange formulae to change the subject.		
KS 3 Y7,8,9	Algebra	Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.		
KS 3 Y7,8,9	Algebra	Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement).		
KS 3 Y7,8,9	Algebra	Work with coordinates in all four quadrants.		
KS 3 Y7,8,9	Algebra	Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane.		
KS 3 Y7,8,9	Algebra	Interpret mathematical relationships both algebraically and graphically.		
KS 3 Y7,8,9	Algebra	Reduce a given linear equation in two variables to the standard form $y = mx + c$ ; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically.		
KS 3 Y7,8,9	Algebra	Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations.		
KS 3 Y7,8,9	Algebra	Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs.		
KS 3 Y7,8,9	Algebra	Generate terms of a sequence from either a term-to-term or a position-to-term rule.		
KS 3 Y7,8,9	Algebra	Recognise arithmetic sequences and find the nth term.		
KS 3 Y7,8,9	Algebra	Recognise geometric sequences and appreciate other sequences that arise.		
KS 3 Y7,8,9	Ratio			
KS 3 Y7,8,9	Ratio	Change freely between related standard units [for example time, length, area, volume/capacity, mass].		
KS 3 Y7,8,9	Ratio	Use scale factors, scale diagrams and maps.		

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KS 3 Y7,8,9	Ratio	Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1.		
KS 3 Y7,8,9	Ratio	Use ratio notation, including reduction to simplest form.		
KS 3 Y7,8,9	Ratio	Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio.		
KS 3 Y7,8,9	Ratio	Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction.		
KS 3 Y7,8,9	Ratio	Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions.		
KS 3 Y7,8,9	Ratio	Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics.		
KS 3 Y7,8,9	Ratio	Solve problems involving direct and inverse proportion, including graphical and algebraic representations.		
KS 3 Y7,8,9	Ratio	Use compound units such as speed, unit pricing and density to solve problems.		
KS 3 Y7,8,9	Shape			
KS 3 Y7,8,9	Shape	Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders).		
KS 3 Y7,8,9	Shape	Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes.		
KS 3 Y7,8,9	Shape	Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.		
KS 3 Y7,8,9	Shape	Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line .		
KS 3 Y7,8,9	Shape	Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric.		
KS 3 Y7,8,9	Shape	Use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles.		

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KS 3 Y7,8,9	Shape	Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies.		
KS 3 Y7,8,9	Position			
KS 3 Y7,8,9	Position	Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures.		
KS 3 Y7,8,9	Shape			
KS 3 Y7,8,9	Shape	Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids.		
KS 3 Y7,8,9	Shape	Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles.		
KS 3 Y7,8,9	Shape	Understand and use the relationship between parallel lines and alternate and corresponding angles.		
KS 3 Y7,8,9	Shape	Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons.		
KS 3 Y7,8,9	Shape	Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs.		
KS 3 Y7,8,9	Shape	Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles.		
KS 3 Y7,8,9	Shape	Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D.		
KS 3 Y7,8,9	Shape	Interpret mathematical relationships both algebraically and geometrically.		
KS 3 Y7,8,9	Statistics			
KS 3 Y7,8,9	Statistics	Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale.		
KS 3 Y7,8,9	Statistics	Understand that the probabilities of all possible outcomes sum to 1.		
KS 3 Y7,8,9	Statistics	Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams.		
KS 3 Y7,8,9	Statistics	Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate		

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		theoretical probabilities.		
KS 3 Y7,8,9	Statistics	Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers).		
KS 3 Y7,8,9	Statistics	Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data.		
KS 3 Y7,8,9	Statistics	Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.		

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