



Maths End of Year Key Performance Indicators

	Number	Shape, Space and Measures	
Reception	<p>Have a deep understanding of number to 10, including the composition of each number</p> <p>Subitise (recognise quantities without counting) up to 5</p> <p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>Verbally count beyond 20, recognising the pattern of the counting system</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally</p>	<p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills</p> <p>Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.</p> <p>Continue, copy and create repeating patterns</p> <p>Compare length, weight and capacity</p>	
	Number	Geometry	Measurement
Year 1	<ul style="list-style-type: none"> o Count to twenty, forwards and backwards, beginning with 0 or 1, from any given number. o Count, read and write numbers to 20 in numerals and words. o Count to 50 forwards and backwards, beginning with 0 or 1, 	<ul style="list-style-type: none"> o Describe position, direction and movement, including whole, half, quarter and three quarter 	<ul style="list-style-type: none"> o Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) o Recognise and know the value of different



Maths End of Year Key Performance Indicators

	<p>or from any number.</p> <ul style="list-style-type: none"> o Count, read and write numbers to 50 in numerals. o 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. o Given a number, identify one more or one less. o Count, read and write numbers to 10 in numerals and words. o Count to ten, forwards and backwards, beginning with 0 or 1, or from any given number. o Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. o Add and subtract one digit numbers to 10, including zero. o Represent and use number bonds and related subtraction facts within 20 o Add and subtract one-digit and two-digit numbers to 20, including zero. 	<p>turns</p> <ul style="list-style-type: none"> o Recognise and name common 2-D shapes, including: (for example, rectangles (including squares), circles and triangles) o Recognise and name common 3-D shapes, including: (for example, cuboids (including cubes), pyramids and spheres.) 	<p>denominations of coins and notes.</p> <ul style="list-style-type: none"> o Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. o Compare, describe and solve practical problems for time for example, quicker, slower, earlier, later o Measure and begin to record time (hours, minutes, seconds) o Measure and begin to record lengths and heights. o Measure and begin to record mass/weight, capacity and volume. o Compare, describe and solve practical problems for mass/weight: for example, heavy/light, heavier than, lighter than ; capacity and volume for example, full/empty, more than, less than, half, half full, quarter o Recognise and use language relating to dates, including days of the week, weeks, months and years. o Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
	Number	Geometry	Measurement
Year 2	<ul style="list-style-type: none"> o Identify, represent and estimate numbers using different representations including the number line. o Recognise the place value of each digit in a two digit number (tens, ones) 	<ul style="list-style-type: none"> o Use mathematical vocabulary to describe position, direction and 	<ul style="list-style-type: none"> o Find different combinations of coins that equal the same amounts of money.



Maths End of Year Key Performance Indicators

	<ul style="list-style-type: none">o Read and write numbers to at least 100 in numerals and in words.o Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.o Use place value and number facts to solve problems.o Compare and order numbers from 0 up to 100; use and = signs.o Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.o Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers.o Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.o Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.o Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.o Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.o Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.o Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in	<p>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)</p> <ul style="list-style-type: none">o Order and arrange combinations of mathematical objects in patterns and sequenceso Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.o Compare and sort common 2-D and 3-D shapes and everyday objects.o Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.	<ul style="list-style-type: none">o Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.o 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.o Know the number of minutes in an hour and the number of hours in a day.o Compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$o Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.o Compare and sequence intervals of time.o Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
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Maths End of Year Key Performance Indicators

	<p>contexts.</p> <ul style="list-style-type: none"> o Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. o 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. o Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. 	<ul style="list-style-type: none"> o Identify 2-D shapes on the surface of 3-D shapes, for example, a circle on a cylinder and a triangle on a pyramid. 		
	Number	Geometry	Measurement	Statistics
Year 3	<ul style="list-style-type: none"> o Find 10 or 100 more or less than a given number o Read and write numbers up to 1000 in numerals and in words. o Compare and order numbers up to 1000 o Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). o Count from 0 in multiples of 4, 8, 50 and 100 o Solve number problems and practical problems involving these ideas. o Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. o Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. o Estimate the answer to a calculation and use inverse operations to check answers. o Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. o Write and calculate mathematical statements for multiplication and division using the multiplication tables they 	<ul style="list-style-type: none"> o Draw 2-D shapes and make 3-D shapes using modelling materials. o Recognise angles as a property of shape or a description of a turn. o Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. o Identify horizontal and vertical lines and pairs of perpendicular 	<ul style="list-style-type: none"> o Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). o Measure the perimeter of simple 2D shapes. o Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). o Add and subtract amounts of money to give change, using both £ and p in practical contexts. o Tell and write the 	<ul style="list-style-type: none"> o 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. o Interpret and present data using bar charts, pictograms and tables.



Maths End of Year Key Performance Indicators

	<p>know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p> <ul style="list-style-type: none">o 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 objectives.o Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.o Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.o Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10o Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.o Recognise and show, using diagrams, equivalent fractions with small denominators.o Compare and order unit fractions, and fractions with the same denominators.o Add and subtract fractions with the same denominator within one whole for example, $5/7 + 1/7 = 6/7$o Solve problems that involve all of the above.	<p>and parallel lines.</p> <ul style="list-style-type: none">o Recognise 3-D shapes in different orientations and describe them.	<p>time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks.</p> <ul style="list-style-type: none">o Estimate and read time with increasing accuracy to the nearest minute.o Record and compare time in terms of seconds, minutes and hours.o Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.o Know the number of seconds in a minute and the number of days in each month, year and leap year.o Compare durations of events for example to calculate the time taken by particular events or tasks.	
	Number	Geometry	Measurement	Statistics



Maths End of Year Key Performance Indicators

<p>Year 4</p>	<ul style="list-style-type: none">o Identify, represent and estimate numbers using different representations.o Order and compare numbers beyond 1000o Round any number to the nearest 10, 100 or 1000o Count in multiples of 6, 7, 9, 25 and 1000.o Solve number and practical problems that involve all of the above and with increasingly large positive numbers.o Count backwards through zero to include negative numbers.o Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.o Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.o Estimate and use inverse operations to check answers to a calculation.o 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.o Recognise and use factor pairs and commutativity in mental calculations.o Multiply two digit and three digit numbers by a one digit number using formal written layout.o 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.o Recall and use multiplication and division facts for multiplication tables up to 12×12.o Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities,	<ul style="list-style-type: none">o Describe positions on a 2-D grid as coordinates in the first quadrant.o Plot specified points and draw sides to complete a given polygon.o Describe movements between positions as translations of a given unit to the left/ right and up/ down.o Identify lines of symmetry in 2-D shapes presented in different orientations.o Identify acute and obtuse angles and compare and order angles up to two right angles by size.o Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.o Complete a simple symmetric figure with	<ul style="list-style-type: none">o Find the area of rectilinear shapes by counting squares.o Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metreso Convert between different units of measure for example, kilometre to metreo Solve simple measure and money problems involving fractions and decimals to two decimal places.o Convert between different units of measure for example, kilometre to metre; hour to minuteo Read, write and convert time between analogue and digital 12- and 24-hour clocks.o Solve problems involving converting	<ul style="list-style-type: none">o Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.o Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
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Maths End of Year Key Performance Indicators

	<p>including non-unit fractions where the answer is a whole number.</p> <ul style="list-style-type: none"> o Add and subtract fractions with the same denominator. o Recognise and show, using diagrams, families of common equivalent fractions. o Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. o Round decimals with one decimal place to the nearest whole number. o Recognise and write decimal equivalents to 14, 12 and 34 o Solve simple measure and money problems involving fractions and decimals to two decimal places. o Recognise and write decimal equivalents of any number of tenths or hundredths. o Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths 	<p>respect to a specific line of symmetry.</p>	<p>from hours to minutes; minutes to seconds; years to months; weeks to days.</p>	
	Number	Geometry	Measurement	Statistics
Year 5	<ul style="list-style-type: none"> o Add and subtract numbers mentally with increasingly large numbers. o Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) o Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. o Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. 	<ul style="list-style-type: none"> o 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. o Identify 3D shapes, 	<ul style="list-style-type: none"> o Solve problems involving converting between units of time. o Convert between different units of metric measure for example, km and m; cm and m; cm and mm; g and kg; l and ml 	<ul style="list-style-type: none"> o Solve comparison, sum and difference problems using information presented in a line graph. o Complete, read and interpret information in tables including timetables.



Maths End of Year Key Performance Indicators

	<ul style="list-style-type: none">o Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.o Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.o Establish whether a number up to 100 is prime and recall prime numbers up to 19o Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.o 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.o Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.o Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number for example $25 \div 45 = 1 \frac{5}{9}$o Add and subtract fractions with the same denominator and denominators that are multiples of the same number.o Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.o Read and write decimal numbers as fractions for example $0.71 = \frac{71}{100}$o Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.o Compare and order fractions whose denominators are multiples of the same number.o Identify, name and write equivalent fractions of a given	<ul style="list-style-type: none">including cubes and other cuboids, from 2D representations.o Use the properties of rectangles to deduce related facts and find missing lengths and angles.o Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.o Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.o Draw given angles, and measure them in degrees (o)o Identify angles at a point and one whole turn (total 360o), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180o) other multiples of 90o	<ul style="list-style-type: none">o Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.o Measure and calculate the perimeter of composite rectilinear shapes in cm and m.o Calculate and compare the area of rectangles (including squares), and including using standard units, cm^2, m^2 estimate the area of irregular shapes.o Estimate volume for example using 1cm³ blocks to build cuboids (including cubes) and capacity for example, using watero Use all four operations to solve problems involving measure.	
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Maths End of Year Key Performance Indicators

	<p>fraction, represented visually including tenths and hundredths.</p> <ul style="list-style-type: none"> o Read, write, order and compare numbers with up to three decimal places. o 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. o Solve problems which require knowing percentage and decimal equivalents of 12, 14, 15, 25, 45 and those fractions with a denominator of a multiple of 10 or 25. o Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. o Use all four operations to solve problems involving measure for example, length, mass, volume, money using decimal notation, including scaling. o Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. o Round decimals with two decimal places to the nearest whole number and to one decimal place. 			
	Number	Geometry	Measurement	Statistics
Year 6	<ul style="list-style-type: none"> o Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy o Use their knowledge of the order of operations to carry out calculations involving the four operations. o Solve problems involving addition, subtraction, multiplication and division. o Solve addition and subtraction multi step problems in 	<ul style="list-style-type: none"> o Describe positions on the full coordinate grid (all four quadrants). o Draw and translate simple shapes on the coordinate plane, and reflect them in the 	<ul style="list-style-type: none"> o Convert between miles and kilometres. o Solve problems involving the calculation and conversion of units of measure, using decimal notation unto 	<ul style="list-style-type: none"> o Interpret and construct pie charts and line graphs and use these to solve problems. o Calculate the mean as an average.



Maths End of Year Key Performance Indicators

	<p>contexts, deciding which operations and methods to use and why.</p> <ul style="list-style-type: none">o Multiply multi-digit numbers up to 4 digits by a 2-digit number using the formal written method of long multiplication.o Perform mental calculations, including with mixed operations and large numbers.o Identify common factors, common multiples and prime numbers.o Divide numbers up to 4 digits by a 2-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.o Generate and describe linear number sequences (with fractions)o Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.o Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.o Associate a fraction with division and calculate decimal fraction equivalents for example, 0.375 for a simple fraction for example $\frac{3}{8}$o Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.o Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.o Compare and order fractions, including fractions > 1o Multiply simple pairs of proper fractions, writing the answer in its simplest form for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$o Solve problems which require answers to be rounded to specified degrees of accuracy.o Identify the value of each digit in numbers given to 3	<p>axes.</p> <ul style="list-style-type: none">o Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.o Draw 2-D shapes using given dimensions and angles.o Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.o Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	<p>three decimal places where appropriate.</p> <ul style="list-style-type: none">o 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 3dp.o Recognise that shapes with the same areas can have different perimeters and vice versa.o Recognise when it is possible to use formulae for area and volume of shapes.o Recognise when it is possible to use formulae for area and volume of shapes.o Calculate the area of parallelograms and triangles.o Calculate, estimate and compare volume	
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Maths End of Year Key Performance Indicators

	<p>decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.</p> <ul style="list-style-type: none">o Multiply one-digit numbers with up to 2 decimal places by whole numbers.o Use written division methods in cases where the answer has up to 2 decimal places.o Use simple formulaeo Generate and describe linear number sequences.o Express missing number problems algebraically.o Find pairs of numbers that satisfy an equation with two unknowns.o Enumerate possibilities of combinations of two variables.		<p>of cubes and cuboids using standard units, including cm³, m³ and extending to other units (mm³, km³)</p>	
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