



What we will teach children to do over the course of the year in Mathematics

<p>We would expect almost all children to achieve these things in</p> <p>Year 1</p>	<p>Number and place value</p> <ul style="list-style-type: none"> count to and across 100, forward and backwards, beginning with 0 or 1 from any number. count in multiples of 2, 5 and 10. count, read and write numbers to 100 in numerals. say what is one more or one less than any number. read and write numbers from 1 to 20 in numerals and words. 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 <p>Calculations</p> <ul style="list-style-type: none"> represent and use number bonds and related subtraction facts to 20. add and subtract 1-digit and 2-digit numbers to 20, including zero. read, write and interpret mathematical statements involving addition, subtraction and equals signs. solve one-step problems that involve addition and subtraction, using objects and pictorial representations. solve missing number problems. solve one-step problems involving multiplication and division, by using concrete objects, pictorial representations and arrays. <p>Fractions</p> <ul style="list-style-type: none"> recognise, find and name a half of an object, shape or quantity. recognise, find and name a quarter of an object, shape or quantity. 	<p>Measurement</p> <ul style="list-style-type: none"> compare, describe and solve practical problems for lengths and heights; mass/weight; capacity and volume; and time. measure and begin to record lengths and heights; mass/weight; capacity and volume; and time. recognise and know the value of different denominations of coins and notes. tell the time to the hour. tell the time to half past the hour. draw hands on a clock face to show these times. sequence events in chronological order using language. recognise and use language relating to dates, including days, weeks, months and years <p>Geometry –properties of shapes</p> <ul style="list-style-type: none"> recognise and can name common 2D shapes (rectangles, including squares, circles and triangles). recognise and can name common 3D shapes (cuboids, including cubes, pyramids and spheres). <p>Geometry –position and direction</p> <ul style="list-style-type: none"> describe position, directions and movement, including half, quarter and three-quarter turns.
<p>We would expect almost all children to achieve these things in</p>	<p>Number and place value</p> <ul style="list-style-type: none"> count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. read and write numbers to at least 100 in numerals and in words. compare and order numbers from 0 up to 100; using $<$ $>$ $=$ signs. recognise the place value of each digit in a 2-digit number. identify, represent and estimate numbers using different representations, including the number line. use place value and number facts to solve problems. <p>Calculations</p>	<p>Measurement</p> <ul style="list-style-type: none"> compare and order lengths, mass, volume/capacity and record the results using $>$ $<$ and $=$. choose and use standard units to estimate and measure length/height in any direction in m and cm using rulers. choose and use standard units to estimate and measure mass in kg and g using scales. choose and use standard units to estimate and measure temperature in $^{\circ}\text{C}$ using thermometers. choose and use standard units to estimate and measure capacity in l and



Our Curriculum

<p>Year 2</p>	<ul style="list-style-type: none"> recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. add and subtract mentally, including: <ul style="list-style-type: none"> A 2-digit number and ones A 2-digit number and tens Two 2-digit numbers Adding three 1-digit numbers add and subtract numbers using concrete objects and pictorial representations, including: <ul style="list-style-type: none"> A 2-digit number and ones A 2-digit number and tens Two 2-digit numbers Adding three 1-digit numbers recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. solve problems with addition and subtraction applying my increasing knowledge of mental and written methods. recall and use multiplication and division facts for the 2, 5 and 10x tables, including recognising odd and even numbers. calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs. solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context. show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. <p>Fractions recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.</p> <ul style="list-style-type: none"> write simple fractions. recognise the equivalence of 2/4 and 1/2. 	<p>ml using measuring vessels.</p> <ul style="list-style-type: none"> recognise and use symbols for £ and p and combine amounts to make a particular value. find different combinations of coins that equal the same amount of money. tell and write the time to five minutes, including quarter to/past and draw the hands on a clock face to show these times. compare and sequence intervals of time. know the number of minutes in an hour. know the number of hours in a day. solve simple problems in a practical context involving addition and subtraction of money of the same units, including giving change. <p>Geometry –properties of shapes</p> <ul style="list-style-type: none"> compare and sort common 2D shapes and everyday objects. compare and sort common 3D shapes and everyday objects. identify and describe the properties of 2D shapes, including the number of sides and line of symmetry in a vertical line. identify and describe the properties of 3D shapes including the number of edges, vertices and faces. identify 2D shapes on the surface of 3D shapes. <p>Geometry –position and direction</p> <ul style="list-style-type: none"> order and arrange combinations of mathematical objects in patterns and sequences. 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)). <p>Statistics</p> <ul style="list-style-type: none"> interpret and construct simple pictograms. interpret and construct tally charts. interpret and construct block diagrams. interpret and construct simple tables. ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ask and answer questions about totalling and comparing categorical data.
<p>We would</p>	<p>Number, place value, approximation and estimation/rounding</p>	<p>Measurement</p>



expect almost all children to achieve these things in

Year 3

- count from 0 in multiples of 4, 8, 50 and 100.
- compare and order numbers up to 1,000.
- read and write numbers to 1,000 in numerals and words.
- find 10 or 100 more or less than a given number.
- recognise the place value of each digit in a 3-digit number.
- identify, represent and estimate numbers using different representations.
- solve number problems and practical problems using above.

Calculations

- add and subtract mentally, including:
 - A 3-digit number and ones
 - A 3-digit number and tens
 - A 3-digit number and hundreds
- add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- estimate the answer to a calculation and use inverse operation to check answers.
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- recall and use multiplication and division facts for the 3, 4 and 8x tables.
- write and calculate mathematical statements for multiplication and division using the multiplication tables, including for 2-digit numbers, using mental and progressing to formal written methods.
- solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

Fractions, decimals and percentages

- count up and down in tenths.
- recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10.
- recognise and can find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- compare and order unit fractions and fractions with the same denominators.
- add and subtract fractions with the same denominator within one whole.
- solve problems involving the above.

- compare lengths using m, cm & mm.
- compare mass using kg & g.
- compare volume/capacity using l & ml.
- measure lengths using m, cm & mm.
- measure mass using kg & g.
- measure volume/capacity using l & ml.
- add and subtract lengths using m, cm & mm.
- add and subtract mass using kg & g.
- add and subtract volume/capacity using l & ml.

- tell and write the time from an analogue clock (12 hour clock).
- tell and write the time from an analogue clock (24 hour clock).
- tell and write the time from an analogue clock (Roman numerals).
- estimate and read time with increasing accuracy to the nearest minute.
- record and compare time in terms of seconds, minutes and hours.
- use the following vocabulary: o'clock, am, pm, morning, afternoon, noon & midnight.
- know the number of seconds in a minute.
- know the number of days in each month, year and leap year.
- compare the duration of events.
- measure the perimeter of simple 2D shapes.

- add and subtract amounts of money to give change, using both £ and p in a practical context.

Geometry –properties of shapes

- identify horizontal, vertical lines and pairs of perpendicular and parallel lines.
- draw 2D shapes.
- make 3D shapes using modelling materials.
- recognise 3D shapes in different orientations and describe them.
- recognise that angles are a property of shape or a description of a turn.
- identify right angles.
- recognise that two right angles make a half-turn & three make a three quarter turn.
- identify whether angles are greater than or less than a right angle.

Statistics

- interpret and present data using bar charts, pictograms and tables.
- solve one-step and two-step questions using information presented in



		scaled bar charts, pictograms and tables.
<p>We would expect almost all children to achieve these things in</p> <p>Year 4</p>	<p>Number, place value, approximation and estimation/rounding</p> <ul style="list-style-type: none"> • count in multiples of 6, 7, 9, 25 and 1,000. • order and compare numbers beyond 1,000. • find 1,000 more or less than a given number. • recognise the place value of each digit in a 4-digit number. • read Roman numerals to 100 and know that over time the numeral system changed to include the concept of zero and place value. • identify, represent and estimate numbers using different representations. • round any number to the nearest 10, 100 or 1,000. • count backwards through zero to include negative numbers. • solve number and practical problems with the above (involving increasingly large numbers). <p>Calculations</p> <ul style="list-style-type: none"> • add and subtract numbers with up to 4-digits using the formal written methods of columnar addition and subtraction. • estimate and use inverse operations to check answers in a calculation. • solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why. • recall multiplication and division facts up to 12x12. • 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. • recognise and use factor pairs and commutativity in mental calculations. • multiply 2-digit numbers by a 1-digit number using formal written layout. • solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. <p>Fractions, decimals and percentages</p> <ul style="list-style-type: none"> • count up and down in hundredths. • recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. • recognise and show using diagrams, families of common equivalent fractions. • add and subtract fractions within the same denominator. • recognise and write decimal equivalents to 1/4, 1/2 and 3/4. 	<p>Measurement</p> <ul style="list-style-type: none"> • compare different measures, including money in £ and p. • estimate different measures, including money in £ and p. • calculate different measures. Including money in £ and p. • read, write and convert time between analogue and digital 12 hour clocks. • read, write and convert time between analogue and digital 24 hour clocks. • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. • convert between different units of measurements • measure and calculate the perimeter of a rectilinear figure in cm and m. • find the area of rectilinear shapes by counting squares. • calculate different measures <p>Geometry –properties of shapes</p> <ul style="list-style-type: none"> • compare and classify geometric shapes, including quadrilateral and triangles based on their properties and sizes. • identify lines of symmetry in 2D shapes presented in different orientations. • complete a simple symmetric figure with respect to a specific line of symmetry, • identify acute and obtuse angles and compare and order angles up to two right angles by size. <p>Geometry –position and direction</p> <ul style="list-style-type: none"> • describe movements between positions as translations of a given unit to the left/right and up/down. • describe positions on a 2D grid as coordinates in the first quadrant. • plot specified points and draw sides to complete a given polygon. <p>Statistics</p> <ul style="list-style-type: none"> • interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.



	<ul style="list-style-type: none"> • recognise and write decimal equivalents of any number of tenths or hundredths. • round decimals with one decimal place to the nearest whole number. • compare numbers with the same number of decimal places up to 2 decimal places. • find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. • solve problems involving increasingly harder fractions and fractions to divide quantities, including non-unit fractions where the answer is a whole number. • solve simple measure and money problems involving fractions and decimals to 2 decimal places. 	
<p>We would expect almost all children to achieve these things in</p> <p>Year 5</p>	<p>Number, place value, approximation and estimation/rounding</p> <ul style="list-style-type: none"> • count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. • read, write, order and compare numbers to at least 1,000,000. • determine the value of each digit in numbers up to 1,000,000. • read Roman numerals to 1,000 (M) and recognise years written in Roman numerals. • round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000. • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. • solve number problems and practical problems with the above. <p>Calculations</p> <ul style="list-style-type: none"> • add and subtract numbers mentally with increasingly large numbers. • add and subtract whole numbers with more than 4 digits, including using formal written methods. • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • identify multiples and factors, including finding all factor pairs of a number and common factor pairs of two numbers. • use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • establish whether a number up to 100 is prime and recall prime numbers up to 19. 	<p>Measurement</p> <ul style="list-style-type: none"> • solve problems involving converting between units of time. • convert between different units of metric measure. • understand and use approximate equivalences between metric units and common imperial units, such as inches, pounds and pints. • measure and calculate the perimeter of composite rectilinear shapes in cm and m. • calculate and compare the area of rectangles (inclsquares), and including using standard units (cm² and cm³) to estimate the area of irregular shapes. • estimate volume and capacity. • use all four operations to solve problems involving money using decimal notation, including scaling. <p>Geometry –properties of shapes</p> <ul style="list-style-type: none"> • use the properties of rectangles to deduce related facts and find missing lengths and angles. • distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • identify 3D shapes, including cubes and other cuboids, from 2D representations. • know angles are measured in degrees. • estimate and compare acute, obtuse and reflex angles. • identify angles at a point and one whole turn. • identify angles at a point on a straight line and ½ a turn. • identify other multiples of 90°. • draw given angles and measure them in degrees.



<ul style="list-style-type: none"> • recognise and use square numbers and cube numbers, and the notation for squared and cubed. • multiply and divide numbers mentally drawing on known facts. • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers. • divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context. • solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes. • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. • solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates. <p>Fractions, decimals and percentages</p> <ul style="list-style-type: none"> • recognise mixed numbers and improper fractions and convert from one form to the other. • write mathematical statements >1 as a mixed number. • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • compare and order fractions whose denominators are multiples of the same number. • add and subtract fractions with the same denominator and denominators that are multiples of the same number. • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. • read and write decimal numbers as fractions. • recognise and can use thousandths and relate them to tenths, hundredths and decimal equivalents. • round decimals with 2 decimal places to the nearest whole number and 1 decimal place. • read, write, order and compare numbers with up to 3 decimal places. • solve problems involving numbers up to 3 decimal places. • recognise the percent symbol and understand that percent relates to 'number parts per hundred'. • write percentages as a fraction with denominator hundred, and as a 	<p>Geometry –position and direction</p> <ul style="list-style-type: none"> • 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. <p>Statistics</p> <ul style="list-style-type: none"> • complete, read and interpret information in tables, including timetables. • solve comparison, sum and difference problems using information presented in a line graph.
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	<p>decimal.</p> <ul style="list-style-type: none"> • 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 or a multiple of 10 or 25. 	
<p>We would expect almost all children to achieve these things in</p> <p>Year 6</p>	<p>Number, place value, approximation and estimation/rounding</p> <ul style="list-style-type: none"> • read, write, order and compare numbers up to 10,000,000. • determine the value of each digit in numbers up to 10,000,000. • round any whole number to a required degree of accuracy. • use negative numbers in context, and calculate intervals across zero. • solve number problems and practical problems with the above. <p>Calculations</p> <ul style="list-style-type: none"> • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • identify common factors, common multiples and prime numbers. • perform mental calculations, including with mixed operations and large numbers. • multiply multi-digit numbers up to 4 digits by a 2 digit whole number using the formal written method of long multiplication. • 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. • divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate. • solve problems involving addition, subtraction, multiplication and division. • use my knowledge of the order of operations to carry out calculations involving the four operations. <p>Fractions, decimals and percentages</p> <ul style="list-style-type: none"> • use common factors to simplify fractions and use common multiples to express fractions in the same denomination. • compare and order fractions, including fractions >1. • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • multiply simple pairs of proper fractions, writing the answer in the simplest form. • divide proper fractions by whole numbers. 	<p>Measurement</p> <ul style="list-style-type: none"> • 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 of up to 3 decimal places. • convert between miles and kilometres. • recognise that shapes with the same areas can have different perimeters and vice versa. • calculate the area of parallelograms and triangles. • recognise when it is possible to use the formulae for the area of shapes. • calculate, estimate and compare volume of cubes and cuboids, using standard units. • recognise when it is possible to use the formulae for the volume of shapes. • solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate. <p>Geometry –properties of shapes</p> <ul style="list-style-type: none"> • compare and classify geometric shapes based on the properties and sizes. • describe simple 3D shapes. • draw 2D shapes given dimensions and angles. • recognise and build simple 3D shapes, including making nets. • find unknown angles in any triangles, quadrilaterals and regular polygons. • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • illustrate and name parts of circles, including radius, diameter and circumference. • know the diameter is twice the radius. <p>Geometry –position and direction</p> <ul style="list-style-type: none"> • draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes. • describe positions on the full co-ordinate grid (all four quadrants). <p>Statistics</p> <ul style="list-style-type: none"> • interpret and construct pie charts and line graphs and use these to solve



	<ul style="list-style-type: none">• associate a fraction with division to calculate decimal fractions equivalents for a simple fraction.• identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places.• multiply 1-digit numbers with up to 2 decimal places by whole numbers.• use written division methods in cases where the answer has up to 2 decimal places.• solve problems which require answers to be rounded to specified degrees of accuracy.• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts <p>Ratio and proportion</p> <ul style="list-style-type: none">• solve problems involving the relative sizes of two quantities, where missing values can be found using integer multiplication and division facts.• solve problems involving the calculation of percentages and the use of percentage comparisons.• solve problems involving similar shapes where the scale factor is known or can be found.• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. <p>Algebra</p> <ul style="list-style-type: none">• express missing number problems algebraically.• use a simple formulae.• generate and describe linear number sequences.• find pairs of numbers that satisfy an equation with two unknowns.• enumerate possibilities of combinations of two variables.	<p>problems</p> <ul style="list-style-type: none">• calculate and interpret the mean as an average.
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