



Skills Map for Mathematics

Mathematics

'We count, we practise fluency, we problem solve in order to live life in all its fullness'

Year 1

Expected	<ul style="list-style-type: none"> Greater Depth
Number & Place Value	
<ul style="list-style-type: none"> Count to and across 100 forwards and backwards, beginning with 0 or 1 or from any given number Count, read and write numbers to 100 in numerals Count, read and write numbers to 20 in words Begin using language of equal to, more than, less than, most and least/ fewest. 	<ul style="list-style-type: none"> Work in a systematic, logical way to find patterns, generalise and justify mathematical thinking.
Addition & Subtraction	
<ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition, subtraction and equals. Represent including symbols) and use number bonds and related subtraction facts within 20. Add and subtract one digit and two digit numbers to 20, including 0. 	<ul style="list-style-type: none"> Can reason about addition, using the correct mathematical language. A pupils can explain that when you add 0 to a number, the number does not change. These 2 numbers added together will have to be more/less than 10 because... Pupils can work out more complex mental calculations e.g 10 + 9 is the same as 11 + 8 Pupils can solve more complex missing number problems e.g 20 – 6 = 7 + ? Pupils can solve problems involving more than one step.
Multiplication & Division	
<ul style="list-style-type: none"> Count in multiples of 2s, 5s, and 10s 	<ul style="list-style-type: none"> Children know and can prove that repeated addition is the same as multiplication (using arrays or number line) Children recognise times tables patterns e.g. Numbers in the ten times table will always end in a 0; five times table a 5 or a 0; two times table will always be even.
Fraction, Decimals & Percentages	
<ul style="list-style-type: none"> Recognise, find and name $\frac{1}{2}$ as one of two equal parts of an object, shape or quantity. Begin to recognise, find and name a $\frac{1}{4}$ as one of 4 equal parts 	<ul style="list-style-type: none"> Pupils can find half of a shape, number or quantity and explain that each part must be equal.
Geometry	
<ul style="list-style-type: none"> Describe position, direction and movement including, whole, half and quarter and $\frac{3}{4}$ turns. Recognise and name common 2D and 3D shapes. 	<ul style="list-style-type: none"> Pupils can spot 2D shapes in the faces of 3D shapes.
Measurement	
<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes Compare, describe and solve practical problems for: 	<ul style="list-style-type: none"> A pupil can identify which of a selection of o'clock and half past times will occur next.



Compassion, Hope, Reverence, Wisdom

<ul style="list-style-type: none">• Lengths and Height (long/short) / (double, half)• Mass/Weight (heavy/light)• Capacity/ volume (full/empty)• Time (quicker/slower), (earlier/later), (before/after), (today/yesterday)• Tell the time to the nearest hour and draw the hands on a clock to show these times.• Recognise and use language relating to dates including the days of the week, months and years	<ul style="list-style-type: none">• Pupils can arrange 4 containers of different sizes (mass/weight/volume ect.)
<i>Statistics</i>	
<ul style="list-style-type: none">• N/A	<ul style="list-style-type: none">•



Year 2

Expected	Greater Depth
Number & Place Value	
<ul style="list-style-type: none"> Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus. 	<ul style="list-style-type: none"> Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. $29 + 17 = 15 + 4 +$ 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have? etc.)
Addition & Subtraction	
<ul style="list-style-type: none"> Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. $48 + 35$; $72 - 17$) Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$) 	<ul style="list-style-type: none"> Solve unfamiliar + and - subtraction word problems involving more than one step. To solve more complex missing number problems <i>e.g</i> $14 + ? = 15 + 27$
Multiplication & Division	
<ul style="list-style-type: none"> Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary Use the inverse of multiplication to solve simple division problems. 	<ul style="list-style-type: none"> Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts. solve unfamiliar X and \div word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')
Fraction, Decimals & Percentages	
<ul style="list-style-type: none"> Identify $1/4$, $1/3$, $1/2$, $2/4$, $3/4$, of a number or shape, and know that all parts must be equal parts of the whole 	<ul style="list-style-type: none"> To compare fractions in a word problem <i>e.g.</i> Which is more $1/2$ of £10 or $1/4$ of £12
Geometry	
<ul style="list-style-type: none"> Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry. 	<ul style="list-style-type: none"> Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).
Measurement	
<ul style="list-style-type: none"> Read scales in divisions of ones, twos, fives and tens Use different coins to make the same amount <i>e.g</i> make 50p in different ways/how many £2 coins in £20) Read the time on a clock to the nearest 15 minutes 	<ul style="list-style-type: none"> Read scales where not all numbers on the scale are given and estimate points in between Read the time on a clock to the nearest 5 minutes



Compassion, Hope, Reverence, Wisdom

Statistics

- To be able to read simple bar charts and pictograms

- N/A



Year 3

Year 3	
<i>Expected</i>	<i>Greater Depth</i>
Number & Place Value	
<ul style="list-style-type: none"> • Compare and order numbers up to 1000 • Read and write numbers up to 1000 in numerals and words • Find 10 more and 10 less than a given number • Recognise the place value of each digit in a 3 digit number • Solve number problems and practical problems involving place value. 	<ul style="list-style-type: none"> • Can work in a systematic, logical way to find patterns, generalise and justify mathematical thinking. • Can reason and represent place value in different ways using mathematical language. • Pupils can partition a 3-digit number and use that to work out its complement to 1000, explaining their reasoning through place value. • Can calculate mental efficient strategies
Addition & Subtraction	
<ul style="list-style-type: none"> • Add and subtract numbers mentally, including a 3 digit number and ones, a 3 digit number and tens and a 3 digit number and hundreds. • Add and subtract numbers with up to 3 digits using a formal written method of column addition and subtraction. • Solve problems including missing number problems and more complex addition and subtraction • Add and subtract amounts of money, giving change in both pence and £s. 	<ul style="list-style-type: none"> • Pupils can solve missing number problems such as $384 = 171 + ?$ • Can use formal methods to solve problems including multi-step problems • Pupils can solve more complex word problems
Multiplication & Division	
<ul style="list-style-type: none"> • Count in multiples of 4, 8, 50 and 100 • Recall and use multiplication and division facts for the 3,4 and 8 times tables. • Write and calculate multiplication statements for multiplication and division using tables they do know, including for 2-digit times one-digit numbers both mental and written methods. 	<ul style="list-style-type: none"> • Fluent knowledge of large majority or times tables. • Can solve multi-step word problems involving multiplication and division.
Fraction, Decimals & Percentages	
<ul style="list-style-type: none"> • 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 10. • Recognise, find and write fractions of a set of discrete objects: unit fractions and non-unit fractions with small denominators. • Compare and order unit fractions and non-unit fractions with small denominators • Compare and order unit fractions and non-unit fractions with the same denominator 	<ul style="list-style-type: none"> • Can recognise the relationships between fractions and decimals and express them as equivalent quantities. • Can calculate using fractions and decimals. • Add fractions where the total becomes more than 1. E.g $3/5 + 4/5 = 7/5$ and be able to explain what $7/5$ means. •



Compassion, Hope, Reverence, Wisdom

<ul style="list-style-type: none">• Add and subtract fractions with the same denominator within one whole	
Geometry	
<ul style="list-style-type: none">• Measure the perimeter of simple 2D shapes• Identify right angles, recognise 2 right angles make a half turn• Identify whether angles are greater or small than a right angle (acute or obtuse)• Identify vertical and horizontal lines, perpendicular lines and parallel lines.• Recognise 2D and 3D shapes in different positions and orientations and describe them.	<ul style="list-style-type: none">• Can use mathematical reasoning to compare angles.• To draw shapes containing certain given properties.
Measurement	
<ul style="list-style-type: none">• Measure, compare, add and subtract lengths (m/cm/mm) mass (g/kg) , Volume capacity (l/ml)• Tell and write the time from an analogue clock , including Roman Numerals from 1-12; 12 hour clocks and 24 hour clocks.• Record and compare time in respect to seconds, minutes and hours• Know the days in each month, number of days in a year- including leap year.	<ul style="list-style-type: none">• Can calculate with measures.
Statistics	
<ul style="list-style-type: none">• Interpret data using bar charts, pictograms, tables including one step and 2 step problems, using information represented on scales and tables.	<ul style="list-style-type: none">•



Year 4

Year 4	
Expected	Greater Depth
Number & Place Value	
<ul style="list-style-type: none"> Count backwards through 0, including negative numbers Order and compare numbers beyond a 1000, including up to 2 decimal places Find a 100 more or less than any given number Recognise the place value of each digit up to 10 000 Round any number 10, 100, 1000 Read roman Numerals up to 100 	<ul style="list-style-type: none"> Can work in a systematic and logical way in order to solve problems, justifying mathematical thinking. Can reason about place value e.g 551 tens = 5510 Can calculate mentally using efficient strategies.
Addition & Subtraction	
<ul style="list-style-type: none"> Add and subtract up to any 4 digit number using a formal written method Solve addition and subtraction problems (1 and 2 step) in contexts, deciding which operations to use and why. 	<ul style="list-style-type: none"> Justify between formal written methods and mental calculations Can apply formal methods to solve multi-step problems
Multiplication & Division	
<ul style="list-style-type: none"> Count in multiples of 6, 7, 8, 9, 25, 1000 Recall all multiplication and division facts up to 12 X 12 Multiply 2 and 3 digit numbers by a 1 digit number using a formal written method. 	<ul style="list-style-type: none"> Can work out e.g. 345 X 6 mentally by calculating 300 X 6; 40 X 6; 5 X 6 Can apply formal methods to solve multi-step problems
Fraction, Decimals & Percentages	
<ul style="list-style-type: none"> Recognise and show using diagrams e.g fraction walls, common equivalent fractions including adding and subtracting fractions Can find fractions of a given quantity Count up and down in 1/100s Round decimals to one decimal place Solve simple word problems involving fractions and decimals using formal written methods where appropriate. 	<ul style="list-style-type: none"> Can recognise relationships between fractions and decimals and express them as equivalent fractions. Order decimals and fractions on a number lines Can calculate problems and word problems involving fractions and decimals.
Geometry	
<ul style="list-style-type: none"> Compare and classify geometric shapes, using the language orientation, as well as identifying acute, obtuse and right angles Measure and calculate the area and perimeter of rectilinear shapes- including squares Identify lines of symmetry in different polygons Plot specified points and draw sides to complete a given polygon 	<ul style="list-style-type: none"> Can use mathematical reasoning to compare and order angles Can compare angles in order to decide whether a polygon is regular or not.



Compassion, Hope, Reverence, Wisdom

<ul style="list-style-type: none">Describe and plot positions on 2D grids as co-ordinates, including describing movements through translation.	
Measurement	
<ul style="list-style-type: none">Convert between units of measurement (km to m/ hours to minutes)Solve problems involving converting time between analogue and digital and 12 hour and 24 hour clocks.	<ul style="list-style-type: none">Can convert and order across and range of measuresCan solve word problems involving measurement.
Statistics	
<ul style="list-style-type: none">Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	<ul style="list-style-type: none">N/A
Algebra	
<ul style="list-style-type: none">	<ul style="list-style-type: none">Can substitute values into a simple formula e.g. $3 \times a = 2 = 17$. What is the value of a?



Year 5

Expected	Greater Depth
Number & Place Value	
<ul style="list-style-type: none"> • Read, write, order and compare numbers up to 100 000 and determine the value of each digit, including up to 3 decimal places • Round any number up to 100 000 to the nearest 10, 100, 1000 10,000, 100, 000, whole number and to 1dp • Interpret negative numbers in context. • Count forwards and backwards through 0 including negative numbers 	<ul style="list-style-type: none"> • Can work in a systematic, logical way to find patterns, generalise and justify using mathematical thinking • Can reason and present a place value problem in different ways using mathematical language. • Calculate mental strategies efficiently
Addition & Subtraction	
<ul style="list-style-type: none"> • Add and subtract whole numbers with more than 4 digits , including a formal written method and solve multi-step problems • Add and subtract whole numbers with more than 4 digits mentally • Solve problems involving multiples and factors (including factor pairs) • Solve problems involving prime numbers, composite numbers, squared and cubed numbers. 	<ul style="list-style-type: none"> • Can use formal methods to solve multi-step problems
Multiplication & Division	
<ul style="list-style-type: none"> • Solve problems involving multiplication and division. • Multiply and divide whole numbers and decimals by 10, 100 and 1000 	<ul style="list-style-type: none"> • To solve more complex multi-step problems • To solve 2 digit by 2 digit problems • To solve problems when the divisor is a 2 digit number
Fraction, Decimals & Percentages	
<ul style="list-style-type: none"> • Compare and order fractions whose denominators are all multiples of the same number • Read and write decimal numbers as fractions • Recognise fractions, decimals and percentages • Read, write, order and compare numbers up to 3 dp • Solve problems that involve knowledge of percentages and decimal equivalents of a $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and denominators with a multiple of 10 or 25. • Add and subtract fractions with the same denominators and denominators with the same multiples. • Multiply proper and mixed numbers by whole numbers 	<ul style="list-style-type: none"> • Can solve problems between fractions and decimals and percentages and express them as equivalent quantities.
Geometry	
<ul style="list-style-type: none"> • Measure and calculate the perimeter of composite rectilinear shapes in cm an m 	<ul style="list-style-type: none"> • To find the area of a triangle • Calculate the dimensions of a rectangle based on a given perimeter.



Compassion, Hope, Reverence, Wisdom

<ul style="list-style-type: none">• Calculate the area of rectangles (& squares).• Estimate the area of irregular shapes• Estimate and identify volume• Draw given angles in degrees• Measure angles accurately• Identify and describe the position of shapes after reflection and translation• Identify 3D shapes from 2D representations	
Measurement	
<ul style="list-style-type: none">• Convert between units of metric measure	<ul style="list-style-type: none">• Can calculate with measures.• Can apply angle properties in different contexts.• A pupil can construct a triangle with given specific angles.
Statistics	
<ul style="list-style-type: none">• Complete, read and interpret information time tables including time tables and line graphs	<ul style="list-style-type: none">•
Algebra	
<ul style="list-style-type: none">• N/A	<ul style="list-style-type: none">• Can substitute values into a simple formula to solve problems



Year 6

<i>Expected</i>	<i>Greater Depth</i>
<i>Number & Place Value</i>	
<ul style="list-style-type: none"> • Can demonstrate an understanding of place value, including number up to 1 million and decimals • Rounding any whole number to any degree of accuracy • Use negative numbers in contexts including calculating across 0 • Perform mental calculations including mixed operations and large numbers 	<ul style="list-style-type: none"> • Can work in a systematic, logical way to find patterns, generalise and justify using mathematical thinking • Have a sufficient depth and knowledge and understanding to represent and explain mathematical concepts, using mathematical language.
<i>Addition & Subtraction</i>	
<ul style="list-style-type: none"> • Can use formal methods to solve multi-step problems • Can use formal methods to solve problems including all 4 operations • Use knowledge or order of operations to solve problems (BODMAS) 	<ul style="list-style-type: none"> •
<i>Multiplication & Division</i>	
<ul style="list-style-type: none"> • Can use formal methods to solve problems including all 4 operations • Can solve multiplication problems involving 2 or 3 digit numbers by 2 digit numbers • Can solve division problems when the divisor is any 2 digit number 	<ul style="list-style-type: none"> •
<i>Fraction, Decimals, Percentages & Ratio</i>	
<ul style="list-style-type: none"> • Can recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities. • Express remainder as decimal or fraction • Add and subtract fractions with mixed denominators and mixed numbers • Multiply pairs of proper fractions • Divide fractions by whole numbers • Use common factors to simplify, compare and order fractions • Can calculate using fractions, decimals and percentages. • Solve problems using ratio 	<ul style="list-style-type: none"> •
<i>Geometry</i>	
<ul style="list-style-type: none"> • Calculate and compare volumes in cubes and cuboids. • Can reason why shapes have the same area. • Calculate areas in parallelograms and triangles • Use mathematical reasoning to find missing angles. • Draw 2D shapes given dimensions and angles • Understand circle properties (radius, diameter and circumference) • Draw, translate and reflect points on shapes on a 4 quadrant grid including 2 step problems. 	<ul style="list-style-type: none"> •
<i>Measurement</i>	
<ul style="list-style-type: none"> • Can calculate with measures 	<ul style="list-style-type: none"> •



Compassion, Hope, Reverence, Wisdom

<ul style="list-style-type: none">• Convert between miles and km	
<i>Statistics</i>	
<ul style="list-style-type: none">• Interpret, construct and solve problems involving pie charts and line graphs• Calculate the mean as average	<ul style="list-style-type: none">•
<i>Algebra</i>	
<ul style="list-style-type: none">• Can substitute values into a simple formula to solve problems• Describe number sequences• Express missing problems algebraically• Find pairs of numbers that satisfies equations unknown	<ul style="list-style-type: none">•