

* Substantive knowledge is the 'what' of Maths – the specific content, facts and skills children need to master to build a firm foundation for progression.



Key Substantive* Knowledge in Maths: Progression Map

Number and Place Value							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><u>Number:</u></p> <ul style="list-style-type: none"> • Recognise numbers to 5 and beyond • Verbally count beyond 5 • Subitise up to 3 • Say one number for each item in order: 1, 2, 3, 4, 5 (1:1 correspondence) • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinality') <p><u>Numerical Patterns:</u></p> <ul style="list-style-type: none"> • Begin to compare quantities using vocabulary more/less/same 	<p><u>Number:</u></p> <ul style="list-style-type: none"> • Recognise numbers to 10 and beyond • Subitise up to 5 • Verbally count beyond 20 • Know number bonds to 5 • Understand one more/less • Recognise and create patterns <p><u>Numerical Patterns:</u></p> <ul style="list-style-type: none"> • Compare quantities using vocabulary more/fewer/equal 	<ul style="list-style-type: none"> • Count to and across 100, forwards and backwards • Count, order, read and write numbers to 100 in numerals • Know how to read and write numbers to 20 in numerals and words • Understand one more/less • Count in multiples of 2s, 5s and 10s • Recognise repeating patterns 	<ul style="list-style-type: none"> • Count in steps of 2, 3, and 5 from 0 • Count in 10s from any number, forward and backward • Know how to read and write numbers to at least 100 in numerals and words. • Recognise place value in 2-digit numbers 	<ul style="list-style-type: none"> • Count from 0 in multiples of 4, 8, 50 and 100 • Find 10 or 100 more or less than a given number • Know how to read and write numbers to at least 1000 in numerals and words. • Recognise place value in 3-digit numbers 	<ul style="list-style-type: none"> • Count in multiples of 6, 7, 9, 25 and 1000 • Count backwards through zero to include negative numbers • Know 1000 more/less than given number • Know positive numbers are greater than 0 / negative numbers are less than 0 • Recognise place value in 4-digit numbers • Round number to the nearest 10, 100, 1000 	<ul style="list-style-type: none"> • Count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000 • Count forwards and backwards with positive and negative whole numbers, including through zero (in context) • Know how to read and write numbers to at least 100 in numerals and identify the value of each digit. 	<ul style="list-style-type: none"> • Know how to read, order and write numbers to at least 10,000,000 in numerals and identify the value of each digit

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Operations (+/-/x/÷)							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> • Begin simple + / - using objects • In practical contexts, understand doubling/halving/sharing • Develop number composition understanding (e.g. 5 as 3+2, 4+1) 	<ul style="list-style-type: none"> • Add and subtract within 20 – number bonds • Solve problems involving addition and subtraction • Begin to understand equal groups • Begin to understand equal groups 	<ul style="list-style-type: none"> • Add and subtract 2-digit numbers and ones/tens • Recall and use facts from the 2-, 5-, and 10-times tables • Understand odd and even numbers • Solve problems (included worded) for +/- 	<ul style="list-style-type: none"> • Add and subtract 3-digit numbers using formal written methods • Recall and use facts from the 3-, 4- and 8-times tables • Begin to solve multi-step problems in +/- 	<ul style="list-style-type: none"> • Solve +/- problems involving 4-digit numbers • Recall and use facts from all times tables up to 12 x 12 • Multiply 2 and 3-digit numbers by 1-digit numbers using formal methods 	<ul style="list-style-type: none"> • +/- larger numbers using mental and written methods • Multiply 4-digit numbers by a 2-digit number • Solve problems involving factors, multiples and prime numbers 	<ul style="list-style-type: none"> • Use formal written methods for multi-digit operations • Solve multi step operations across +/-/x/÷ • Algebra: Use simple formulae and solve equations. • Ratio and Proportion: Solve problems involving scaling and ratio.

Fractions							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> • Part/whole vocabulary use in practical contexts. 	<ul style="list-style-type: none"> • Recognise and name $\frac{1}{2}$ and $\frac{1}{4}$ of objects, shapes and quantities 	<ul style="list-style-type: none"> • Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a shape or quantity • Begin to identify equivalence (E.G $\frac{1}{2} = \frac{2}{4}$) 	<ul style="list-style-type: none"> • Recognise and show equivalent fractions • + / - fractions with the same denominator 	<ul style="list-style-type: none"> • Recognise and show families of equivalent fractions • +/- fractions with the same denominator (>1) • Recognise and write basic decimal equivalents 	<ul style="list-style-type: none"> • Compare, order and convert fractions, decimals and percentages • +/- fractions with the same denominator / multiples of each other 	<ul style="list-style-type: none"> • Simplify fractions using equivalence • x / ÷ fractions • Calculate percentages of amounts

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Measurement							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Make simple comparison between two objects relating to size (bigger/smaller, longer/shorter etc) 	<ul style="list-style-type: none"> • Develop comparisons by using vocabulary 'than' – e.g. this is heavier <i>than</i> that. 	<ul style="list-style-type: none"> • Compare, describe, and measure lengths, heights, weights, and volumes. • Know the value of coins and notes. • Tell the time to the hour and half past. 	<ul style="list-style-type: none"> • Measure and compare lengths, weights, and volumes. • Recognise £ and p symbols • Tell the time to the nearest 5 minutes 	<ul style="list-style-type: none"> • Measure and calculate perimeter. • Add and subtract money, giving change. • Tell the time to the nearest minute. 	<ul style="list-style-type: none"> • Convert between units of measurement (e.g., km to m). • Calculate area and perimeter. • Solve problems involving money and time. 	<ul style="list-style-type: none"> • Convert between metric units and understand imperial units. • Calculate the area of rectangles and volume of cubes/cuboids. 	<ul style="list-style-type: none"> • Solve problems involving perimeter, area, and volume. • Convert between miles and kilometres.

Geometry							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Explore 2D shapes and 3D shapes using informal language. 	<ul style="list-style-type: none"> • Rotate and manipulate shapes. • Compose and decompose shapes 	<ul style="list-style-type: none"> • Recognise and name 2D shapes (e.g., square, circle, triangle) and 3D shapes (e.g., cube, sphere). • Describe position, direction, and movement as 'turns. 	<ul style="list-style-type: none"> • Identify and describe properties of 2D and 3D shapes. • Use mathematical vocabulary to describe position and direction. 	<ul style="list-style-type: none"> • Draw and recognise angles (right angles, greater/less than a right angle). • Recognise and describe properties of 2D and 3D shapes. 	<ul style="list-style-type: none"> • Classify shapes based on properties (e.g., symmetry, angles). • Identify acute and obtuse angles. • Plot points on a coordinate grid (first quadrant). 	<ul style="list-style-type: none"> • Identify regular and irregular polygons. • Recognise and draw reflections and translations. • Know that angles are measured in degrees. 	<ul style="list-style-type: none"> • Recognise and classify 2D and 3D shapes based on properties. • Calculate missing angles. • Plot coordinates in all four quadrants.

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Statistics							
EYFS		KS1		KS2			
3-4 Years	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> Interpret and construct simple pictograms, tally charts, block diagrams, and tables. 	<ul style="list-style-type: none"> Interpret and present data using bar charts, pictograms, and tables. 	<ul style="list-style-type: none"> Solve comparison and sum problems using information in charts and graphs. 	<ul style="list-style-type: none"> Solve problems using line graphs and tables. 	<ul style="list-style-type: none"> Interpret pie charts and line graphs. Calculate and interpret mean averages.