



CHJS Curriculum Progression for Mathematics



Let your light shine (Matthew 5:16)

In Mathematics, children are encouraged to let their light shine by taking delight in learning knowledge which can be applied to God's wonderful world; not only while at Church Hill C of E Junior School but as pupils transition to secondary school and adult life. Pupils will acquire knowledge which can be applied across the curriculum to inquire, debate and problem solve. Through our Mathematics lesson at Church Hill C of E Junior School, we encourage pupils to learn Christian values including courage, responsibility and tolerance.

Substantive Knowledge	Year 3	Year 4	Year 5	Year 6
Please see White Rose Maths scheme of learning: Maths resources for teachers White Rose Education				
Disciplinary Knowledge	Year 3	Year 4	Year 5	Year 6
Please see White Rose Maths scheme of learning: Maths resources for teachers White Rose Education				
Vocabulary (build upon previous year groups: e.g. ones, tens hundreds is applicable to all years but is first introduced in Year 3).	Number number numeral zero how many...? equal to equivalent to more, less odd, even	Number thousand, ten thousand, hundred thousand, million sequence relationship Roman numerals integer, positive, negative, above/ below zero, minus, negative numbers	Number factor pair formula divisibility square number prime number ascending/descending order Fractions (including decimals and percentages)	Number factorise prime factor digit sum Algebra formulae equation unknown Measurement

	<p>multiple of factor of predict pattern > greater than < less than Place value ones, tens, hundreds digit exchange fewer, smaller, less more, larger, bigger, greater order estimate round up, round down Addition and subtraction add, more, and make, sum, total take away, less difference between equals is the same as number bonds/ pair/ facts missing number column boundary Multiplication and division multiple, factor groups of times product repeated addition sharing, share equally</p>	<p>Addition and subtraction inverse Multiplication and division inverse square, squared cube, cubed Fractions (including decimals) hundredths decimal, decimal, decimal point Measurement unit of measure Time timetable arrive, depart Geometry oblong rectilinear equilateral triangle, isosceles triangle, scalene triangle heptagon, parallelogram, rhombus, trapezium polygon translate, translation</p>	<p>proper/improper fraction equivalent, reduced to, cancel percentage, per cent, % Measurement imperial, metric square metre (m²), square millimetre (mm²) Money discount, currency Geometry radius, diameter axis of symmetry x-axis, y-axis, quadrant coordinates Position and direction protractor</p>	<p>circumference Statistics pie chart mean, mode, median</p>
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	<p>doubling, halving array row, column number patterns multiplication table</p> <p>Fractions fraction fraction equivalent parts of a whole numerator, denominator half, quarter thirds, fifths</p> <p>Measure length millimetre, centimetre, metre, kilometre, mile length, height, width, depth perimeter area, cm² weigh kilogram, gram heavy, light litre capacity, volume</p> <p>Time hour o'clock, half past, quarter past, quarter to am, pm minute Roman numerals</p> <p>Geometry</p>			
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	<p>corner, side point, pointed rectangle (including square), rectangular circle, circular triangle, triangular pentagon, pentagonal hexagon, hexagonal octagon, octagonal quadrilateral right-angled parallel, perpendicular face, edge, vertex, vertices cube, cuboid pyramid sphere, hemisphere cone cylinder prism, triangular prism</p> <p>symmetry reflect</p> <p>Position and direction whole turn, half turn, quarter turn, three-quarter turn rotate, rotation angle, is a greater/smaller angle than degree right angle acute angle obtuse angle</p> <p>Statistics count, tally, sort, vote survey, questionnaire, data graph, block graph, pictogram represent group, set list, table, chart, bar chart, frequency table Carroll diagram, Venn diagram label, title, axis, axes diagram most popular,</p>			
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	most common least popular, least common			
Cross-curricular reading				WWII Codebreakers (Guided reading)
	Available for independent reading in the library: On a Beam of Light: A Story of Albert Einstein (Science) Maths Adventures (Science) Nothing Stopped Sophie: The Story of Unshakeable Mathematician Sophie Germain Hardcover Wild Fibonacci: Nature's Secret Code Revealed (Science)			
Cross-curricular links	Cycle A Recording results for scientific experiments (Science)	Cycle B Recording results for scientific experiments (Science) Mapping skills (Geography) Anglo-Saxon cooking (DT)	Recording results for scientific experiments (Science) Numbers to 41 (French)	Enterprise challenge Recording results for scientific experiments (Science) WW2 Codebreakers (History/ Guided reading) Rationing and carrot cookies (History/ DT) The Golden Age of Baghdad 900AD (History) Islamic patterns including symmetry (History/ Art) Potato cakes (DT)
Christian Values	Courage For pupils to be confident mathematicians, they must be willing to grapple through mistakes, take risks in their learning and try again when things don't work out. Teaching staff will encourage through their classroom ethos, including following the Church Hill C of E Junior School positive rewards policy. Fairness Staff will encourage pupils to share their ideas to support the learning of their peers. All pupils will be given the opportunity to contribute to lessons (all voices must be heard), access support including the use of concrete and pictorial representations, pre-teach to support lower attaining learners and follow up intervention if needed. Kindness			

	<p>All children will be educated with kindness and respect. Teaching staff will provide opportunities for mathematical decision-making by knowing each individual child, being aware of how they learn and their learning needs. This enables teaching staff to guide their next small step of progress.</p> <p>Koinonia Mathematics lessons will use shared discussion, useful feedback and positive comments about pupil's willingness to contribute, which encourages successful and secure mathematicians. By working as a team alongside peers and teaching staff, pupils will become mathematicians who are positive and confident about the subject and its application across the curriculum.</p> <p>Responsibility For teaching staff, they will understand when to offer help and assistance whilst also respecting the wish of pupils to explain their thinking. Through the mastery approach to learning, pupils are enabled to take responsibility for their own learning.</p> <p>Thankfulness Teaching staff will model exemplary attitudes to learning for all pupils, encouraging pupils to "have a go" and understand that mistakes and unpicking misconceptions is a crucial part of the learning journey.</p> <p>Truthfulness Pupils will be taught that mistakes and correcting misconceptions is one of the crucial parts of any learning journey in mathematics. Mathematics is a vehicle to understand the world around you and the discovery of truth.</p>
<p>Spiritual Development</p>	<p>We promote a sense of inquiry in mathematics. Pupils begin by learning and understanding the number system which leads to an appreciation of infinity and nothing; pattern and order. Through pattern spotting, pupils will then be able to explain shape and regularity. Pupils are encouraged to reason to explain whether something is true, how certain it is and the likelihood of an event happening. At Church Hill we strive for pupils to experience the wonder of number, formulae and equations and appreciate that mathematics can be used to explain the world we live, and wider space and time.</p>