



KS3 Curriculum Map: Mathematics

	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Year 7	Sequences	Place value, ordering and rounding	Graphing data	Directed number	Speed, distance and time	Add and subtract fractions
	Algebraic notation and substitution	Four operations		Fractions and percentages of amounts		
	Expressions and equations	Averages and range Rounding and estimation	Fractions, decimals and percentages	Perimeter and area	Properties of number	Angles and polygons
Year 8	Ratio	Coordinates and graphs	Area, volume and density	Indices	Angles in parallel lines and polygons	Graphs and charts
	Proportion and scale	Multiply and divide fractions	Equations and inequalities	Standard form	Tables and probability	Sequences
	Algebraic manipulation	Symmetry and reflection	Percentages	Interpret and represent data	Circles	Consolidation
Year 9	Properties of number	Equations, inequalities and formulae	Maths and money	Ratio and proportion	Pythagoras' theorem	Transformations
	Percentages	Fractions		Constructions and congruence		
		Area and volume	Rates	Straight line graphs	Similarity	Non-linear graphs
		Standard form	Ratio and proportion	Algebraic manipulation	Probability	Trigonometry

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KS3 Curriculum Map: Mathematics



KS3 Curriculum Map: Mathematics

	Year 7	Intent
Advent 1	Sequences	<ol style="list-style-type: none"> 1) Describe and continue sequences and find the next terms (2) 2) Linear and non-linear sequences 3) Continue linear and non-linear sequences 4) Term-to-term rules 5) Finding missing terms (Extension)
	Algebraic notation and substitution	<ol style="list-style-type: none"> 1) 1-step function machines (number) 2) 2-step function machines (number) 3) 1-step function machines (algebra) 4) 2-step function machines (algebra) 5) Substitution (one and two-step) 6) Find a function (one and two-step)
	Expressions and equations	<ol style="list-style-type: none"> 1) Related facts 2) Like and unlike terms and collecting like terms 3) Equality and equivalence 4) Solving 1-step equations (all 4 operations) 5) Solve 2-step equations
Advent 2	Place value, ordering and rounding	<ol style="list-style-type: none"> 1) Write integers in numerals and words and compare and order decimals 2) Intervals on a number line 3) Place value for decimals and compare and order decimals 4) Decimals on a number line 5) Round to powers of 10 and round to the nearest integer 6) Round to decimal places Extension: Powers of 10 Numbers greater than 1 in standard form Negative powers of 10 Numbers between 0 and 1 in standard form
	Four operations	<ol style="list-style-type: none"> 1) Add and subtract integers and decimals 2) Multiply and divide by 10, 100 and 1000 3) Multiply integers 4) Divide integers 5) Multiply decimals 6) Divide decimals by integers 7) Order of operations Extension: Multiply by 0.1 and 0.01 Divide by a decimal



KS3 Curriculum Map: Mathematics

	Averages and range		<ol style="list-style-type: none"> 1) Mode and mean 2) Median and range 3) Solve problems with averages and range (Extension)
	Rounding and estimation		<ol style="list-style-type: none"> 1) Round to significant figures 2) Estimate answers to calculations and solve problems with estimation 3) Understand and use error interval notation (Extension)
Lent 1	Graphing data		<ol style="list-style-type: none"> 1) Pictograms 2) Bar charts and dual bar charts 3) Composite bar charts 4) Coordinates in the first quadrant 5) Scatter graphs 6) Correlation and lines of best fit 7) Time-series graphs 8) Non-linear relationships
	Fractions, decimals and percentages		<ol style="list-style-type: none"> 1) Represent tenths and hundredths 2) Tenths, hundredths, fifths and quarters 3) Eighths and thousandths 4) Number lines with fractions and decimals 5) Fractions as diagrams 6) Fractions on a number line 7) Equivalent fractions 8) Fractions as division 9) Understand percentages 10) Convert (simple) fractions, decimals and percentages 11) Fraction, decimals and percentages greater than 1 (Extension)
Lent 2	Directed number		<ol style="list-style-type: none"> 1) Directed number and number lines and compare and order directed numbers 2) Calculations that cross zero and directed number and zero pairs 3) Add and subtract directed numbers 4) Multiply and divide directed numbers 5) Order of operations with directed numbers 6) Use a calculator with directed numbers



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Pentecost 1	Fractions and percentages of amounts	<ol style="list-style-type: none"> 1) Fraction of an amount 2) Use a fraction to find the whole 3) Percentage of an amount (non-calculator) 4) Percentage of an amount (calculator) 5) Percentage increase 6) Percentage decrease <p>Extension: Use a percentage to find the whole Solve problems with fractions and percentages greater than 1</p>
	Perimeter and area	<ol style="list-style-type: none"> 1) Convert metric units of length 2) Perimeter of a polygon 3) Perimeter of a compound shape 4) Area of rectangles and parallelograms 5) Area of a triangle 6) Area of a trapezium <p>Extension: Solve problems with perimeter and area Form expressions with perimeter and area</p>
	Speed, distance and time	<ol style="list-style-type: none"> 1) Convert between milliseconds, seconds, minutes and hours 2) Convert between hours, days and years 3) Fractions of time and use of a calculator 4) Calculate speed 5) Calculate time and distance 6) Solve problems with speed, distance and time 7) Interpret distance-time graphs 8) Draw distance-time graphs 9) Solve problems with tables and timetables 10) Solve problems with time and the calendar <p>Extension: Calculate speed from a distance-time graph</p>
	Properties of number	<ol style="list-style-type: none"> 1) Multiples 2) Factors 3) Prime numbers 4) Write a number as a product of prime factors 5) Highest common factor 6) Lowest common multiple 7) Square, cube and triangular numbers 8) Square roots and cube roots 9) Explore higher powers and roots (Extension) <p>Extension: HCF and LCM from a Venn diagram Use factors to simplify calculations</p>



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Pentecost 2	Add and subtract fractions	<ol style="list-style-type: none">1) Simplify a fraction2) Convert between mixed numbers and improper fractions3) Add and subtract fractions with the same denominator4) Add and subtract with fractions and integers5) Add and subtract fractions where denominators share a simple common multiple6) Add and subtract fractions with any denominator7) Add and subtract improper fractions and mixed numbers8) Use equivalence to add and subtract decimals and fractions (Extension)9) Add and subtract simple algebraic fractions (Extension)10) Substitution and solving equations with fraction (Extension)
	Angles and polygons	<ol style="list-style-type: none">1) Draw and measure lines2) Draw and measure angles3) Understand and use geometric notation4) Angles on a straight line5) Angles around a point6) Vertically opposite angles7) Recognise and name polygons8) Angles in a triangle9) Angles in a quadrilateral10) Solve problems with angles11) Angles in parallel lines (Extension)12) Angles in a polygon (Extension) Extension: Simple proofs



KS3 Curriculum Map: Mathematics

	Year 8	Intent
Advent 1	Ratio (6 lessons)	<ol style="list-style-type: none"> 1) Understand and simplify ratios 2) Ratio problems (whole given) 3) Ratio problems (part given) 4) Ratio problems (difference given) 5) Compare ratios and fractions Extension: Express in the form 1 : n and n : 1 <ol style="list-style-type: none"> 6) Problem solving with ratios
	Proportion and Scale (6 lessons)	<ol style="list-style-type: none"> 1) Direct proportion 2) Conversion graphs and direct proportion graphs 3) Convert between currencies 4) Similar shapes 5) Converting metric units and scale diagrams 6) Interpret maps using scales and ratios
	Algebraic Manipulation (6 lessons)	<ol style="list-style-type: none"> 1) Form algebraic expressions 2) Identify and use formula, expressions, identifies and equations and simplifying expressions 3) Use directed number with algebra and substitution with directed number 4) Expand a single bracket (Extension: expand single brackets and simplify) 5) Factorise into a single bracket 6) Extension: Expand double brackets
Advent 2	Coordinates and Graphs (9 lessons)	<ol style="list-style-type: none"> 1) Coordinates in all four quadrants 2) Recap scatter graphs – plot onto a printed axes, including outliers 3) Lines parallel to the axes and recognise and use the line $y = x$ 4) Tables of values 5) Lines of the form $y = mx$ (extension: link to direct proportion problems) 6) Introduce gradient and lines with a negative gradient 7) Lines of the form $y = x + c$ 8) Lines of the form $y = mx + c$ 9) Extension: Find the midpoint of a line segment
	Multiply and Divide Fractions (6 lessons)	<ol style="list-style-type: none"> 1) Recap understanding of fractions (simplifying, converting mixed numbers, diagrams) 2) Multiply a pair of fractions and multiply a fraction by an integer 3) Understand reciprocals and divide a fraction by an integer 4) Divide a fraction by a unit fraction and divide a pair of fractions



KS3 Curriculum Map: Mathematics

Lent 1		<ul style="list-style-type: none"> 5) Multiply and divide mixed numbers 6) Consolidation (Extension: multiply and divide algebraic fractions)
	Symmetry and Reflection (3 lessons)	<ul style="list-style-type: none"> 1) Recognise line symmetry and rotational symmetry 2) Reflect a shape in a horizontal, vertical and diagonal line 3) Reflect a shape in a given line equation $y = a$ and $x = a$ Extension: Describe a reflection
	Area, Volume and Density (6 lessons)	<ul style="list-style-type: none"> 1) Recognise 2D and 3D shapes and state faces/edges/vertices 2) Area of 2D shapes 3) Area of 2D shapes, including compound shapes 4) Recognise prisms and volume of cubes and cuboids 5) Convert metric units of mass and capacity 6) Understand units of density, mass and volume and solve problems with density, mass and volume
Lent 2	Equations and Inequalities (6 lessons)	<ul style="list-style-type: none"> 1) Solve 1 and 2 step equations 2) Solve more complex equations 3) Solve fractional equations 4) Form and solve equations 5) Solve equations with unknowns on both sides 6) Understand and use inequalities and use them on a number line
	Percentages (9 lessons)	<ul style="list-style-type: none"> 1) Convert between percentages and decimals, including greater than 1 2) Percentages of an amount (non-calculator) 3) Percentages of an amount (calculator) using a multiplier 4) Increasing and decreasing by a percentage (non calculator) 5) Increasing and decreasing by a percentage (calculator) using multipliers 6) Express one number as a fraction or percentage of another (calculator and non-calculator) 7) Percentage change, focussing on profit and loss 8) Extension: Reverse percentages 9) Mixed percentage problems
	Indices (6 lessons)	
	Standard Form (3 lessons)	
	Interpret and Represent Data (6 lessons)	



KS3 Curriculum Map: Mathematics

Pentecost 1	Angles in Parallel Lines and Polygons (9 lessons)		
	Tables and Probability (9 lessons)		
Pentecost 2	Circles (6 lessons)		
	Graphs and Charts (6 lessons)		
	Sequences (3 lessons)		



KS3 Curriculum Map: Mathematics

	Year 9	Intent
Advent 1	Properties of number	<ol style="list-style-type: none"> 1. Factors, multiples and primes 2. Write a number as a product of prime factors 3. HCF, LCM- Jacks method 4. Venn diagrams(First use) 5. Use a Venn Diagram to calculate the HCF and Lcm
	Percentages	<ol style="list-style-type: none"> 1. Percentage increase and decrease non calculator and calc 2. Solve problems with percentages calc and non calc 3. Calculate simple interest 4. Calculate compound interest 5. Extension- Reverse percentage. 6. Extension- Express a change as a percentage
	Area and Volume	<ol style="list-style-type: none"> 1. Volume of prisms 2. Area of 2d shapes/ circumference. 3. Area of 2d shapes/ circumference. 4. Nets 5. Surface area of prisms, cubes/cuboids 6. Volume of cylinders
Advent 2	Equations, Inequalities and Formulae (focus on inequalities)	<ol style="list-style-type: none"> 1. Solve inequalities and represent on a number line 2. Inequalities with brackets 3. Inequalities with negative numbers 4. Inequalities with unknowns both sides 5. Substitute into formulae and equations 6. Change the subject of a formula 7. Solve problems with equations and inequalities (E)
	Fractions	<ol style="list-style-type: none"> 1. Add and subtract fractions 2. Multiply and divide fractions 3. Fraction of an amount
	Rates	<ol style="list-style-type: none"> 1. Speed, distance and time 2. Distance-time graphs 3. Flow problems and their graphs 4. Rates of change and their units 5. Convert compound units
	Standard Form	<ol style="list-style-type: none"> 1. Numbers in standard form(into and out of) with comparing and ordering numbers in standard form 2. Multiply and divide numbers in standard form 3. Add and subtract numbers in standard form
Lent 1	Maths and Money	<ol style="list-style-type: none"> 1. Understand a bank account, ways to pay and ways to save 2. Jobs and pay 3. Value added tax 4. Running a house or business 5. Budgeting 6. Borrowing(buying a house), Borrowing(loans) 7. Spending overseas 8. Insurance 9. Investing(E)
	Straight Line Graphs	<ol style="list-style-type: none"> 1. Explore gradients and calculate them 2. Explore intercepts and $y=Mx+c$ 3. Find the equation of a line from a graph 4. Interpret gradient and intercepts of real-life graphs 5. Re-arrange equations to the form $y=mx+c$ (E) 6. Graph inequalities (E)
	Ratio and Proportion	<ol style="list-style-type: none"> 1. Direct proportion (Recipes, unitary method) 2. Direct proportion and conversion graphs 3. Inverse proportion 4. Inverse proportion graphs (E) 5. Ratio problems (whole or part given) 6. 7.



KS3 Curriculum Map: Mathematics

Lent 2	Constructions and Congruence	<ol style="list-style-type: none"> 1. Construct using ASA, SAS, SSS 2. Constructions (bisectors, including to or from a point) 3. As above 4. Identify congruent figures, congruent triangles 5. As above 6. Construct and interpret scale drawings
	Similarity	<ol style="list-style-type: none"> 1. Recognise enlargement and similarity (calculate scale factors) 2. Work out unknown lengths and angles in similar shapes 3. Solve problems with similar triangles/ Ratio in right-angled triangles.
	Algebraic Manipulation	<ol style="list-style-type: none"> 1. Expand single brackets and simplify(with negatives and multiple brackets) 2. Expand single brackets and simplify/Factorise into a single bracket. 3. Factorise into a single bracket 4. Expand double brackets 5. Explore more complex double brackets 6. Factorise quadratic expressions(including brackets)
Pentecost 1	Pythagoras's Theorem	<ol style="list-style-type: none"> 1. Identify the hypotenuse/Pythagoras(find the hypotenuse) 2. Pythagoras(find any side) 3. Use Pythagoras on co-ordinate axes 4. Determine whether a triangle is right angled 5. Mixed problems 6. Pythagoras in 3D (E)
	Non-Linear Graphs	<ol style="list-style-type: none"> 1. Substitute, into quadratic equations 2. Draw quadratic graphs, interpret quadratic graphs 3. Draw more complex quadratic graphs, interpret quadratic graphs 4. Draw cubic graphs, interpret cubic graphs 5. Interpret, reciprocal and exponential graphs (E) 6. Interpret roots, intercepts and turning points (E)
	Probability	<ol style="list-style-type: none"> 1. Identify and represent sets/ Intersection of a set 2. Union of a set/ Complement of a set(E) 3. Probability of a single event 4. Use diagrams to work out probability/ probability from a Venn diagram 5. Relative frequency/ expected outcomes 6. Independent events
Pentecost 2	Transformations	<ol style="list-style-type: none"> 1. Translation/ describe a translation 2. Rotation about a point/ describe a rotation 3. Reflection 4. Enlargement(positive scale factor)/ Enlargement from a point(positive scale factor) 5. Enlargement from a point(positive scale factor) Enlargement with fractional scale factor(E)/ describe an enlargement 6. Mixed transformations
	Simultaneous Equations	<ol style="list-style-type: none"> 1. Substitution/use one value to find another/Solve simultaneous equations using graphs(given the graph) 2. Introduction to simultaneous equations/ Solve simultaneous equations(no adjustments) 3. Solve simultaneous equations(no adjustments)/ Manipulating equations/ Solve simultaneous equations(adjust one) 4. Solve simultaneous equations(adjust one) 5. Embed technique and variations including negatives 6. Solve simultaneous equations(adjust both)/ Solve simultaneous equations by substitution

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KS3 Curriculum Map: Mathematics

	Trigonometry	<ol style="list-style-type: none">1. Identify hypotenuse, opposite and adjacent/ use calculator to find values of theta(all ratios)2. Use the tangent ratio to find lengths3. Use the sine and cosine ratios to find lengths4. Use sine and cosine to find unknown angles5. Chose the right method6. Mixed problems in context using trigonometry
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