CARDINAL NEWMAN CATHOLIC SCHOOL

Cardinal Newman School: Medium Term Plan Maths Year 10 FOUNDATION

Overview: Purpose? People can feel that they are not good at maths when they are learning the wrong topics, or when they move on too quickly. Learning should be seen as a journey and we can only learn new topics when we have a secure foundation in the topics that come before them.
Knowledge: Students will learn Maths content required for GCSE Maths.
Skills: Students will be accessing questions based on the content covering all 3 AOs: AO1: Use and apply standard techniques, AO2: Reason, interpret and communicate mathematically, AO3: Solve problems within mathematics and in other contexts
End Point: Pitstops are provided for each stage before moving onto the next. 3 main Maths assessments (cumulative-based on the content taught from September) check students progress throughout the year.

Year 10	Autumn Term				
Topics/ Skills	**Prior Learning:**	**Next Steps:**	**National Specification links:**	**Key Words/ Vocabulary:**	**Mathswatch videos:??**
Number: • Place value • Negative numbers • Powers and roots • BIDMAS • Factors and multiples • Writing and simplifying fractions • Addition and subtraction • Multiplication and division • Rounding • Calculation problems • Fractions, decimals, percentages conversions • Using a calculator	K3 Number skills	• Fractions of an amount • Calculations with percentages • Fractions • Estimating • Error intervals • Prime factors, HCF and LCM • Indices	N1 N2 N3 N4 N6 N10 N15	Place value, negative numbers, power, index, BIDMAS/BODMAS, factor, multiple, fraction, simplify, sum, difference, product, quotient, round, decimal, percentage	1, 92 23, 68a, 68b 29 75 28 27a 17, 18 31, 32, 90 22a, 22b 85 77
Algebra: • Simplifying Algebra • Writing expressions • Substitution • Solving one step equations • Coordinates	KS3 Algebra skills	• Function machines • Drawing graphs • Solving equations • Expanding and factorising	A1 A2 A4 A8 A17	Simplify, collect like terms, expression, term, substitute, solve, equation	33, 34, 35 137 95 135a 8
Geometry and Measures: • Time • Area and perimeter • Angles	KS3 Geometry and Measures skills	• Conversions and units • Area and circumference of circles Plans and elevations	G1 G3 G14 G16 G17	Time, coordinate, area, perimeter, angle, acute, obtuse, reflex, right angle	6a, 6b 52, 53, 54, 55, 56 13, 45, 46a, 46b, 121, 122
Probability and Statistics: • Pictograms	KS3 Probability and Statistics skills	• Frequency polygons • Frequency trees	S2 S4	Pictogram, systematic, probability, average,	16 58

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• Systematic listing • Probability • Averages • Bar charts • Stem and leaf diagrams		• Two-way tables • Pie charts	P3 P8	mode, median, mean, range, bar chart, comparative bar chart, composite bar chart, stem and leaf diagram	14, 59, 125, 204 62 15 128b
Pitstops and Assessments: Stage 1 Pitstop, Stage 2a Pitstop, Stage 2b Pitstop, Autumn Assessment, Stage 3 Pitstop					

Year 10	**Spring Term**				
Topics/ Skills	**Prior Learning:**	**Next Steps:**	**National Specification links:**	**Key Words/ Vocabulary:**	**Mathswatch videos:??**
Number: • Fractions of an amount • Calculations with percentages • Fractions • Estimating • Error intervals • Prime factors, HCF and LCM • Indices	• Place value • Negative numbers • Powers and roots • BIDMAS • Factors and multiples • Writing and simplifying fractions • Addition and subtraction • Multiplication and division • Rounding • Calculation problems • Fractions, decimals, percentages conversions • Using a calculator	• Standard form	N2 N4 N7 N12 N14 N15	Fraction, percentage, estimate, error interval, rounding, prime factors, Highest Common Factor, Lowest Common Multiple, index, power	72 40, 86, 87, 108 71, 73, 74 91 155a 78, 79, 80 82

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Algebra: • Function machines • Drawing graphs • Solving equations • Expanding and factorising	• Simplifying Algebra • Writing expressions • Substitution • Solving one step equations	• Sequences (nth term) • Inequalities • Forming and solving equations	A4 A7 A8 A9 A17	Function, graph, coordinate, gradient, y-intercept, solve, equation, expand, factorise	36 96 135a 93, 134a 94
Ratio and proportion: • Writing and simplifying ratio • Scale drawings • Exchange rates • Ratio • Percentage change	KS3 Ratio and proportion skills	• Writing a ratio as a fraction or linear function • Direct and inverse proportion	R2 R4 R5 R9	Ratio, simplify, scale, exchange rate, share	38 105 39, 106, 165a 109
Geometry and Measures: • Conversions and units • Area and circumference of circles • Plans and elevations	• Time • Coordinates • Area and perimeter • Angles	• Transformations • Pythagoras • Surface Area • Volume of a Prism • Cylinders	G14 G17 G13	Convert, unit, area, circumference, circle, radius, diameter, circumference, plan, elevation	112 116, 117, 118 51
Probability and Statistics: • Frequency polygons • Frequency trees • Two-way tables • Pie charts	• Pictograms • Systematic listing • Probability • Averages • Bar charts • Stem and leaf diagrams	• Scatter graphs • Averages from frequency tables • Probability – Relative frequency	P1 P9 S2	Frequency polygon, frequency tree, two-way table, pie chart	65b 57 61 128a
Pitstops and Assessments: Stage 4a Pitstop, Stage 4b Pitstop, Spring Assessment, Stage 5 Pitstop					

Year 10	**Summer Term**				
Topics/ Skills	**Prior Learning:**	**Next Steps:**	**National Specification links:**	**Key Words/ Vocabulary:**	**Mathswatch videos:??**
Number: • Standard form	Number: • Fractions of an amount • Calculations with percentages • Fractions • Estimating • Error intervals • Prime factors, HCF and LCM	GCSE Past paper application	N9	Interest, compound, depreciation, standard form, reverse percentages	83

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	• Indices				
Algebra: • Sequences (nth term) • Inequalities • Forming and solving equations	• Function machines • Drawing graphs • Solving equations Expanding and factorising	• Expanding and factorising quadratics • Solving quadratics by factorising • Drawing quadratic graphs • Drawing cubic/reciprocal graphs • Changing the subject of a formula • Gradient of a line • Equation of a line • Simultaneous equations (algebraically and graphically)	A3 A22 A23 A24 A25	Sequence, nth term, Inequality, integer, solve, equation	102, 103, 104, 141 138, 139 137
Ratio and proportion: • Compound interest and depreciation • Reverse percentages	• Writing and simplifying ratio • Scale drawings • Exchange rates • Ratio • Percentage change	• Writing a ratio as a fraction or linear function • Direct and inverse proportion	R9 R16		164 110
Geometry and Measures: • Transformations • Pythagoras • Surface Area • Volume of a Prism • Cylinders	• Conversions and units • Area and circumference of circles Plans and elevations	• Speed, density and pressure • Real life and distance time graphs • Angles in parallel lines • Angles in polygons • Loci and construction • Bearings	G7 G12 G16 G20	Transformation, rotation, reflection, translation, enlargement, Pythagoras, hypotenuse, prism, surface area, volume, cylinder	48 49 50 148 150a, 150c 114a, 114b 115, 119

		• Vectors • Similar shapes (lengths) • Sector areas and arc lengths • Spheres and cones • SOH CAH TOA trigonometry • Exact trigonometry values			
Probability and Statistics: • Scatter graphs • Averages from frequency tables • Probability – Relative frequency	• Frequency polygons • Frequency trees • Two-way tables Pie chart	• Probability trees • Venn diagrams and simple set notation	S2 S4 S6	Scatter diagram, average, frequency table, mean, mode, median, range, probability, relative frequency	129 130a, 130b 125
Pitstops and Assessments: Stage 6a Pitstop, Stage 6b Assessment, Summer Assessment, Stage 7 Pitstop					