North Gosforth Academy

MATHEMATICS: Curriculum plan 2023 - 2024 (HIGHER PATHWAY)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Number • HCF/LCM, prime factors • Powers and roots, index laws • FDP equivalence and ordering • Rounding	Number • Calculating with decimals • Negative numbers in context Probability • Theoretical and experimental probability • Outcomes/sample space Shape, Space and Measure • Geometric Notation • Properties of 2D/3D shapes • Constructing triangles	Number • Ratio: comparing and sharing into a ratio • Proportional reasoning: ratio/proportion comparisons, scale factors Algebra • Simplifying expressions • Expanding brackets • Substitution Shape, Space and Measure • Angles in triangles and quadrilaterals	Number • Calculating with fractions and mixed numbers • Percentages (increase/decrease, multipliers) Algebra • Solving equations Shape, Space and Measure • Units of Measure	Shape, Space and Measure • Area of compound shapes and trapezia • Volume and surface area of cuboids Statistics • Charts and graphs • Pie charts • Averages Algebra • Sequences	Algebra • Equations of straight lines: plotting and identifying Shape, Space and Measure • Transformations: reflection, rotation and translation
8	Number • Prime factors • Index laws • Standard Form: converting to and from • FDP – recurring decimals • Rounding and estimation • Calculating with negative numbers • Order of operations	Algebra • Simplifying expressions • Expanding single brackets and factorising • Substitution • Solving equations • Rearranging formulae Shape, Space and Measure • Scale drawing and enlargement • Plans and elevations • Bearings	Shape, Space and Measure • Angles in parallel lines • Angles in polygons Number • Ratio: comparisons and mixing • Proportional reasoning: simple compound measures	Number • Calculating with fractions and mixed numbers • Percentages (multipliers, profit/loss) Shape, Space and Measure • Area/Circumference of circles • Surface area • Volume of right prisms	Algebra • Sequences • Equations of straight lines: introduction to y=mx+c and sketching • = Shape, Space and Measure • Transformations: reflection, rotation, translation and enlargement	Probability • Relative frequency • Probability trees • Statistics • Pie charts • Scatter Graphs • Averages from frequency tables
9	Number • Indices • Standard Form: calculations • FDP – recurring decimals • Rounding, error intervals and estimation Shape, Space and Measure • Plans and elevations • Construction and loci	Number • Calculating with mixed numbers • Percentages (repeated change, reverse) Algebra • Expand and simplify • Expanding double brackets and factorising Number • Ratio: complex problems • Proportional reasoning: direct/inverse proportion compound measures	Algebra • Sequences: quadratic • Solving equations • Inequalities Shape, Space and Measure • Area/Circumference of circles and sectors	Shape, Space and Measure • Surface area and volume of cylinders • Pythagoras' theorem • Trigonometry in right angle triangles Algebra • Equations of straight lines: y=mx+c	Algebra • Non-linear graphs • Simultaneous equations - introduction Statistics • Frequency polygons • Stem and leaf • Averages from grouped frequency tables	Shape, Space and Measure • Angles in parallel lines • Angles in polygons • Congruence and similarity Probability • Tree diagrams • Independent and dependent events

10	Number • Simplifying surds • Indices; fractional, negative, combined • Upper and lower bound calculations Algebra • Factorising quadratics • Expanding three brackets • Algebraic fractions; simplifying, four operations • Rearranging complex formulae	Algebra • Trigonometric graphs • Quadratic equations; solving from graphs, by factorising, using formula • Roots of quadratic graphs • Sequences; quadratic, geometric SSM • Trigonometry in right angle triangles • Exact trigonometric values • Pythagoras and trigonometry in 3D shapes • Transformations; enlargement and combination	SSM/Algebra • Inverse proportion graphs • Complex compound measures • Proportion equations Shape, Space and Measure • Surface area and volume of cones and spheres • Frustums • Similar area and volume Algebra • Simultaneous equations • Iteration	SSM: • Circle theorems Number • Recurring decimals to fractions • Reverse compound interest/depreciation • Growth and decay Probability • Venn diagrams • Set notations • Independent and dependent events • Conditional probability	Algebra • Graphing inequalities • Solution sets Statistics • Capture/Recapture • Sampling • Cumulative frequency and box plots	Algebra • Equation of line through two points • Equations of parallel and perpendicular lines • Equation of a tangent to a circle SSM • Graphs of exponential functions • Area under a curve • Gradients of non-linear graphs
Year 11 are completing a previous scheme of learning						
11	Statistics • Cumulative frequency and box plots • Histograms Algebra • Expanding multiple brackets • Graphical inequalities • Iteration	Shape, Space and Measure • Circle Theorems • Circle geometry Algebra • Algebraic fractions Algebraic proof	Shape, Space and Measure • Vectors and geometric proofs Algebra • Graph transformations • Gradient and area under a curve • Direct and inverse proportion	Revision and Exam Preparation	Revision and Exam Preparation	Revision and Exam Preparation