Maths α

Precision in Learning, Excellence in Results

Year 7 & 8 Course Plan (Maths Syllabus)

Topic	Subtopics
1. Number - Part 1	1.1. Introduction
	1.2. Calculation with decimals and negative numbers
	1.3. Prime numbers and prime factors
	1.4. HFC and LCM
2. Algebra 1	2.1. Basic rules
	2.2. Simplifying expressions
	2.3. Expanding brackets (single)
	2.4. Rules of indices (Basic)
	2.5. Factorising linear expressions
	2.6. Solving linear equations
	2.7. Linear inequalities
	2.8. Formulas and substituting values into formula
3. Fractions	3.1. Fractions basics (Equivalent fraction / Mixed numbers / Improper fractions.)
	3.2. Adding and subtracting fractions
	3.3. Multiplying and dividing fractions

4. Angles	4.1. Angles and lines
	4.2. Angles in triangles
	4.3. Angles in quadrilaterals
	4.4. Angles in parallel lines
	4.5. Angles in polygons
5. Area and perimeter of 2D shapes	5.1. Squares and rectangles
	5.2. Triangles and parallelograms
	5.3. Area of the trapezium
	5.4. Area and circumference of a circle
	5.5. Arc length and area of sectors
	5.6. Area and perimeter problems
6. Straight line graphs – Part 1	6.1. Cartesian coordinate system
	6.2. Gradient of a straight line (positive and negative gradients)
	6.3. Finding midpoint
	6.4. Drawing straight line graphs
7. Statistics – Part 1	7.1. Finding mean, median, mode and average of a data set
	7.2. Stem and leaf diagrams
	7.3. Pie charts
	7.4. Bar charts
8. Introduction to probability	8.1. Experiment and outcomes
	8.2. Calculating probability

	8.3. Listing outcomes and calculating probabilities
7. Number patterns and sequences	7.1. Triangle and square numbers
	7.2. Pascal triangle
	7.3. Arithmetic sequences
10. Numbers – Part 2	10.1. Subsets of real numbers
	10.2. Rounding and estimation
	10.3. Upper and lower bound
	10.4. Estimating solutions (roots) of an equation by trial and improvement
11. Algebra – Part 2	11.1. Solving simultaneous equations (linear)
	11.2. Expanding double brackets
	11.3. Expanding triple brackets
	11.4. Rules of indices
	11.5. Changing subject of the formula (simple cases)
	11.6. Factorising quadratic expressions
	11.7. Solving quadratic equations by factorisation
12. Fractions, decimals and percentages	12.1. Simplifying fraction numbers
	12.2. Writing fractions as decimals and percentages
	12.3. Percentage increase and percentage decrease
	12.4. Reverse percentages
	12.5. Compound percentage change
	12.6. Simple and compound interest
13. Ratio	13.1. Ratio notation

	13.2. Dividing in a given ratio
	13.3. Ratio problems
	13.4. Increasing and decreasing in a given ratio
	13.5. Ratio in maps
	13.6. Ratio equations
14. Statistics – Part 2	14.1. Data types (Continuous and discrete data)
	14.2. Finding mean, median and mode from frequency tables
	14.3. Scatter graphs and correlation
15. 3D shapes	15.1. Finding volume and total surface area of a prism
	15.2. Cylinders
	15.3. Spheres and cones
16. Geometry – constructions	16.1. Bearing and scale drawing
	16.2. Constructions
	16.3. Loci
17. Straight line graphs – Part 2	17.1. Equations of straight lines
	17.2. Finding gradient of a straight line
	17.3. Finding equation of a straight line
18. Trigonometry	18.1. Pythagoras theorem
	18.2. Sin, Cos, Tan ratios
17. Sets	17.1. Introduction / Set notations
	17.2. Venn diagrams
	17.3. Union, Intersection and Complement of a set

20. Vectors basics	20.1. Vectors and Scalars
	20.2. Column vectors
	20.3. Adding and subtracting column vectors
	20.4. Magnitude of vectors