



Lanark Grammar School Mathematics Department

S3 Course Outline Level 4+

S3

Skills and Understanding	Suggested Topic Workbook Resources	Textbook	Revised
Pythagoras' Theorem			
Introduction to Pythagoras ($c^2 = a^2 + b^2$ & $a^2 = c^2 - b^2$)	N5 Pythagoras' Theorem	Pg. 18 - 19, Ex. 2·1	
The Converse of Pythagoras' Theorem	N5 Pythagoras' Theorem	Pg. 26, Ex. 2·6	
2D Problem Questions	N5 Pythagoras' Theorem	Pg. 20 - 21, Ex. 2·2	
Distance Between Two Points	N5 Pythagoras' Theorem	Pg. 25, Ex. 2·5	
3D Pythagoras: Space Diagonals	N5 Pythagoras' Theorem	Worksheet	
3D Problem Questions	N5 Pythagoras' Theorem	Worksheet	
Algebraic Expressions			
Simplifying expressions	N5 Brackets	Pg. 88, Ex. 9·1	
Expanding Single Brackets	N5 Brackets	Pg. 89 - 90, Ex. 9·2	
Expanding Double Brackets	N5 Brackets	Pg. 90 - 91, Ex. 9·3 Q1-6	
Expanding Square Brackets	N5 Brackets	Pg. 92, Ex. 9·3 Q7	
Factorising: Common Factor	N5 Factorising	Pg. 94, Ex. 9·5	
Factorising: Difference of Two Squares	N5 Factorising	Pg. 95, Ex. 9·6	
Factorising: Trinomials	N5 Factorising	Pg. 96 - 97, Ex. 9·7	
Order of factorising	N5 Factorising	Pg. 97, Ex. 9·8	
Volumes of Solids			
Volume of Cone, Sphere and Pyramid	N5 Volume	Pg. 83 - 84, Ex. 8·5 Pg. 86, Ex. 8·7	

Compound Shapes	N5 Volume	Pg. 84, Q 12 and 13 Pg. 86, Q 5 to 7	
Surface Area	N5 Volume	Pg. 85, Ex. 8-6	
Problem Questions	N5 Volume	Pg.87, Topic in a Nutshell	

Rounding			
Rounding to decimal places with unrounded answer	N5 Significant Figures	Pg. 2, Chapter 0	
Rounding to Significant Figures	N5 Significant Figures	Pg. 15, Ex. 1-7	
Equations & Inequalities			
Equations with Brackets	N5 Linear Equations & Inequations	Pg. 137, Ex. 12·1 Q6-9	
Equations with Fractions	N5 Linear Equations & Inequations	Pg. 139, Ex. 12·3	
Harder Equations with Brackets + Fractions	N5 Linear Equations & Inequations	Pg. 138, Ex. 12·2 Pg. 139, Ex. 12·4	
Inequality Signs + Solving Inequations	N5 Linear Equations & Inequations	Pg. 141 - 142, Ex. 12·5	
Simultaneous Equations			
Graphical Solutions	N5 Simultaneous Equations	Pg. 163, Ex. 15·2	
Basic Elimination Method	N5 Simultaneous Equations	Pg. 164, Ex. 15·3	
Further Elimination Method	N5 Simultaneous Equations	Pg. 165, Ex. 15·4	
Problem Questions	N5 Simultaneous Equations	Pg. 167 - 169, Ex. 15·5	
Fractions			
Simplifying Fractions	N5 Fractions	Pg. 171 - 172, Ex. 16·1	
Mixed Numbers/Improper Fractions	N5 Fractions	Pg. 171 - 172, Ex. 16·1	
Adding/Subtracting basic	N5 Fractions	Pg. 172 - 173, Ex. 16·2	
Adding/Subtracting mixed numbers	N5 Fractions	Pg. 174 - 175, Ex. 16·3	

Multiplying	N5 Fractions	Pg. 176, Ex. 16·4	
Dividing	N5 Fractions	Pg. 177, Ex. 16·5	
Fractions of a Quantity	N5 Fractions	Pg. 2, Chapter 0, Q11	
Percentages			
% of a Quantity (Non Calculator)	N5 Percentages	Pg. 7, Ex. 1·1 Q2	
% of a Quantity (Calculator)	N5 Percentages	Pg. 8, Ex. 1·1 Q7	
Reverse Problems	N5 Percentages	Pg. 14, Ex. 1·6	
Compound Interest (Non Calculator)	N5 Percentages	Worksheet	
Compound Interest (Calculator)	N5 Percentages	Pg. 11, Ex. 1·4	
Appreciation/Depreciation (Non Calculator)	N5 Percentages	Pg. 12, Ex. 1·5, Q1-3	
Appreciation/Depreciation (Calculator)	N5 Percentages	Pg. 12, Ex. 1·5, Q4-8	
Problem Questions	N5 Percentages	Pg.16, Topic in a Nutshell	

Scatter Graphs and Line of Best Fit			
Drawing Scatter Graphs + Correlation	N5 Line of Best Fit	Pg. 150 - 151, Ex. 13·5	
Line of Best Fit	N5 Line of Best Fit	Pg. 150 - 151, Ex. 13·5	
Statistics			
Mean, Median, Mode, Range	N5 Statistics & Comparing Data Sets	Pg. 181 - 183, Ex. 17·1	
5 Figure Summary with Box Plot, IQR, SIQR	N5 Statistics & Comparing Data Sets	Pg. 188 - 189, Ex. 17·4 Pg. 190, Ex. 17·5 Pg. 191 - 192, Ex. 17·6	
Comparing data	N5 Statistics & Comparing Data Sets	Pg. 196, Ex. 17·7, Q7	
Stem and Leaf	N5 Statistics & Comparing Data Sets	Pg. 152 - 153, Ex. 13·6	
Standard Deviation	N5 Statistics & Comparing Data Sets	Pg. 194 - 196, Ex. 17·7	

Sine and Cosine Rules			
Area of a Triangle	N5 Triangle Trigonometry	Pg. 200 - 202, Ex. 18-1	
Sine Rule - Missing Side	N5 Triangle Trigonometry	Pg. 203 - 205, Ex. 18-2	
Sine Rule - Missing Angle	N5 Triangle Trigonometry	Pg. 206 - 207, Ex. 18-3	
Cosine Rule - Missing Side	N5 Triangle Trigonometry	Pg. 208 - 210, Ex. 18-4	
Cosine Rule - Missing Angle	N5 Triangle Trigonometry	Pg. 211, Ex. 18-5	
Choosing the correct Rule	N5 Triangle Trigonometry	Pg. 214 - 215, Ex. 18-7	
Problem Questions including Bearings	N5 Triangle Trigonometry	Pg. 212 - 213, Ex. 18-6	
Gradient			
Gradient Formula	N5 Calculating the Gradient of a Line	Pg. 55 - 56, Ex. 6-1 Pg. 57 - 58, EX. 6-2	
Straight Line Graphs			
Equation $y = mx + c$	N5 Find the Equation of a Straight Line	Pg. 60, Ex. 6-4 Q1-5	
Equation $y - b = m(x - a)$	N5 Find the Equation of a Straight Line	Pg. 61, Ex. 6-4 Q6-11	
Rearranging Equations	N5 Find the Equation of a Straight Line	Pg. 63, Ex. 6-5	
Vectors			
Column Vectors and Vector Diagrams	N5 Vectors	Worksheet	
Multiplying a Vector	N5 Vectors	Worksheet	
Vectors in Opposite Directions	N5 Vectors	Worksheet	
Magnitude of a Vector	N5 Vectors	Worksheet	
Resultant Vector	N5 Vectors	Worksheet	
3D Vectors	N5 Vectors	Worksheet	
Problem Questions	N5 Vectors	Worksheet	

Properties of Shapes			
Angles and Triangles	N5 Properties of Shape	Pg. 106, Ex. 10·6 Q1-3 Pg. 108 Ex. 10·7 Q1-2	
Quadrilaterals, Parallel Lines and Angles	N5 Properties of Shape	Pg. 158 - 160, Ex. 14·1	
Circle Properties (Chords, Semi-Circle, Perpendicular Bisectors)	N5 Properties of Shape	Pg. 107, Ex. 10·6 Q4-11 Pg. 109 Ex. 10·7 Q3-8	
Circle Tangent Problems (inc. Pythagoras, Tangent Kite)	N5 Properties of Shape	Pg. 110, Ex. 10·8 Pg. 112 Ex. 10·9	
S3 Exam			