



**Lanark Grammar School
Mathematics Department**

**National 5 Applications of
Maths
Course Outline**

Unit 1

Skills and Understanding	Suggested Topic Workbook Resources	Video
Number Work	Numeracy	
Whole numbers 4 operations and BODMAS	Pg. 11, Ex. 1	https://corbettmaths.com/2013/06/08/order-of-operations/
Integers	Pg. 13, Ex. 2	https://corbettmaths.com/2013/06/08/negatives-addition-and-subtraction-2/
		https://corbettmaths.com/2012/08/20/multiplying-negative-numbers/
		https://corbettmaths.com/2012/08/20/dividing-involving-negatives/
Revision - Num. Assessment 1	Pg. 15	
Decimals (includes significant figures)	Numeracy	
Rounding decimals (up to 3 d.p.) and rounding to significant figures	Pg. 18, Ex. 1, Pg. 19, Ex.2	https://www.youtube.com/watch?v=YSDRKztD_ck
4 operations (+ - to two decimal places)($\times \div$ by a single-digit whole number)	Pg. 20, Ex.3	https://corbettmaths.com/2012/08/21/dividing-decimals-by-whole-numbers/

Multiplying and Dividing by 10, 100, 1000 and multiples of 10, 100, 1000	Pg. 21, Ex. 4, Pg. 22, Ex. 5	https://corbettmaths.com/2013/06/06/multiplication-by-10-100-and-1000-2/
Problem Solving	Pg. 23, Ex. 6	https://www.youtube.com/watch?v=cHiFSCHXHeU
Revision - Numeracy Assessment 2	Pg. 24	
Non-Calculator Skills		
Long Multiplication	TJ Level E, Pg. 16	https://corbettmaths.com/2013/02/15/multiplication-traditional/
Multiplying Decimals	TJ Level F, Pg. 62	https://corbettmaths.com/2013/02/15/multiplying-decimals-2/
Dividing by a Decimal	TJ, Level F, Pg. 63	https://corbettmaths.com/2013/02/15/division-by-decimals/
Divide by 12 etc (2 and 6 or 2 and 4)		
Percentages	Numeracy	
Non-Calculator Revision (include strategy for eg. 35%)	Pg. 27, Ex. 1, Q 1-4	https://corbettmaths.com/2012/08/20/percentages-of-amounts-non-calculator/
Calculator (including increase/decrease)	Pg. 28, Ex. 1, Q 5-10	https://corbettmaths.com/2012/08/21/increasing-or-decreasing-by-a-percentage/
Expressing One Number as a Percentage of Another	Pg. 29-30, Ex. 2	https://corbettmaths.com/2012/08/21/expressing-one-quantity-as-a-percentage-of-another/
Compound Interest (Long Method)	Pg. 31-32, Ex. 3	

Compound Interest (Quick Method)		https://www.youtube.com/watch?v=DfjBiW27tHY
Appreciation/Depreciation [Percentage rise/percentage fall]	Pg. 33, Ex. 4	https://www.youtube.com/watch?v=rDtlhMqyj7w
		https://www.youtube.com/watch?v=T6MaRvMMDoE
Revision - Num Assessment 3	Pg. 35	
Summer Break		
Fractions	Numeracy	
Revision of Fractions	Pg. 36, Q 4-8	
Top Heavy Fractions and Mixed Numbers	Pg. 38, Ex. 1	https://corbettmaths.com/2013/02/15/mixed-numbers-to-improper-fractions/
		https://corbettmaths.com/2013/02/15/improper-fractions-to-mixed-numbers/
Adding and Subtracting Simple Fractions	Pg. 40, Ex. 2	https://corbettmaths.com/2012/08/21/fractions-addition-and-subtraction/
Adding and Subtracting Harder Fractions	Pg. 42, Ex. 3, + Red Textbook, pg. 186, Ex.10 (or Hodder Gibson N5, Pg. 191)	https://corbettmaths.com/2012/08/21/fractions-addition-and-subtraction/

Multiplying (and Dividing) Fractions	Pg. 42, Ex.4, + Red Textbook, pg. 186, Ex. 11	https://corbettmaths.com/2012/08/21/multiplying-fractions-2/
		https://corbettmaths.com/2012/08/21/division-with-fractions/
Revision - Num. Assessment 4	Pg. 43	
Time/Distance/Speed	NUM and G&M	
TDS - basic calculations	Pg. 46, Ex. 1	https://corbettmaths.com/2016/01/01/speed-distance-time/
Converting between Hours and Minutes and Decimal Hours	Pg. 48-51, Ex. 2 and 3	https://www.bbc.co.uk/bitesize/guides/z4swxnb/revision/3
		https://www.bbc.co.uk/bitesize/guides/z3rk7ty/revision/1
Calculating time intervals including time zones and interpreting timetables	Not covered in the TJ textbook	https://www.youtube.com/watch?v=2r1naFxn46w
TSD exam type questions	Pg. 138, Ex.3	
Revision - G&M Assesement 4 / Revision - Numeracy Assesement 5	Pg. 142 and Pg. 52	
Perimeter and Area 1	NUM and G&M	

Perimeter of Rectilinear Shape and Circle (Revision)	Pg. 54, Ex. 1	https://corbettmaths.com/2012/08/02/perimeter/
		https://corbettmaths.com/2012/08/02/perimeter-of-a-semi-circle/
Area Triangle and Quadrilaterals (Revision)	Pg. 56, Ex. 2	https://corbettmaths.com/2013/12/20/area-of-a-triangle-video-49/
		https://corbettmaths.com/2013/12/21/area-of-a-parallelogram-video-44/
Area of Circle (Revision)	Pg. 57/58, Ex. 3	https://corbettmaths.com/2013/12/22/area-of-a-circle-video-40-and-59/
Composite Area	Pg. 59/60, Ex. 5	https://www.youtube.com/watch?v=by9-95Zn08&list=PLtCaeJ34A5IO_VcVDTyOPt4_wsPxp2DD&index=14
Revision - Numeracy Assessment 6	Pg. 61	
Volume and Capacity	NUM and G&M	
Volume of a Cuboid (Revision)	Pg. 74, Ex. 1	https://corbettmaths.com/2012/08/09/volume-of-cuboids-and-cubes/
Volume of a Prism	Pg. 75/76, Ex. 2	https://corbettmaths.com/2013/04/20/volume-of-a-prism/
		https://corbettmaths.com/2013/03/24/volume-of-an-l-shape-prism/
Volume of a Cylinder	Pg. 77-79, Ex. 3, Q 1-14, 16	https://corbettmaths.com/2013/02/15/volume-of-a-cylinder/
Capacity	Pg. 80, Ex 4 and Pg	https://corbettmaths.com/2014/01/16/metric-units-for-capacity/

	79, Ex. 3, Q 15, 17	
Ratio and Proportion	Numeracy	
Ratio - Revision/Introduction + Simplifying ratio	Pg. 62	https://corbettmaths.com/2013/03/03/simplifying-ratio/
Ratio Calculations	Pg. 64, Ex. 1	https://corbettmaths.com/2013/05/16/ratio-given-one-quantity/
Sharing in a Ratio + Sharing in a Ratio Past Papers	Pg. 66, Ex. 2	https://corbettmaths.com/2013/03/03/ratio-sharing-the-total/
Direct Proportion	Pg.67, Ex. 3	https://corbettmaths.com/2013/04/04/direct-proportion/
Indirect Proportion	Pg. 69, Ex. 4	https://www.youtube.com/watch?v=qv4RnC-Pw5c&list=PLtCeaeJ34A5IO_VcVDTyOPt4_wsPxp2DD&index=9
Revision - Numeracy Assessment 7/ Numeracy Assessment 8	Pg. 71	
Graphs/Charts/Tables	Numeracy	
Interpreting (Revision)	Pg. 85-88, Ex. 1, Q1, 2, 4, 6, 8- 10	
Drawing (Revision)	Pg. 86, Ex. 1, Q 4 and	https://www.khanacademy.org/math/cc-2nd-grade-math/x3184e0ec:data/cc-2nd-bar-graphs/v/creating-bar-charts-1
Stem and Leaf (Revision)	Pg. 88, Ex 1, Q 9-11	https://corbettmaths.com/2012/08/02/drawing-stem-and-leaf-diagrams/
		https://corbettmaths.com/2012/08/02/reading-stem-and-leaf-diagrams-video/

Tables (Revision)	Pg. 93, Ex. 4 and Pg. 84 Q7	
Pie Charts	Pg. 89/90, Ex. 2	https://www.khanacademy.org/math/statistics-probability/analyzing-categorical-data/one-categorical-variable/v/reading-pie-graphs-circle-graphs
Scattergraphs	Pg. 246-250, Ex. 1, 2	https://corbettmaths.com/2012/08/10/scatter-graphs/
		https://corbettmaths.com/2012/08/10/scatter-graphs-correlation/
Probability	NUM and F&S	
Calculating Probability	Pg. 97, Ex. 1, Q1-8	https://corbettmaths.com/2013/05/04/listing-outcomes/
		https://corbettmaths.com/2013/05/07/tree-diagrams/
		https://corbettmaths.com/2013/06/15/probability/
Expected Frequency	Pg. 98, Ex. 1, Q9-11	https://corbettmaths.com/2013/06/20/relative-frequency/
Foreign Exchange (Revision)	NUM	https://corbettmaths.com/2016/01/03/exchange-rates/
Flexible Time/Revision		
N5 Numeracy Assessment		

Unit 2		
Skills and Understanding	Suggested Topic Workbook Resources	Video
Wages and Salaries (weekly, monthly, annually, calculating hourly rate)	Pg. 191 - 192 Ex. 1, Q. 1-7	
Overtime - double, time and a half, treble, calculating hourly rate)	Pg. 192 - 192 Ex. 1, Q. 8-13	https://www.bbc.co.uk/bitesize/guides/zdq39j6/revision/4
Commission and Bonus	Pg. 193, Q. 14-22	https://www.bbc.co.uk/bitesize/guides/zdq39j6/revision/3
Gross Pay, Deductions, Net Pay	Pg. 195, Ex. 2, Q. 1-8	https://www.bbc.co.uk/bitesize/guides/zdq39j6/revision/1
Payslips	Pg. 195, Q.9 - 15	https://www.bbc.co.uk/bitesize/guides/zdq39j6/revision/1
Benefits and Tax Allowances	Pg. 198, Ex. 3, Q. 1-6	

Rates of Income Tax (0%, 20%, 40%, 45%)	Pg. 198, Ex. 3, Q. 7-9	https://www.bbc.co.uk/bitesize/guides/zsgxsbk/revision/2
Revision - F&S Assessment 1 /Finance Assessment 1	Pg. 200	
Money Matters	F & S	
Calculating VAT	Pg. 202-203, Ex. 1	https://www.bbc.co.uk/bitesize/guides/zcndmp3/revision/4
Hire Purchase - Easy	Pg. 204-205, Ex. 2, Q. 1-3	https://www.bbc.co.uk/bitesize/guides/zqmr2p/revision/3 https://www.bbc.co.uk/bitesize/guides/zqmr2p/revision/5
Hire Purchase - Harder + Past Papers	Pg. 204-205, Q.4-10	https://www.bbc.co.uk/bitesize/guides/zqmr2p/revision/4
Insurance	Pg. 206, Ex. 3	
Profit & Loss	Pg. 207, Ex. 4	
Foreign Exchange (use of at least two/three currencies in a multi-stage task)	Pg. 209-211, Ex. 5	https://www.bbc.co.uk/bitesize/guides/zj2g87h/revision/1
Simple/Compound Interests Revision (including quick method) + savings	Pg. 212, Ex. 6, Pg. 213, Ex. 7	https://www.bbc.co.uk/bitesize/guides/zqmr2p/revision/1 https://www.bbc.co.uk/bitesize/guides/zqmr2p/revision/2
Borrowing Money - loans, credit cards, store cards, credit agreements	Pg. 214, Ex. 8	https://www.bbc.co.uk/bitesize/guides/zw7bkqt/revision/2
Revision - F&S Assessment 2/ Finance Assessment 3	Pg. 216	

Best Deals	F & S	
Best Deal - per unit, e.g. 100g, 1l, etc.	Pg. 218, Q.1-2, Pg. 219, Ex. 1, Q. 1-5	https://www.bbc.co.uk/bitesize/guides/zw7bkqt/revision/4
Best Deal - services, purchase options, foreign exchange deals, etc.	Pg. 220, Q. 6-11 + Past Papers	https://www.bbc.co.uk/bitesize/guides/zw7bkqt/revision/3
Revision - F&S Assessment 2/ Finance Assessment 4	Pg. 222	
Budgeting	F & S	
Introduction to Budgeting	Pg. 223, Q.1-3, pg. 224, Ex.1	https://www.bbc.co.uk/bitesize/guides/znbnm39/revision/1
Monthly Budgeting (Scenario 1) / Scenario (2)	Pg. 225, Ex. 2	https://www.bbc.co.uk/bitesize/guides/znbnm39/revision/2
Savings Accounts (Scenario 2)/ Saving for a trip (Scenario1)	Pg. 226, Ex. 3	
Credit & Borrowing (Scenario 3) / Wants and Needs (Scenario 3)	Pg. 228, Ex. 4	https://www.bbc.co.uk/bitesize/guides/z8jv4wx/revision/3
Revision - F&S Assessment 4 + Past Papers/ Finance Assessment 5	Pg. 230	
N5 Finance Assessment (Or combine with Statistics later)		
Statistical Comparisons	F & S	

Mean, median, mode, range to compare data	Pg. 232, Ex. 1	https://corbettmaths.com/2012/08/02/the-mean/
		https://corbettmaths.com/2012/08/02/the-median/
		https://corbettmaths.com/2013/12/21/the-mode-video56/
		https://corbettmaths.com/2012/08/02/the-range-video/
Quartiles and Semi-Interquartile Range	Pg. 236, Ex. 2, Pg.237,Ex.3	https://www.khanacademy.org/math/statistics-probability/summarizing-quantitative-data/interquartile-range-iqr/a/interquartile-range-review
Boxplots - constructing, interpreting and comparing	Pg. 238, Ex. 4	https://corbettmaths.com/2013/05/15/drawing-and-reading-box-plots/
Standard Deviation	Pg. 242, Ex. 5, Q. 3-7	https://www.youtube.com/watch?v=4hvPIQK79GM
Revision - F&S Assessment 5 + Past Papers/ Statistics Assessment 1	Pg. 244	
Scattergraphs	F & S	
Revision - Finance/Statistics Assessment 6	Pg. 251	
Past Paper Type Questions	Exam revision booklet, pg. 18	
Further Probability	F & S	

Independent Events (including using a table/probability trees)	TJ 3b: pg. 146, Ex 4 and pg. 145, Qu 11. TJ N5L, pg. 255 Q7 - 10.	https://www.khanacademy.org/math/ap-statistics/probability-ap/stats-conditional-probability/a/tree-diagrams-conditional-probability
Dependent Events	TJ 3b, pg. 147, Ex 5.	
Past Paper Questions		
Flexible Time/Revision		
N5 Finance and Statistics Assessment (Topics Check or Units Only back-up)		
Christmas Break		

Unit 3

Skills and Understanding	Suggested Topic Workbook Resources	Video
● Revision + Tolerance Involving Percentages	Pg. 111, Pg. 112, Ex. 1	https://www.bbc.co.uk/bitesize/guides/zp32pv4/revision/1
● Effects of Applying Tolerance	Pg. 114	https://www.bbc.co.uk/bitesize/guides/zp32pv4/revision/2
● Tolerance - Revision/ Measure Assessment 5	Pg. 116	
Rules & Formulae	Numeracy and G & M	
● Formulae in Words - Based on two related pieces of information	Pg. 118, Ex. 1	https://corbettmaths.com/2013/03/12/forming-algebraic-notation/
● Formulae with Symbols - Based on two related pieces of information	Pg. 120, Ex. 2	
● Formulae - Harder Examples	Pg. 123, ex. 3	
● G&M Assessment2 / Measure Assessment 2	Pg. 124	

Flexible Time/Revision

Prelim Week

Scale Drawing	G & M	
Converting between units of length, volume and weight	revise	https://www.bbc.co.uk/bitesize/guides/zw38qty/revision/1
Simple scale drawings (ruler only)	3G , pg. 56 - 57	https://www.bbc.co.uk/bitesize/guides/zw38qty/revision/2
Scale Drawings: Ruler and Protractor, including choosing a scale	Pg. 127, Ex. 1	https://www.bbc.co.uk/bitesize/guides/z7hk7ty/revision/1
3 figure bearings: interpreting/drawing bearings, relative bearings	Red book , pg.149, Ex. 3, 4, 6, 7, 8 OR TJ E, pg. 203-204	https://www.youtube.com/watch?v=Jy-IAUOO3MU&list=PLtCeeJ34A5IO_VcVDTyOPt4_wsPxp2DD&index=11
Scale Drawings with Bearings and Distance	Pg. 129, Ex. 2	https://www.bbc.co.uk/bitesize/guides/z7hk7ty/revision/2
Revision + Past Papers / Measure Assessment 3	Pg. 132	

February Break

S4-6 Full Report

Pythagoras' Theorem	G&M	
Revision: Squares, Roots, Finding Hypotenuse, Finding shorter side, Mixed Examples	Pg. 143	https://corbettmaths.com/2012/08/19/pythagoras-video/
Pythagoras Problem Solving in Context : two stage calculations NOT including gradient, e.g. Pythagoras and area, etc.	Pg. 144, Ex.1	https://www.bbc.co.uk/bitesize/guides/zpfj6sg/revision/5
Revision - G&M Assessment 5 + Past Papers	Pg. 148	
Gradients	Geometry & Measure	
Calculating gradient using vertical and horizontal distances including on a coordinate diagram	Pg. 149	https://www.bbc.co.uk/bitesize/guides/znyqtfr/revision/1 https://www.bbc.co.uk/bitesize/guides/z6fj6sg/revision/2
Extension: gradient coordinate formula		https://corbettmaths.com/2013/05/15/gradient-of-a-line/
Using Gradients including with Pythagoras	Pg. 150, Ex. 1	
Revision - G&M Assessment 6	Pg. 153	
Perimeter & Area 2	NUM and G&M	
Area Revision	Pg. 154 and 156	https://corbettmaths.com/2013/12/22/area-of-a-circle-video-40-and-59/ https://corbettmaths.com/2012/08/02/area-of-compound-shapes/

Circle Area Problems	Pg. 157-159	https://corbettmaths.com/2013/12/23/area-of-a-semi-circle-video-47/
Perimeter and Area Past Paper Problems	SQA TPP	
Problem Solving	Geometry & Measure	
Real Life Problem solving (Revision)	Pg. 161	https://www.youtube.com/watch?v=Cyw433Nh61k
Effective Packing	Pg. 162, Ex. 1 and SQA TPP	https://www.youtube.com/watch?v=-LmLvBuLnwg
Patterns, Graphs, Flow charts, Probability Trees,	Pg. 165, Ex. 2	https://corbettmaths.com/2013/05/07/tree-diagrams/
Precedence Tables and Diagrams	Pg. 170, Ex. 3	https://www.youtube.com/watch?v=H6RPztlrKnk
Revision - G&M Assessment 8 + Past Papers	Pg. 172	
Volume 2	G& M	
Volume of a Pyramid and a Cone	Pg. 174, Ex. 1	https://corbettmaths.com/2013/03/05/volume-of-a-pyramid/ https://corbettmaths.com/2013/03/03/volume-of-a-cone/
Volume of a Sphere	Pg. 174, Ex. 1	https://corbettmaths.com/2013/03/03/volume-of-a-sphere/

Volume of Composite Shapes	Pg. 179, Ex. 3	https://www.youtube.com/playlist?list=PL3zMfdajGn5UnSx6_XbjQ903WrIA_kwZw
Revision - G&M Assessment 9	Pg. 182	
N4 Geometry and Measure Assessment ?		
Flexible Time/Revision		
Supplementary Prelim		
Spring Break		
Flexible Time/Revision		
S5/6 Study Leave Begins		
SQA National 5 Exam		