LOWER 5 TH and UPPER 5 TH

L/U 5th GCSE Sets 2,3 sheet 1

2 YEAR G.C.S.E.COURSE LEADING TO THE HIGHER LEVEL EDEXCEL EXAM for sets 2 and some of set 3

Based on the "MATHEMATICS for EDEXCEL GCSE (INTERMEDIATE) CPL and building on the work in ST(P) Books7A, 8A AND 9 A and B This book is a complete course with good reference to the basics and to terminology. It is hoped to encourage pupils to use the book to look up past topics when necessary .

The old ST (P) books 4B, 5B, 5a and other books will be used where more examples are needed along with various prepared sheets, ,reference is also made to previous STP intermediate book. For some topics the HIGHER book will need to be referred to.

Parts of the earliest chapters are basic work and this will be, on the whole assumed, (not for set 3) used as reference and as individual needs arise, and, occasionally, as ' fillers' both for lessons and homework should there be the need . The exercises can be used during final revision in the Upper 5th.

There will be an examination consisting of two papers, partially based on past papers, at the end of the lower 5th and a mock G.C.S.E Higher examination at the beginning of the Spring term in the upper 5th.

Sheets of “homework tests” may be used from 3rd term of the lower 5 ths onwards - some as encouraged extra work in own time - marks to be recorded.

In the upper 5th practice is continually gained through completing past EDEXCEL and other papers.

Set 2 will not complete all parts of the harder parts of the syllabus
Set 3 will complete those parts of the syllabus appropriate to their ability – will vary from tear to year.

NOTES 61 (Pythag) 62(Trig) 63(elev,dep,bearings) 64(loci) 37 (area vol) 30 (dimensions)
65(original %) 47 (reciprocals) 68(inequalities 32 (enlargements)) 40 (earnings)
79 (circle theorems)

TESTS 74 (Pythag & Trig) 75 (BLOCK 1)) 31 (Areas vol) £2 (BLOCK 2) 15 (%) 21 (Social arith)
65(algebra) 66 (Indices etc.) 51 (stats) + others?

SCHEME OF WORK – MATHEMATICS. **L/U 5th GCSE Sets 2,3 sheet 2**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 1 PYTHAGORAS BEARINGS SCALE DRAWINGS TRIGONOMETRY	Squares and square roots Theorem as $hyp^2 = side^2 + side^2$ (3,4,5, 5,12,13). Substitution and solving equations Problems Main compass directions 3 fig bearings accurate drawing problems – mainly bearings sine, cosine and tangent notation definition use of calculator find angle, find side angles of depression, elevation problems mixed trig and pythag problems	Simple squares, $\surd$ s Angle prop // lines drawing, measuring angles, simple constructions	**INTER ch 6** **INTER ch 31** sheets Green book chapt 10 **Notes 61 (Pythagoras)** **INTER ch 20** Green book chapt 14 Book 4 B chapt 14 **Notes 63** **(Dep, elev, bearings)** **INTER ch 32** Green book chapt 19 Book 4B chapt 12 **Notes 62 (Trig)**	**Test – T2*** **Test 73*** **Test 74 (trig & Pythag)**	6 lessons 5 lessons 7 lessons
LOCI	path of points formal constructions standard loci Problems	Simlpe constructions	**INTER ch 27** Book 4 B chapt 18 Green book chapt 26 Sheets **Notes 64 (loci)**	**BLOCK TEST 1**	5 lessons
SIN, COSINE RULE	Later for some block 10				

SCHEME OF WORK – MATHEMATICS. **L/U 5th GCSE Sets 2,3 sheet 3**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 2 AREAS & PERIMETERS	Rev of area and perimeter formulae and method of triangles, basic quads and circles. Compound , trapezium	Basic areas, vol formulae **Notes 27(area)** **Notes** **Notes 29 (circles)**	**Inter ch 21, 23** **ch 26** Green book chapt 11 Book 4 B chapt 4 **Notes 37**	**TEST 30 - part**	2 less
VOLUMES & SURFACE AREA	Drawing solids, nets, vertices, edges, faces, surface area Formula for volume of prism Formulae for surface area, curved surface area of cylinder Volume problems, Capacity, density 3 D Coordinates	Basic **Notes 36 (vol)** **Add surface area**	**INTER ch 29** Green book chapt 5 Book 4 B Green book chapt 12 Green book chapt 1 sheet	**TEST 31 - part**	
UNITS and DIMENSIONS	Dimensions 1D, 2D, 3D formulae Units – metric, imperial, conversion. esp area, volume degree of accuracy Upper/ lower bounds	**Notes 8(units)**	**INTER ch 33** **sheet** Green book chapt 11 **Notes 37 (dim)**	Test ?	
FURTHER 3D TOPICS	Isometric drawing Plans and elevation Planes of symmetry		**INTER ch 29** **INTER ch 22**	**TEST 32 BLOCK 2**	

SCHEME OF WORK – MATHEMATICS. **L/U 5 th GCSE Sets 2,3 sheet 5**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 4 PERCENTAGES	Revision of basics - briefly 1 quantity as % of another appreciation, depreciation Original quantity Simple interest rev compound Interest finance usage: credit cards, loans mortgages, , etc Tax	Def, conversion % of , inc, dec% **notes 24(%)** **38(%+/-)** simple int	**INTER ch 8** Green book chapt 6 Book 4 B chapt8 **INTER ch 9** Book 4 B chapt 7 Book 5 B chapt 3 **Notes 65**	**TEST 15 (%)**	
RATIO	Rev meaning, simplify, Comparison, division Direct proportion Inverse proportion ?	**Notes 21 (ratio)** **Notes 26 (prop)**	**INTER ch 10** Blue book chapt 13		
EXTRA ARITHMETIC **(fitted in at any time)**	Pay bills	**Basic %**	**INTER ch 9** Green book chapt 8 Book 4 B chapt 9 **Notes 40 (money)**		
EXTRA ARITHMETIC (**fitted in at any time)** UNITS	Time time distance graphs speed Money – exchange rates Use of graphs Compound units Twoway tables	 **Notes 8(units)** **Notes 24(%)** **Notes 38(%+/-)**	**INTER ch 9** Green book chapt 8 Book 4 B chapt 1 Chapt 2 **INTER ch 11** **INTER ch 34**	**Test 66**	

SCHEME OF WORK – MATHEMATICS. **L/U5th GCSE Sets 2,3 sheet 4**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 3 INDICES STANDARD FORM	Numerical values Rev of laws y^x button surds – briefly written notation notation on different calcs	**Notes 6 (indices)** **Notes 13(+/- nos)**	**INTER ch 5** Green book **Notes 47** **INTER ch 6** Sheet Add –ve indices **Notes 48 (st form)**	**Test 66**	
ALGEBRA	**Revision:** Simplifying Indices, Linear equations: Formulae- construction, substitution equations Changing subject Inequalities	**Notes 12(basic)** **Notes 13 (+/- nos)** **Notes 14(=n)** **Notes 19 (=n 2)**	**INTER ch 12** **INTER ch 13** **INTER ch 14** Green book chapt 2, 7 ? **INTER ch 18** (18.1 – 18.4) Book 4 B chapt 6 ? **Notes 68 (inequalities)**		
SIMULTANEOUS EQUATIONS SUBSTUTION SEQUENCES	Simultaneous equations rev Harder Problems Harder substitution Change of subject Symbols and words Sequences –defining terms harder Finding terms nth term not quad	**Notes50*(sim=n)** **Notes 48 (change** **Notes 51* (quad=))**	**INTER ch 17** Green book chapt 15 **INTER ch 15** Green book chapt 16	**Test 64** **(sim =n)**	

SCHEME OF WORK – MATHEMATICS. **L/U 5th GCSE Sets 2,3** **sheet 6**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 5 STATISTICS PRESENTATION AVERAGES	Questionnaires, Sampling - random Pie charts, bar chart Stem and leaf diagrams Construction and use Averages mean mode Median continuos data modal group mean median freq polygons	**Notes 10 (averages)**	**INTER ch 34** Green book chapt 23 **INTER ch 35** **INTER ch 36** **INTER ch 37**		
SCATTER GRAPHS	Plotting Lines of best fit Correlation		**INTER ch 38** Sheet POSTER		
CUMULATIVE FREQ CURVES BOX and WHISKER PLOTS	Tables -> curves Median Interquartile range Comparisons Graphical representation of Q1, Q2, and Q3 –symmetry		**INTER ch 39** Green Book **Holiday Work sheet**	**Test 51** **STATISTICS PROJECT**	
	Time series, moving averages		**INTER ch 37**		

SCHEME OF WORK – MATHEMATICS. **L/U 5th GCSE Sets 2,3 sheet 7**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 6 GEOMETRY	Rev // lines, triangles Quadrilaterals properties Polygons names regular Ext, int angles Tessellations	Notes 1 (angles) Notes 7(// lines) Notes 15 (triangles, quads) Notes 16 (polygons)	**INTER CPL** ch 20, 21 Green book chapt 3 Notes 56 **INTER CPL** ch 23, 24 Green book chapt 9 Posters		3 lessons 3 lessons
TRANSFORMATIONS	Symmetry line, rotational Reflections Rotations Translations Congruency Vectors and translations Combined transformations Enlargements def centre Scale ratio of lengths +ve - ve fractional	Notes 31 (trans)	**INTER CPL ch 22** **INTER CPL ch 28** Green book chapt 4 Book 4 B chapt 11 Green book chapt 27 (26) Green book chapt 25 Book 4 B chapt 15 Notes 32	Test	
SIMILARITY CONGRUENCY	Triangles, ratios other shapes		**INTER CPL ch 30** **INTER CPL ch 22**		

SCHEME OF WORK – MATHEMATICS. **L/U 5th GCSE Sets 2,3 sheet 9**

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME

BLOCK 8
 	
STRAIGHT LINES
	Rev sketching // axes, thro' origin
	y = mx + c
	Gradient, y intercept
	Plotting points drawing lines
	Length, gradients
	Graphical solution
	Practical uses
		Graph book notes	**INTER CPL 16**
			Green book chapt 17
			Book 4 B chapt 1
			
			INTER CPL 17		

INEQUALITIES	Solving inequalities Shading 2 variables	Notes 7(=ns)	**INTER CPL 18** Green book chapt 18		
CURVED GRAPHS	Tables, plotting, reading Common curves Sketching Problems Solving quadratics - simple	Graph book notes	**INTER CPL 19** Green books chapt 21 Book 4 B chapt 19		
TRAVEL GRAPHS	Distant – time Displacement – time (Velocity – time) curves		**INTER CPL 11** Green book chapt 22 Book 4 B chapt 3		

CONTENT	KEY CONCEPTS	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT TIME	TIME
BLOCK 9 **HARDER GEOMETRY**	Rev angle properties Polygons Tessellations Simple constructions	Notes 1 (angles) Notes 9 (//lines) Notes 29 (circles)	INTER ch 20 INTER ch 21 INTER ch 23	Within papers	
Similar figures congruancy	Similar triangles Congruency Similar figures Ratio of areas/ vols	Notes 25 (ratio)	**INTER ch 30** Blue book chapt 29		
SINE RULE COSINE RULE AREA OF TRIANGLE	Formula Problems Formula Problems Combined Formula Combined problems with bearings	Right angled trig	**HIGHER ch 34** Blue book chapt 32 Not to be done in depth		
FUNCTIONS TRANSFORMATION OF GRAPHS GRAPHS OF TRIG Not set 3 for set 2 Some or none dep on groups	Function notation Common curves - transformatoions Sin, cos graphs draw, compare transform tan graph draw transform	Graphs translation	**HIGHER ch 22** Blue book chapt 35 **HIGHER ch 23** Blanks of curves **HIGHER ch 34** **OMNIGRAPH**		

<u>BLOCK 10</u> PROBABLITY	Rev def simple Expectation Addition Possibility spaces Probability trees	Notes 21 (simple) Notes 22* (prob)	**INTER ch 40** Green book chapt 28 (27) Book 5B chapt 13		

CONTENT	KEY CONCEPT	PRIOR KNOWLEDGE	RESOURCES	ASSESSMENT	TIME
BLOCK 7 FURTHER ALGEBRA	Collecting like terms Brackets Factorising common quadratic Solving quadratics Formula	Notes 12 (basic alg) Notes 13 (directed nos.) Notes 19 (equations) Notes 45 (products) Notes 46 (factorisation)	**INTER ch 19** Green book chapt 20 Book 4 B chapt 17 Notes 51 (quad equations) **HIGHER ch 19**		Variable – depends on amount of time needed for revision.
TRIAL and IMPROVEMENT	Systematic value trial Answer to required no. of dp	Egs from computer from U4ths	**INTER ch 19**		
ALGEBRAIC FRACTIONS	Use of rules of fractions with very simple algebraic terms Use of factors (set 2)		**INTER ch 19**		