



Mathematics Department – Fourth Form Scheme of Work 2016/17

Textbook

Edexcel Higher Linear Book

WKS = Worksheet

Unit 1: Numeracy and Algebra

Number Work

BIDMAS

Fractions

Decimals

Percentages

Simplifying expressions

Solving Equations

Linear sequences and n^{th} term

Unit 2: Percentages

2E Percentage Increase and Decrease

2F One quantity as a percentage of another and Percentage change

5I Compound Interest, repeated percentage change and Simple Interest

Unit 3: Ratio, Proportion, Density and Pressure

5A Ratios as fractions

5B Ratios including Map scales

5C Ratio calculations

5A,5B,5C, more difficult questions only as this is revision

5G Speed

5H Density and Pressure

Unit 4: Algebra

8C Factorising

15A Solving linear equations

15B Solving equations with brackets

15C Solving equations with the variable on both sides

15K Trial and Improvement

24F Iteration

Test E on Units 1- 4

Unit 5: Angles and Circle Theorems

6A,6B,6F,6G Recap of basic angle facts

6C,6D,6D Angles in polygons

20B Circle Theorems

20C Cyclic Quadrilaterals

20D Tangents and Chords

20F Alternate Segment Theorem

Review Questions and use of mymaths

Proof of all the Theorems to be known

Unit 6: Constructions

7H Constructions

7I Loci

7J Loci Problems

Unit 7: Indices

14A Powers/Indices

16C Negative Powers

14B Multiplying and Dividing numbers in index form

16D,16E Fractional Powers

Unit 8: Algebra

8M Change the subject(re-cap and extension)

Unit 9: Pythagoras and Trigonometry

11A,11B,11C, 11D Selection of questions to re-cap Pythagoras

11E 3-D Pythagoras

Trigonometry Introduction labelling sides, SOHCAHTOA, use of θ

11H,11I,11J Trigonometry Finding a side

Trigonometry Finding an angle

Worksheet for practice

11K Mixed questions

11L,11M,11N,11P Problem solving using Trigonometry

Winter Assessment - 2 x 45 minute tests. 1 non-calculator, 1 calculator

Unit 10: Similar Triangles

- 12A Similar Shapes and Triangles
- 12B, 12C More difficult Similar Triangles
- 12D, 12E Similar Area and Volume Problems

Unit 11: Reverse Percentages

- Recap of multiplier method
- 5J Reverse Percentages

Unit 12: Algebra

- 15D,15F Simultaneous Equations by the elimination method only
- 15G Solving problems with Simultaneous equations

Unit 13: Quadratic Expressions

- 8E Expanding 2 brackets to give a quadratic expression
- 8F,8G,8H Further expanding brackets
- 8J Factorising Quadratics
- 8K Difference of 2 squares
- 8L More factorising Quadratics
- 17B Q1&2 only Basics of solving quadratic equations by factorising

Test F on Units 10 – 13

Unit 14: Standard Form

- 14D Standard Form Q6-12 only
- Standard Form Worksheet for more practice
- Worksheet on Adding and Subtracting in Standard Form including the use of a calculator
- 14E Multiplying and Dividing in Standard Form including use of calculator

Unit 15: Transformations

- 7A Rules for Congruence;- SSS, SAS, ASA, RHS
- 7C Translations (couple of questions as a re-cap)
- 7D Reflections
- 7E Rotations
- 7F Enlargements including fractional and negative scale factors
- 7G Combined Transformations

Unit 16: Linear Inequalities

15H Solving Inequalities

15I Inequalities on a Number Line(extend to showing integer values)

15J Graphical Inequalities

Unit 17: Probability

13A-13D Selection of Questions as a recap of Probability

13E Using Venn Diagrams with Probability

19A-19D Selection Questions as recap of Tree diagrams

19E Conditional Probability using Tree Diagrams

WKS Conditional Probability using Venn Diagrams

Test G on Units 14 – 17

Unit 18: Functions

24C Recap of Function notation

24D Inverse Functions

24E Composite Functions

Unit 19: Graphs

17A Quadratic Graphs

WKS More Quadratic Graphs

17L Solving quadratic inequalities including use of set notation

23A Travel Graphs (couple of questions as re-cap only)

23B Real-Life Graphs

23C Velocity-Time graphs and calculating distances

23D Velocity-Time graphs and calculating accelerations

Include the use of the 3 equations of motion given on the formula sheet in Ex23C and Ex23D

23E Area below graphs

23F Finding and Interpreting Gradients of Graphs

Test G on Units 18 – 19

Summer Assessment – 2 x 1.5hr papers. 1 non-calculator, 1 calculator

Unit 20: Statistics and Numeracy Work

Mean, Mode, Median and Range

Scatter graphs and Correlation

Pie/Bar Charts and Line Graphs

BIDMAS, Fractions, Percentages and Significant Figures