Royal Mathematical School
Little Erasmus SoW
2018-2019

Mod 1

RMS LE	***Powers and roots (Chapter 3)***
Work with simple powers and roots using mental methods	
Use a calculator to compute harder powers and roots	
Work with fractional and negative powers, and reciprocals	
Use the laws of indices to simplify numerical expressions	
Write large and small numbers in standard form	
Calculate using standard form	
Decompose integers into prime numbers	
Calculate Highest Common Factors and Lowest Common Multiples	

Mod 2

RMS LE	***Fractions, decimals and rounding (Chapter 1)***
Find equivalent fractions	
Add and subtract fractions and decimals	
Change fractions to decimals and vice versa	
Multiply and divide fractions	
Order a list of fractions and decimals	
Change recurring fractions into exact fractions	
Use your calculator efficiently with fractions and decimals	

Mod 3

RMS LE	***Working with algebra (Chapter 4)***
Substitute into formulae and expressions	
Work with indices	
Expand brackets and collect like terms	
Factorise linear algebraic expressions	
Factorise quadratics with unitary coefficent	
Factorise quadratics with non-unitary coefficient	
Generate formulae	
Change the subject of a formulae	
Change recurring fractions into exact fractions	

Mod 4

RMS LE	***Algebraic equations and inequalities (Chapters 5 & 8)***
Identify expressions, equations and identities	
Solve simple equations	
Solve harder linear equations	
Solve linear equations involving brackets and fractions	
Solve simple linear inequalities in one variable	
Represent solution sets on a number line	
Represent solution sets using set notation	

Mod 5

RMS LE	***Straight line graphs (Chapter 6)***
Use coordinates in all four quadrants	
Plot graphs of linear functions defined implicitly or explicitly	
Use gradient and intercept to sketch linear graphs	
Recognise the equation of a linear graph by inspecting its gradient and intercept	
Calculate the midpoint of a line segment	
Use properties of parallel and perpendicular lines	
Solve geometric problem using properties of straight lines	

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Mod 6

RMS LE	*Inequalities (Chapter 8)*
Solve linear inequalities in two variables	
Solve quadratic inequalities	
*Use inequalities to solve linear programming problems**	

Mod 7

RMS LE	*Simultaneous Equations (Chapter 7)*
Solve simultaneous equations by inspection	
Solve harder simultaneous equations by algebraic elimination	
Solve simultaneous equations by graphical methods	
*Solve simultaneous equations by substitution**	
Solve problems using simultaneous equations	

Mod 8

RMS LE	*Pythagoras and Trigonometry Chapters 15 and 16)*
Use Pythagoras' theorem to test whether a triangle is right-angled	
Use Pythagoras' theorem to find an unknown side in a right angled triangle	
Use Pythagoras' theorem to find the distance between two points on a grid	
Use Pythagoras' theorem to find simple three-dimensional problems	
Use sine, cosine and tangent to find unknown lengths in right-angled triangles	
Use inverse functions to find unknown angles in right-angled triangles	
Solve multi-stage problems using sine, cosineand tangent	
Use angle of elevation and angle of depression	

Mod 9

RMS LE	*Travel and other graphs (Chapter 10)*
Use straight line graphs to model real-life situations	
Draw graphs to represent rates of change, such as containers being filled with water	
Solve problems using travel graphs	

Mod 10

RMS LE	*Degrees of accuracy Chapter 1*
Round to any degree of accuracy	
Round using significant figures	
Calculate upper and lower bounds	
Use upper and lower bounds in calculations	

Mod 11

RMS LE	*Working with shape and space (Chapter 11)*
Know and apply basic angle properties including vertically opposite	
Use corresponding and alternate angles	
Work with angles in triangles and quadrilaterals	
Calculate interior and exterior angles of polygons	
Find areas of triangles and quadrilaterals	
Calculate surface areas and volumes of solids	
Convert between systems of units	

Mod 12

RMS LE	*Circles, cylinders, cones and spheres (Chapter 12)*
Calculate the circumference of a circle	
Calculate area of sectors	
Use circle formulae in reverse	
Find the surface area and volume of a cylinder	
Find surface area and volume of cones and spheres	
Obtain exact expressions for results in terms of pi	

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Mod 13

RMS LE	***Circle Theorems (Chapter 17)***
Use correct vocabulary associated with circles	
Use tangent properties to solve problems	
Prove and use various theorems about angle properties inside a circle	
Prove and use the alternate segment (intersecting tangent and chord) theorem	
Prove and use the intersecting chords theorem	