

Unit	Detailed topic
Geometry and Shapes	Basic angle facts (eg line 180, point 360) and with triangles including algebra.
	Angles in parallel lines including algebra.
	Angles in Quadrilaterals including special rules for Trapezium, Kite, Parallelogram and Rhombus.
	Interior angles of irregular polygons.
	Interior and exterior angles of regular polygons.
Algebraic Manipulation	Adding and Subtracting Algebraic Fractions, Multiplying and Dividing Algebraic Fractions
	Completing the Square including $a > 1$ and $a < 0$. (ax^2+bx+c).
	Algebraic Proof including worded problems that lead to simplifying Quadratic Equations.
Perimeter, Area and Volume	Perimeter and Area of Compound Shapes (made of triangles and rectangles)
	Area of Parallelogram and Trapezium
	Area of Circle and Circumference of a Circle.
	Area and perimeter of a Sector including leaving answer in terms of pi, semi circles and quarter circles.
	Volume of a prism, including L shapes, cylinders and Trapezium.
	Surface Area of Cylinder
	Surface Area and Volume of Sphere/parts of a Sphere
	Surface Area and Volume of a Cone.
	Volume of a frustrum
	Complex Volume and Surface area problems
Quadratic Equations, Inequalities and Graphs	Solve Quadratic Equations by Factorising, formula and completing the square
	Form and Solve Quadratic Equations.
	Solve Algebraic Fractions
	Solve Quadratic Inequalities and display solutions on a number line.
	Drawing quadratic curves and solving by drawing a suitable straight line. $F(x) = x^2 + 3x + 10$ Draw a suitable straight line
Construction and Bearings	Constructions of Triangles – SSS, ASA, SAS, RHS
	Construct Hexagons and Rhombus
	Construct Perpendicular Bisector, through a point, from a point
	Construct Angle Bisector
	Scale Drawings, understanding using scale factor to scale up including problem solving.

Set Language and Venn Diagrams	Understand the definition of a set (2 things that make a set including set notation. \cup , \cap and \in and \notin and empty set \emptyset , A' (Not A)
	Construct Venn Diagrams and find probabilities.
	Problem Solving with Venn Diagrams, worded and algebraic problems and understanding $n(A)$ is number of elements.
Transformations	Carry out translations and describe translations using column vectors.
	Carry out Reflections and describe reflections using line of reflection.
	Carry out rotations and describe rotations using centre of rotations. (clockwise and anti clockwise).
	Carry out positive enlargements and describe positive enlargements using centre of enlargement.
	Carry out fractional enlargements and describe fractional enlargements using centre of enlargement.
	Carry out negative enlargements and describe fractional enlargements using centre of enlargement.
	Understand a negative enlargement is an enlargement combined with a rotation.
	Carry out more than one transformation but describe it as one transformation. (Double reflections make a rotation).
Simultaneous Equations	Solve Linear Simultaneous Equations by elimination (make 2 nd variable the same). Including fractional and negative solutions.
	Form and Solve Simultaneous Equations
	Solve Quadratic Simultaneous equations by setting them equal to each other. (Both equations are $y =$)
	Solve Quadratic Simultaneous equations by substitution
	Solve complex Quadratic simultaneous Equations including intersection points and finding midpoint from solutions.
Degrees of Accuracy	Error intervals, finding upper and lower bounds using number lines.
	Finding the upper and lower bound from equations involving the 4 operations including worded problems.
	Solving complex bounds problems where you need to find the upper and lower bound (considering bounds) and round your answer with reasoning.
Similar Shapes	Understand the definition of and differences for Similarity and Congruence. Identify when shapes are similar and when they are congruent. (No need to prove)
	Finding the Scale Factor and missing side lengths for similar shapes including using parallel sides to identify shapes are similar and shapes within shapes.
	Finding the scale factor for areas and volumes and missing values of surface and volume. (LAV tables).
	Solving similar shape problems with LAV (difference in volume or volumes added together.

Unit	Detailed topic
Surds	Simplifying surds and working backwards from simplified surds.
	4 operations with surds.
	Expanding brackets with surds
	Rationalising surds with simple and complex denominators.
	Problem solving with surds including converting surds into index form.
Circle Properties	Show students the 2 non circle theorems. (Radii are constant in length, helps create isosceles triangles, angles in a quadrilateral add up to 360). Show students the first 5 circle theorems. (i) A Radius meets a tangent at 90 degrees. (ii) Angle subtended at the circumference by a diameter is a right angle. (iii) Angle at the centre is twice angle at circumference. (iv) Angles in the same segment are equal. (v) Opposite angles in a cyclic quadrilateral is 180°.
	Practice questions with single circle theorems.
	Alternate segment theorem
	Exam Questions practicing the first 6 theorems
	Intersecting chord and intersecting secant theorems.
	Exam Questions with all 8 theorems
Real Life Graphs	Interpreting distance, time graphs including finding the gradient and interpreting the gradient. Understanding fixed costs and how to find these graphically.
	Finding the area under a curve on speed, time graph and understanding this represents distance.
	Exam practice of questions in real life contexts.
Compound Measures	Convert between metric units involving area and volume
	Working with Speed, distance and time (triangle)
	Working with Density, mass, volume
	Working with Pressure, force and area
	Complex problems involving mixing of liquids/2 journeys. (Set up table)
	Exam questions involving compound measures.
Regions	Drawing regions – $x = a$, $y = a$ and $y = mx + c$
	Describing regions given the lines
	Exam Question review on regions