**Week 1 – Algebraic Expressions**

By the end of the unit, students should:

* Multiply and divide integer powers.
* Expand a single term over brackets and collect like terms.
* Expand the product of two or three expressions.
* Factorise linear, quadratic and simple cubic expressions.
* Know and use the laws of indices.
* Simplify and use the rules of surds.
* Rationalise denominators.

**Weeks 1 & 2 - Quadratics**

By the end of the unit, students should:

* Solve quadratic equations by factorization, formula and completing the square.
* Read and use f(x) notation when working with functions.
* Sketch the graph and find the turning point of a function.
* Find and interpret the discriminant of a quadratic expression.

**Weeks 2 & 3 – Equations and Inequalities**

By the end of the unit, students should:

* Solve linear simultaneous equations using elimination or substitution.
* Solve simultaneous equations; one linear and one quadratic.
* Interpret algebraic solutions of equations graphically.
* Solve linear inequalities.
* Solve quadratic inequalities.
* Interpret inequalities graphically.
* Represent linear and quadratic inequalities graphically.

**Weeks 3 & 4 – Graphs and Transformations**

By the end of the unit, students should:

* Sketch cubic graphs
* Sketch reciprocal graphs
* Use intersection points of graphs to solve equations.
* Translate graphs.
* Stretch graphs.
* Transform graphs of unfamiliar functions.

**Week 5 – Straight Line Graphs**

By the end of the unit, students should:

* Calculate the gradient of a line joining a pair of points.
* Understand the link between the equation of a line, and its gradient and intercept.
* Find the equation of a line given i) the gradient and one point ii) two points on the line.
* Know and use the rules for parallel and perpendicular gradients.
* Find the point of intersection for a pair of straight lines.
* Solve length and area problems on coordinate grids.

**Week 6 – Trigonometric Ratios**

By the end of the unit, students should:

* Use the cosine rule to find a missing side or angle.
* Use the sine rule to find a missing side or angle.
* Find the area of a triangle using an appropriate formula.
* Solve problems involving triangles.
* Sketch the graphs of the sine, cosine and tangent functions.
* Sketch simple transformations of the sine, cosine and tangent functions.

**Week 7 – Radians**

By the end of the unit, students should:

* Convert between radians and degrees.
* Know exact values of angles measured in radians.
* Find an arc length using radians.

Find areas of sectors and segments using radians.