

## Year 11 Autumn

### Foundation

### Higher

#### Similarity and congruence of 2D

- Conditions for congruence (SSS, SAS, ASA, RHS)
- Congruence and angle problems
- Similar triangles and other shapes
- Scale factor of enlargement and similar shapes
- Effect of enlargement on perimeter of shapes
- Finding missing sides of similar shapes
- Similar shapes and problem solving

#### Vector and geometric proof

- Vector notations
- Parallel vectors
- Vector representation
- Vector arithmetic
- Magnitude of a vector
- Resultant vectors
- Solve geometric problems in 2D
- Geometric proof and vectors of parallel and collinear vectors

#### Vectors

- Column vectors
- Vector representation
- Parallel vectors
- Sum of vectors
- Difference of two vectors and
- Scalar multiplication

#### Reciprocal and exponential graphs

- Recognise, sketch reciprocal functions
- Conditions for which a function is undefined
- Recognise and sketch exponential graphs
- Exponential growth and decay
- Reflection of curves
- Translation of curves
- Stretching curves
- Estimate area under a curve
- Gradient of a non-linear line
- Estimating speed, velocity and acceleration of curves
- Gradient of linear and non-linear in financial context
- Interpret area under a curve
- Interpreting rate of change

#### Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations

- Equations, identities, expressions and formula

#### Direct and inverse proportions

- Recognise and interpret graphs of direct and inverse proportions

- Change the subject of formula
- Inverse proportions graphically
- Equation of a line segment
- Graphs of cubic functions
- Graphs of reciprocal graphs
- Gradient from  $ax + by = c$
- Simultaneous equation
- Simultaneous equations graphically
- Form and solve simultaneous equations

- Identify direct and inverse functions from tables
- Solve direct proportion problems
- Solve inverse proportion questions
- Combination of direct and inverse proportion problems

**Revision for GCSE exams**