Y11 Autumn

A – B1 - Expanding and factorising	A – B2 - Gradients & lines	A – B3 - Working in different dimensions	A – B4 - Multiplicative reasoning	A – B5 - Manipulating expressions
- Expand and factorise single brackets - Expand and simplify two single brackets - Expand double brackets - Recap simplifying, solving equations and laws of indices - **Factorise quadratics a = 0** - **Expand three brackets (H)** - **Factorise quadratics a > 1 (H)** - **Complete the square (H)** - **Quadratic formula (H)**	- Equations of lines parallel to the axis - Plot and use y = mx + c - Identify parallel lines - Equation of line from graph - Find equation of a line from gradient and point or 2 points - Solve simultaneous equations graphically - **Equations of perpendicular lines (H)** - **Equation of tangent to circle (H)** - **Equation of tangent to curve (H)** - **Solve simultaneous equations graphically by rearranging (H)**	- Perimeter of shapes - Area of shapes including compound - Area and circumference of circles - Arcs and sectors of circles - Pythagoras recap - 3D shape properties - Surface area of 3D shapes - Volume of 3D shapes - **3D Pythagoras and trigonometry (H)** - **Spheres, cones, pyramids (H)** - **Algebraic volumes (H)**	- Direct proportion (recipes, currency, best buy) - Speed, distance, time - Density - Pressure - Ratio worded problems - Similar shapes - Inverse proportion worded - **Similar area / volume (H)** - **Direct proportion graphs (inverse H)** - **Direct and inverse proportion equations (H)**	- Use function machines (F only) - Substitute into expressions and formulae - Recap four operations with fractions - Solve equations (including those with fractions) - Form and solve equations - **Simplify algebraic fractions (H)** - **Four operations with algebraic fractions (H)** - **Algebraic proof (H)**

Y11 Spring

Sp – B1 – Vectors	Sp – B2 - Functions HIGHER ONLY ALL	Sp – B3 - Geometric reasoning	Sp – B4 - Algebraic reasoning	Sp – B5 - Transforming and constructing	Sp – B6 - Representing
- Recap properties of 2D shapes including classifying quadrilaterals - Calculate with column vectors - Draw column vectors - **Vector journeys in shapes (H)** - **Vector geometric arguments and proof (H)**	- **Use function machines (H)** - **Use function notation (H)** - **Composite and inverse functions (H)** - **Graphs of quadratic functions (H)** - **Solve quadratic inequalities (H)**	- Angles rules - Angles in parallel lines - Angles problems - Angles in polygons - Pythagoras problems - Right angled trigonometry - **Harder trigonometry: 3D, Sine, Cosine, area of triangle (H)** - **Review of circle theorems (H)** - **Circle theorems - angle between radius and chord, angle between radius and tangent, two tangents from a point, alternate segment theorem (H)** **Geometric proof (H)**	- Simplify expressions including those with brackets - Continue sequences including with pictures - nth term of linear sequence - Other sequences (e.g. geometric / Fibonacci) - Simultaneous equations - **nth term quadratic sequence (H)** - **Simultaneous equations linear (linear / non-linear) (H)** - **Algebraic proof (H)**	- Transformations – reflections, rotations, translation and enlargement - Constructions - Loci - **Negative enlargement (H)** - **Invariant points (H)** - **Trigonometric graphs (H)** - **Transform graphs (H)**	- Averages including with tables - Interpret pictograms, line graphs, bar charts. - Interpret and draw pie charts - Scatter graphs - Probability number line - Probability from tables, frequency trees, Venn diagrams and tree diagrams - Probability expectation - **Conditional probability (H)** - **Algebraic probability (H)** - **Box plots and cumulative frequency (H)** - **Histograms (H)**

Y11 Summer - Revision