

Year 9 Mathematics Learning Journey (H)

Number – Can I apply my knowledge of number to higher order applications?

Algebra – Am I able to extend my knowledge of Algebra into more complex operations?

(Further development of the curriculum from Year 8, summer 1)

- Listing and finding the number of ways to perform a task; prime factors, HCF & LCM, indices, powers and surds including negative & fractional; writing and calculating numbers in standard form.
- Simplifying expressions with indices, forming and solving equations; finding the n th term of linear and quadratic sequences, finding terms in a Fibonacci sequence; using the difference of two squares and factorising quadratics

Start of the Year

Graphs – Am I able to use graphs in both abstract and contextual presentations?

(Further development of curriculum from year 8 spring 1 building on real life graphs)

- Finding and using the gradient and intercept of linear graphs; drawing and interpreting distance-time & velocity time graphs; finding equations of parallel & perpendicular lines; solving quadratics graphically and applying in real life situations; drawing graphs of cubic and reciprocal functions; drawing the graph of a circle.

Interpreting and representing data – Am I able to present & interpret data using various charts and diagrams?

Fractions, ratio & percentages – Am I able to apply my knowledge of ratio and proportion, to solving related problems in various contexts? *(Further development of curriculum from year 8 autumn, spring and summer).*

- Plotting and interpreting, stem & leaf diagrams, frequency polygons, pie charts, time series & scatter graphs; calculating averages from grouped frequency tables.
- Applying the four operations to fractions and mixed numbers, solving problems in various contexts on ratio and proportion; converting a recurring decimal to a fraction

Angles & trigonometry – Am I able to apply the properties of right-angled triangles to problem solving? *(Further development of the curriculum from Year 8 spring 2, lines and angles)*

- Calculating the sum of interior angles in a polygon; using the sum of interior angles in polygons to solve problems including the use of Algebra; applying Pythagoras theorem and the trig ratios to solve problems in various in various contexts.

Area and volume – Am I able to solve problems on the volume and area of various 2D & 3D shapes? *(Further development of the curriculum from Year 8 Autumn 1)*

- Calculating the area and perimeter of compound shapes; using the formula for the area of a trapezium; converting between metric units; finding error intervals, upper and lower bounds; area and circumference of a circle including sectors and arc lengths; calculating the volume & surface area of various 3D shapes.

Transformation and construction, loci and bearing – Am I able to change the size and position of shapes according to a given rule?. *(Further development of the curriculum from Year 8 Autumn 1 & Spring 2)*

- Draw plans and elevations of solids; translate, Enlarge, Reflect and Rotate shapes; accurate construction of shapes using appropriate equipment; scale drawings and bearings; constructing angles and shapes using appropriate equipment; using loci to solve problems.