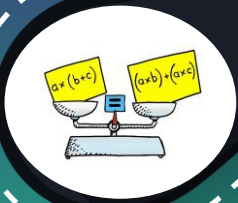# Year 10 & 11 (H)

# KS4 Maths Curriculum

## Equations & Inequalities

What are compound inequalities and how can we show them? How do we solve quadratic equations by factorising? Can I apply the quadratic formula to solve equations? How do you sketch a graph and identify its turning point?

## Similarity and Congruency

How can we determine if two shapes are mathematically similar? What are the properties needed to have congruence between shapes?

## Further Trigonometry

How do we use sine, cosine and tangent ratios to find missing sides? Can I rearrange the cosine rule to find missing angles? How would we find a missing length in a 3D shape?

## Equations & Graphs

Can I factorise and solve a cubic expression? Can I plot the graph of a cubic function? How can I estimate the solution to a quadratic or cubic equation using iterative formula?

## Circle Theorems

Can I solve problems by applying circle theorems? Can I prove circle theorems to be true?
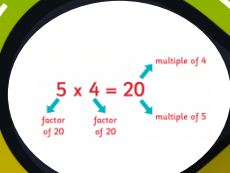
## Probability

How do we complete tree diagrams without replacement? How do you complete a Venn Diagram using algebra? What is an independent event? Can I complete Venn diagrams with 3 sets?

## Multiplicative Reasoning

Describe the difference between simple and compound interest? Can you find an original amount before repeated percentage change? Can you use proportion to form and solve equations?
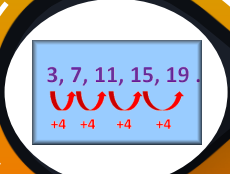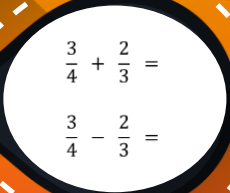
## Further Statistics

Can I draw and interpret Cumulative Frequency Graphs? How do you compare two sets of data? Why are the bars in a histogram different widths? How do we combine the means of two separate groups?

## Further Algebra

Can I change the subject of the formula where the subject appears on both sides of the initial equation? How do you convert a recurring decimal to fractions? Can I simplify algebraic fractions? Can I apply the four operations to algebraic fractions?
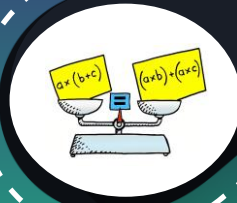
## Loci and Bearings

Can I draw loci for a path of points that follow a given rule? Can I find and use 3 figure bearings and use angles in parallel lines to find missing bearings?

# KS4 Maths Curriculum

## Vectors

What is a vector? How do I calculate the resultant of two vectors? Can I prove lines are parallel using vectors? How do I prove that three points lie on a straight line using vectors?

## Surds

Can I use the four operations to simplify surds? Can I expand single and double brackets involving surds? What does rationalising a denominator mean? Can I rationalise denominators using a conjugate?
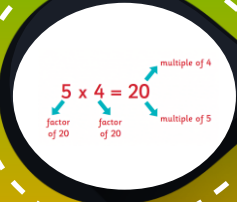
## Proportion & Graphs

What is meant by the term 'exponential growth'? Can I sketch, plot and recognise exponential functions? Can I calculate the gradient of a tangent on a curve? What does the area under a curve represent? How do I estimate the area under a non-linear graph?

## Functions & Algebraic Proof

What is a function? Can I solve equations involving functions? How can I prove algebraic expressions are equivalent? Can I prove that an algebraic expression is a multiple of a given number for all integer values of n?

## • Coordinate Geometry

What is meant by the term 'gradient'? How do I find the gradient of a radius of a circle when I know the centre and a point on the circumference? Can I find the equation of the tangent to a circle at a given point?