

Year 11

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn	<p>Equations and inequalities</p> <p>Equations and graphs</p>	<p>Can you solve a quadratic equation by completing the square?</p> <p>Can you solve simultaneous equations?</p> <p>Can you use graphs to solve equations?</p> <p>Can you sketch quadratic and cubic graphs?</p> <p>Do you know how to approximate a solution using iteration?</p> <p>Can you represent inequalities graphically?</p>	<ul style="list-style-type: none"> ● Solve quadratics by completing the square ● Solving linear simultaneous equations ● Solving linear and quadratic simultaneous equations ● Solving linear inequalities ● Solving simultaneous equations graphically ● Make approximations to quadratic equations using graphs ● Sketch graphs by considering shapes, roots and y intercepts ● Identify maximum/minimum points by completing the square ● Expand triple brackets ● Understand iteration notation ● Use iteration to make approximations ● Solve quadratic and cubic equations using an iterative process ● Know the 'change of sign' means that there is a root ● Representing inequalities graphically and solve ● Represent and interpret linear inequalities ● Solve quadratic inequalities 	<p>How understanding is assessed</p> <ul style="list-style-type: none"> ● Through applying the theory to a range of questions and increasingly more complex situations. ● Discussion in lessons, sample problems. ● Homework and tests involving past paper questions. <p>Skills</p> <ul style="list-style-type: none"> ● In addition to the understanding of the concepts significant algebraic skills are required. <p>Assessment Point information</p> <ul style="list-style-type: none"> ● Timed questions using past GCSE papers relevant to topics studied.

	<p>Algebra 3</p> <p>Can you work confidently with algebraic fractions?</p> <p>Can you manipulate surds and rationalise denominators?</p> <p>Vectors</p> <p>How are vectors used?</p> <p>Can you use vectors to solve geometric problems?</p> <p>Algebra 4</p> <p>What do we mean by a function?</p> <p>How can algebra be used to prove a result?</p> <p>Sequences</p> <p>Can you generate sequences? Can you find the nth term?</p>	<ul style="list-style-type: none"> ● Add, subtract, multiple and divide algebraic fractions ● Simplify algebraic fractions ● Solve equations involving algebraic fractions ● Rationalise denominators with 2 terms ● Vector notation, +, -, x and ÷ ● Graphical representation ● Modulus ● Vector arithmetic ● Application to simple geometric proofs ● Geometric problem solving ● Function notation ● Composite functions ● Inverse functions ● Prove a result using algebra ● The difference between an equation and an identity. ● Linear sequences (arithmetic) ● Non-linear sequences ● Find the nth term of a quadratic sequence 	
Spring	<p>Further statistics</p> <p>Do you know how and why sampling is used?</p> <p>Can you draw, interpret and compare cumulative frequency graphs, box plots and histograms</p>	<ul style="list-style-type: none"> ● Simple random sample ● Pearson capture-recapture method ● Make predictions based on sampling ● Calculate the median and quartiles from a list of data ● Draw and interpret cumulative frequency tables and diagrams 	

	<p>Trigonometry graphs, ratios & equations</p> <p>Transformations and construction revision</p> <p>Graphs transformations</p> <p>Revision</p>	<p>Can you sketch and recognise the graphs of sine, cosine and tangent functions?</p> <p>Can you solve simple trig equations? Do you know exact trig ratios?</p> <p>Can you remember 2D transformations? Can you remember constructions of lines and simple shapes?</p> <p>Can you sketch the transformations of graphs?</p>	<ul style="list-style-type: none"> ● Calculate the median, quartiles and interquartile range from a cumulative frequency diagram ● Draw, interpret and compare box plots ● Find quartiles and interquartile range from stem and leaf diagrams ● Draw and interpret histograms ● Calculate frequency density ● Use histograms to estimate the median ● Graphs of $y = \sin x$, $y = \cos x$ and $y = \tan x$ Must be able to draw and know the key points ● Know the exact values of $\sin \theta$ and $\cos \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$ and the exact values of $\tan \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$. ● 3D drawings, plans and elevations ● 2D transformations ● Bearings and Scale drawings ● Constructions ● Loci ● Graphs translations $f(x)+a$ $f(x+a)$ ● Graph reflections $f(-x)$ $-f(x)$ ● All transformations of trig curves 	<p>How understanding is assessed</p> <ul style="list-style-type: none"> ● Through applying the theory to a range of questions and increasingly more complex situations. ● Discussion in lessons, sample problems. ● Homework and tests involving past paper questions. <p>Skills</p> <ul style="list-style-type: none"> ● In addition to the understanding of the concepts significant algebraic skills are required. <p>Assessment Point information</p> <ul style="list-style-type: none"> ● Timed questions using past GCSE papers relevant to topics studied.
<p>Summer</p>	<p>Revision and practising past papers</p>			