

## What are the aims and intentions of this curriculum?

The aim of the curriculum is to consolidate and extend students' knowledge on what they did in KS3. It is the aim of the curriculum to develop students' problem solving and reasoning skills in the areas of: Numbers, algebra, ratio, proportion and rate of change, geometry, measurement, probability and statistics. Students will ultimately be ready to sit the Higher GCSE examination at the end of this program of study.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	<i>Vectors and geometric proof</i>	<b>Keywords and Concepts:</b> vector, magnitude, resultant, parallel, collinear, geometric proof	In this lesson students will learn about vector and vector notations. They will learn to work out the magnitude of a vector, perform calculations using vectors and represent the solutions graphically. Students will learn to prove that lines are parallel and that points are collinear. They will solve geometric problems in two dimensions using vector methods and apply vector methods for simple geometric proofs.	Pixi Aiming for grade 7-9 booklet Mathswatch- <a href="http://www.mathswatch.co.uk/">http://www.mathswatch.co.uk/</a> Mymaths- <a href="https://www.mymaths.co.uk/Kerboodle">https://www.mymaths.co.uk/Kerboodle</a> <a href="https://www.kerboodle.com/users/login">https://www.kerboodle.com/users/login</a> EDEXCEL GCSE past paper End of topic class test Stretch and challenge feedback sheet ( fortnightly)
Autumn 2	<i>Proportion and graphs</i>	<b>equations, direct proportion, cubic, square, inverse, gradient, exponential function, tangent, non-linear, translate, curve, reflect</b>	In this topic students will learn to write and use equations to solve problems involving direct and inverse proportion. Solve problems involving square and cubic proportionality. Students will also learn to recognize graphs of different functions. We will also look at how to calculate the gradient of a tangent at a point, estimate the area under a non-linear graph and understand the relationship between translating a graph and the change in its function notation.	Pixi Aiming for grade 7-9 booklet Mathswatch- <a href="http://www.mathswatch.co.uk/">http://www.mathswatch.co.uk/</a> Mymaths- <a href="https://www.mymaths.co.uk/Kerboodle">https://www.mymaths.co.uk/Kerboodle</a> <a href="https://www.kerboodle.com/users/login">https://www.kerboodle.com/users/login</a> EDEXCEL GCSE past paper End of topic class test Stretch and challenge feedback sheet ( fortnightly)
Spring 1	<i>Similarity and congruence</i>	<b>congruent, ratio, scale factor, similar, corresponding, length, volume, upper bound, lower bound</b>	In this topic students will explore similarity and congruence. Students will recall how to show that two triangles are congruent and prove shapes are congruent. Students will also use the ratio of corresponding sides to work out scale factors and find missing lengths on similar shapes. Use the link between linear scale factor and area scale factor to solve problems. And use the link between scale factors for length, area and volume to solve problems.	Pixi Aiming for grade 7-9 booklet Mathswatch- <a href="http://www.mathswatch.co.uk/">http://www.mathswatch.co.uk/</a> Mymaths- <a href="https://www.mymaths.co.uk/Kerboodle">https://www.mymaths.co.uk/Kerboodle</a> <a href="https://www.kerboodle.com/users/login">https://www.kerboodle.com/users/login</a> EDEXCEL GCSE past paper End of topic class test Stretch and challenge feedback sheet (

