

# Maths - Higher Tier

## Module 1

**Topic Title:** Statistics & Geometry

**Brief Summary of Content Studied:**

Understand how to take a simple random sample.

Understand how to take a stratified sample.

Draw and interpret cumulative frequency tables and diagrams.

Work out the median, quartiles and interquartile range from a cumulative frequency diagram.

Find the quartiles and the interquartile range from stem-and-leaf diagrams.

Draw and interpret box plots.

Understand frequency density.

Draw histograms.

Interpret histograms.

Compare two sets of data.

Solve problems involving angles, triangles, circles, chords and radii.

Give reasons for angle and length and calculations involving tangents.

Understand and use facts about chords and their distance from the centre of a circle, tangents at a point and from a point.

Understand, prove and use facts about: angles subtended at the centre and the circumference of circles, the angle in a semicircle being a right angle, angles subtended at the circumference of a circle and cyclic quadrilaterals.

Prove the alternate segment theorem.

Solve angle problems using circle theorems.

Find missing angles using these theorems and give reasons for answers.

Give reasons for angle sizes using mathematical language.

Find the equation of the tangent to a circle at a given point.

**Knowledge Organiser:**

[https://docs.google.com/presentation/d/1N50\\_U8Z\\_WvZKLqNqq5cGENcEqVP4NRsCNLFxXFVYZ4/edit?usp=sharing](https://docs.google.com/presentation/d/1N50_U8Z_WvZKLqNqq5cGENcEqVP4NRsCNLFxXFVYZ4/edit?usp=sharing)

## Module 2

**Topic Title:** Algebra & Geometry

**Brief Summary of Content Studied:**

Prove a result using algebra.

Understand and use vector notation.

Work out the magnitude of a vector.

Calculate using vectors and represent the solutions graphically.

Calculate the resultant of two vectors.

Solve problems using vectors.

Use the resultant of two vectors to solve vector problems.

Express points as position vectors.

Prove lines are parallel.

Prove points are collinear.

Solve geometric problems in two dimensions using vector methods.

Apply vector methods for simple geometric proofs.

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<https://docs.google.com/presentation/d/1gr-NZBAUPiJD8MYPyC1ZS-AU1z39wH-IUKkcmbGnID8/edit?usp=sharing>

**Module 3**

**Topic Title:** Revision

**Brief Summary of Content Studied:**

Based on the individual class assessments, topics are planned and taught per class in order to strengthen weaker areas. Assessments take place every 2 weeks.

**Module 4**

**Topic Title:** Revision

**Brief Summary of Content Studied:**

Based on the individual class assessments, topics are planned and taught per class in order to strengthen weaker areas. Assessments take place every 2 weeks.

**Module 5**

**Topic Title:** Revision

**Brief Summary of Content Studied:**

Based on the individual class assessments, topics are planned and taught per class in order to strengthen weaker areas. Assessments take place every 2 weeks.

**Module 6**

**Topic Title:** Revision & Exam

**Brief Summary of Content Studied:**

Based on the individual class assessments, topics are planned and taught per class in order to strengthen weaker areas. Assessments take place every 2 weeks.