



Intent: To consolidate and further develop core concepts of number, algebra, geometry, ratio and proportion, statistics and probability developed in KS3. Through interleaving and spaced practice students will increase their fluency and confidence in key mathematical processes. Students will begin to make connections between more advanced mathematical concepts in order to solve a variety of problems.

Mathematics

Year 11F

Algebra

Geometry

Ratio & Proportion

Statistics & Probability

Knowledge

(facts, information, concepts and key terminology)

Plotting quadratic graphs, approximating solutions, factorising into one and two brackets, expanding, solving linear and quadratic equations.

Definition of vectors, pictorial representations, adding and subtracting vectors, multiples of vectors.

Percentages of amounts, percentage change, exponential growth and decay, reverse percentages, financial maths.

Averages and spread, types of data, calculating probabilities.

Understanding

(ability to connect and synthesise knowledge within a context)

The difference between types of equations and how the approaches to solve them differ. Use of graphical representations to approximate solutions.

A vector is a different form of representing information. The similarities and differences between vector and coordinate geometry.

The multiplicative aspects of change. That calculations for changing values have multiple approaches.

Key differences between statistics and what they represent. Limitations of averages and what contexts suit the different types. Numerical values can be ascribed to chance.

Skills

(successful application of knowledge and understanding to a specific task)

Apply appropriate procedures to solve all types of equations when presented in standard and unfamiliar contexts.

Convert between algebraic and geometrical representations of vectors and choose the most efficient method based upon student preferences.

Efficiently solve problems using methods the learner is the most confident with. Be able to tackle questions using multiple methods. Apply mathematical processes to real-life problems.

Interpret and evaluate the use of averages in contextual problems. Identify advantages and disadvantages of their uses. Select appropriate methods to answer contextual problems relating to probabilities.

Formal Assessments

(those done by all/vast majority of the cohort)

Termly cumulative assessments covering content from start of GCSE course. Topic Assessments after each topic has been delivered.

By the end of the year students on course for at least a grade 5 will... be proficient in using procedures to answer standard questions across all areas of mathematics. Apply concepts to unfamiliar problems using problem solving skills developed over the year.

The timings and order of delivery shown are approximate, these may change on a class-by-class basis

Term 1

Term 2

Term 3

Overview	Hegarty Reference
Calculating with Percentages	83, 84, 85
	87, 88
	89, 90
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Growth and Decay	796
	800, 801
	91, 92
	94, 95
Quadratic Graphs	251
	260
Solving Quadratic Equations	223, 224
	230
	245
Statistical Measures	392, 393
	404-410
	414, 415, 416, 417, 418
	419, 420, 421
Vectors	623, 624
	625, 626
Review of Basic Probability	351-360, 361, 364
	401, 402, 368, 369
Algebra and Graphs	178, 179, 180, 183
	184, 185, 186
	217, 188
	191, 192, 193
	190, 195

Overview
Remaining lesson time will be spent on revision and exam preparation

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