Share Multi Academy Trust

Curriculum Planning Template

Subject: **Statistics**	**Year** **10**	**Ability** **All**

Half Term 6 / weeks	**Week 1-6**
Topic	Additional GCSE Practice – Further Maths Preparation
Topic overview **Pupils will learn…**	To be able to master those GCSE topics necessary to be able to tackle the Further Maths certificate.
Components	• Number: knowledge and use of numbers and number system includes fdp, ratio, proportion and order of operations • Product rule for counting • Manipulation of surds, including rationalising the denominator • Algebra: knowledge and use of basic skills in manipulative algebra including associative, commutative and distributive laws • Expanding brackets and collecting like terms • Factorising • Manipulation of rational expressions: use of operations for algebraic functions with denominators being numeric, linear or quadratic • Use and manipulation of formulae and expressions • Solution of linear and quadratic equations • Algebraic and graphical solutions of simultaneous equations in two unknowns (both linear or one linear, one quadratic) • Solution of linear and quadratic inequalities • Index laws, including fractional and negative indices • Algebraic proof • Finding nth term of a linear sequence • Finding nth term of a quadratic sequence • Use Pythagoras' Theorem to find distance between two points • Use ratio to find the coordinates of point on a line given the coordinates of other points • Knowledge of perimeter and area of rectangles, triangles, and circles and volume of solids. Knowledge of angle properties of parallel and intersecting lines,

	triangles, all special quadrilaterals and polygons. Understand and use circle theorems. • Understand and construct geometric proofs using formal arguments • Sine and cosine rule in scalene triangles • Use of Pythagoras' Theorem in 2D and 3D • Be able to apply trigonometry and Pythagoras' Theorem to 2 & 3 dimensional problems • Sketch and use the trigonometry graphs • Knowledge and use of 30, 60, 90 triangles and 45, 45, 90 triangles
What pupils should already know (prior learning components)	Students should be proficient at basic algebra, including manipulation and equation solving. Students should also be proficient at basic geometry, in particular Pythagoras and trigonometric definitions.
Transferrable knowledge (skills)	The Further Maths course will build on each of the skills in this unit of work, working from an assumed base of competence in all of them.
Key vocabulary pupil will know and learn	Factorise, expand, solve, prove, sine, cosine, tangent
Assessment activities	Regular homework is set throughout the block
Resources available	Hegarty quizzes cover all of the above
Notes **Why this topic is important…**	The Further Maths course is split between an extension of topics seen at GCSE and new topics such as calculus and matrix manipulation. It is essential that the students are able to access the harder GCSE topics which are extended as part of the course prior to having them taught. This block of work looks at the most common GCSE topics which students should be familiar with and practises them in preparation for the start of Year 11 when these will be built on.