YEAR 12 FM 2023-2024 Spring TERM 2

'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Core Pure 1: Ch 7, 9
Linear Transformations, Vectors

Medium Term Planning – Further Stats 1: Ch 6
Chi-squared

Curriculum Intent

Skills/Assessment Objective Links

Prior Knowledge

Current learning to be developed in the future

Core Pure 1: Ch 7 Linear Transformations

Skills/Assessment Objective Links

Chapter 7: Linear transformations: **Chapter 7: Linear transformations**

FM34 I can understand the properties of linear transformations and represent them using matrices			
FM35 I can perform reflections and rotations using matrices			
FM36 I can carry out enlargements and stretches using matrices			
FM37 I can find the coordinates of invariant points and the equations of invariant lines			
FM38 I can carry out successive transformationa using matrix products			
FM39 I can understand linear transformations in three dimensions			
FM40 I can use inverse matrices to reverse linear transformations			

Prior knowledge

- Matrices (Core Pure 1 Ch6)

Learning further developed in the future in:

-

Core Pure 1: Ch 9 Vectors

Skills/Assessment Objective Links

Chapter 9: Vectors: **Chapter 9: Vectors**

FM44 I can understand and use the vector and Cartesian forms of the equation of a straight line in three dimensions			
FM45 I can understand and use the vector and Cartesian forms of the equation of a plane			
FM46 I can calculate the scalar product for two 3D vectors			
FM47 I can calculate the angle between two vectors, two lines, a line and a plane, or two planes			
FM48 I can understand and use the scalar product form of the equation of a plane			
FM49 I can determine whether two lines meet and determine the point of intersection			
FM50 I can calculate the perpendicular distance between: two lines, a point and a line, or a point and a plane			

Prior knowledge

- Intersecting points (Pure Y1 Ch5)

Learning further developed in the future in:

- Vectors (Pure Y2 Ch12)

Further Stats 1: Ch 6 Chi-squared

Skills/Assessment Objective Links

Chapter 6: Chi-squared tests: Chapter 6: Chi-squared tests

S21 I can form hypotheses about how well a distribution fits as a model for an observed frequency distribution and measure goodness of fit of a model to observed date			
S22 I can understand degrees of freedom and use the chi-squared (χ^2) family of distributions			
S23 I am able to test a hypothesis			
S24 I can apply goodness-of-fit tests to discrete data			
S25 I can use contingency tables			
S26 I can apply goodness-of-fit tests to geometric distributions			

Prior knowledge

- Hypothesis Testing (Applied Y1 Ch7)
- Poisson Distribution (Further Stats 1 Ch 2)

Learning further developed in the future in:

Spiritual, moral, social, and cultural development	**SMSC:** Making choices, looking for patterns which may reflect the natural world, supporting and collaborating with each other, realisation that mathematics is an international language and making cultural links as we explore the history of mathematics. **PSHE/British Values:** Working collaboratively, being respectful during discussion and valuing contributions made by others **Skills Builder: Key skills in numeracy used in all topic areas.**
Numeracy	**Focus on key skills.**
Literacy	**Vocabulary Tier 2: Command words displayed in the classroom and italicized/bold font used in shared resources/presentations. These are a constant focus in discussion and questioning,** **Vocabulary Tier 3: Title slide in all shared resource presentations show the key vocabulary for each topic.** **Reading: Underlining command words,** **Writing: Modelling solutions** **Oracy: Think, pair, share, discussion, verbal feedback (peer to peer), questioning, student modelling**
Becoming future ready	**Personal Skills:** As a Mathematics student you will learn many skills: you will gain opportunities to listen to others supportively and to use questioning to develop your own understanding, you will learn how to cope with challenging questions and how to build up your resilience, you will get the chance to work on your own and with others. You will develop problem solving skills and you will learn how to break a problem down into smaller more manageable steps. You will learn how to collaborate with others when solving problems and you will learn how to articulate your solution to a problem. **Employability**: Mathematical skills are invaluable in the workplace. There are many transferable skills which are much valued by employers. Specific career paths for each topic are discussed at the beginning of each unit of work.
Adaptation **QFT/SEND Provision**	• By progressive questioning: exploring pupils' understanding through interactive dialogue. • By outcome: different learners will produce different outcomes. • By resource: worksheets are clearly presented and accessible. • By intervention: by providing different levels of supervision and support. • By offering optional activities**:** In class or as homework, to extend learning.

Implementation Curriculum Delivery **Learning Outcomes (Knowledge)**	See curriculum intent
Assessment	Refer to assessment maps for formative and summative assessment opportunities.
Impact	Attainment and Progress – Refer to assessment results / data review documentation.