



YEAR 13 FM 2023-2024 Spring TERM 1

'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Core Pure 2: Ch8 Modelling with Differential Equations

Medium Term Planning – Core Pure 2: Ch 6 (continued), Further Stats 1: Ch 5 Hyperbolic Functions (continued), CLT

Curriculum Intent

Core Pure 2: Ch 8: Modelling with Differential Equations

Skills/Assessment Objective Links

Chapter 8: Modelling with differential equations: **Chapter 8: Modelling with differential equations**

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| FM34 I can model real-life situations with first-order differential equations | | | |
| FM35 I can use differential equations to model simple harmonic motion | | | |
| FM36 I can model damped and forced oscillations using differential equations | | | |
| FM37 I can model real-life situations using coupled first-order differential equations | | | |

Prior knowledge

- **Methods of Differential Equations (Core Pure 2 Ch 7)**

Learning further developed in the future in:

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Skills/Assessment Objective Links

Prior Knowledge

Current learning to be developed in the future

Further Stats 1: Ch 5 Central Limit Theorem

Skills/Assessment Objective Links

Chapter 5: Central limit theorem: **Chapter 5: Central limit theorem**

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| S19 I can understand and apply the central limit theorem to approximate the sample mean of a random variable | | | |
| S20 I can apply the central limit theorem to other distributions | | | |

Prior knowledge

- **Representations of data (Applied Y1 Ch3)**
- **DRV (Further Stats 1 Ch1)**
- **Geometric and negative binomial distributions (Further Stats 1 Ch3)**

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

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| | 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 | <ul style="list-style-type: none"> • 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. |
| QFT/SEND Provision | |
| 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. |