The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 12 Mathematics - Pure
Learning Programme 4

The LORIC skill focus for this LP is: INITIATIVE.
The Moral Virtues focus for this LP are: INTEGRITY and GRATITUDE.

Integrity - Having strong moral principles. I will show integrity by taking responsibility for my actions.
Gratitude - Feeling and expressing thanks. I will show gratitude by saying please and thank you.

What will I be learning about in this Learning Programme?
In LP4 I will be learning about differentiation and integration.

Where have I seen this learning before?
GCSE: area under a curve and gradient of a tangent.

What could I use it for?
The knowledge and skills I will learn in this learning programme will allow me to solve calculus problems and apply this to variable acceleration problem sin Mechanics. This knowledge will be used in careers such as engineering.

Literacy Non-Negotiables:
- Capital letters must be used at the start of sentences and for the first letter of proper nouns
- Full stops must be used at the end of a sentence
- Question marks must be used at the end of a question
- Apostrophes should only be used for possession or omission
- Days of the week and months must be spelled correctly
- Key words must be spelled correctly
- Vocabulary to be taught using the Frayer model

In LP4.1, I will know:	09/03/26 - (WK 2)	Frayer Model Words	Homework
how to solve trigonometric equations using the identities.		Identity	Trigonometric Identities

In LP4.2, I will know:	16/03/26 - (WK 1)	Frayer Model Words	Homework
how to find the derivative of simple polynomial function; how to find the derivative of polynomial functions with two or more terms.		Derivative	Differentiation

In LP4.3, I will know:	23/03/26 - (WK 2)	Frayer Model Words	Homework
how to find the gradient of tangents and normals; how to identify increasing and decreasing functions. Extended Task.		Normal	Differentiation

PRT Task 1

In LP4.4, I will know:	13/04/26 - (WK 1)	Frayer Model Words	Homework
how to find second order derivatives; how to locate and classify stationary points.		Stationary Points	Differentiation

In LP4.5, I will know:	20/04/26 - (WK 2)	Frayer Model Words	Homework
how to sketch gradient functions; how to solve optimisation problems using differentiation.		Gradient	Optimisation

In LP4.6, I will know:	27/04/26 - (WK 1)	Frayer Model Words	Homework
how to integrate polynomial functions; how to find indefinite integrals. Extended Task.		Polynomial	Integration

PRT Task 2

In LP4.7, I will know:	04/05/26 - (WK 2)	Frayer Model Words	Homework
how to use integration to find functions given their derivative; how to find definite integrals.		Integration	Integration

Resources to support learning:

Use your knowledge organisers to support with revision and recall. Here are some online resources to further support you in your Mathematics revision beyond the classroom. All weekly homework tasks area based on the exercises from the book. In addition to homework, Pupils should use questions not used in class plus the review exercises to help support learning from outside the classroom. Online Resource for homework and exam practice: https://www.drfrostmaths.com/. Topic based exam questions - https://www.mathsgenie.co.uk/

FFET Award Challenge for this Learning Programme:

Create a revision mind/map or poster of any of the Pure Maths chapters.