The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 11 Physics (Separate)
Learning Programme 4

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

Integrity - Having strong moral principles.
Gratitude - Feeling and expressing thanks.

What will I be learning about in this Learning Programme?
Waves and their behaviour. The wave equation. The electromagnetic spectrum. Lenses. Magnetism and electromagnetism.

Where have I seen this learning before?
Sound and light (both waves) were part of both KS2 and KS3.

What could I use it for?
We will build on waves at A-level, where we look at how different sounds are formed, and how they link with quantum mechanics (wave-particle duality). Wave behaviour is important in careers in astronomy, engineering, radiography and music technology.

Literacy:
- 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

In LP4.1, I will know: 10/03/25 - (WK 2)	Key Vocabulary	Homework
Year 11 mock exams		Revision for mock exams
In LP4.2, I will know: 17/03/25 - (WK 1)	**Key Vocabulary**	**Homework**
how to measure wavelength, frequency and speed of waves in a ripple tank and in a solid; investigate the reflection of light by different surfaces and the refraction of light by different substances; how to construct accurate ray diagrams to illustrate reflection and refraction of waves at a surface. Construct a wave front diagram for refraction. Explain why refraction occurs.	Refraction Reflection	Complete past paper questions on refraction
In LP4.3, I will know: 24/03/25 - (WK 2)	**Key Vocabulary**	**Homework**
how to describe the components of the EM spectrum, their wavelengths & frequencies. Explain how some EM waves can be harmful to human health; how to describe the uses of the components of the EM spectrum; LP 4 formative assessment 1. Extended Task.	Electromagnetic	Revision for formative assessment using Sparx Science
In LP4.4, I will know: 31/03/25 - (WK 1)	**Key Vocabulary**	**Homework**
my strengths and areas for developments following the LP 4 formative assessment 1 and PRT; how to explain how white light is a combination of all of the colours of the colour spectrum, and the process of dispersion.	Dispersion	Complete past paper questions on light and colour
In LP4.5, I will know: 21/04/25 - (WK 2)	**Key Vocabulary**	**Homework**
how to investigate how surfaces affect the amount of IR radiation absorbed and emitted; how to describe what a black body is and explain the key features of black body radiation curves;	Infrared	Complete past paper questions on the infrared radiation required practical
In LP4.6, I will know: 28/04/25 - (WK 1)	**Key Vocabulary**	**Homework**
how to describe the difference between convex and concave lenses. Calculate magnification. Complete ray diagrams for both convex and concave lenses, identifying the nature of the image formed. LP4 formative assessment 2 Extended Task.	Convex Concave	Revision for formative assessment using Sparx Science
In LP4.7, I will know: 05/05/25 - (WK 2)	**Key Vocabulary**	**Homework**
my strengths and areas for developments following the LP 4 formative assessment 2 and PRT; how to describe the relationship between image, object and focal length;	Magnification	Complete additional past paper questions on lenses

PRT Task 1

PRT Task 2

Resources to support learning:
Knowledge organiser, Isaac physics, www.physicsandmathstutor.com, text book

FFET Award Challenge for this Learning Programme:
LP3 Year 11 Science: Complete a practice paper independently.