The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 11 Combined Science - Physics/Chemistry
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. 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?
The properties of transverse and longitudinal waves, including how to calculate wave speed, and explores the behavior of the electromagnetic spectrum and its various applications in communication and medicine.
The properties of magnetic fields, the interaction between currents and magnets known as the motor effect, and how these principles are applied in practical devices like electric motors.

Where have I seen this learning before?
Waves and Magnetism were both studied at KS3 and develops the understanding of the electricity topics covered in year 10.

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 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
Complete Mock assessments	longitudinal	sparx science
In LP4.2, I will know: 16/03/26 - (WK 1)	**Frayer Model Words**	**Homework**
how to describe the features of a wave and difference between transverse and longitudinal waves and provide examples; how to calculate the frequency, period and speed of a wave.	transverse	sparx science
In LP4.3, I will know: 23/03/26 - (WK 2)	**Frayer Model Words**	**Homework**
How to measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid - required practical; how to construct accurate ray diagrams to illustrate reflection and refraction of waves at a surface. Extended Task.	frequency	sparx science
In LP4.4, I will know: 13/04/26 - (WK 1)	**Frayer Model Words**	**Homework**
My strengths frollowing the mock examinations. how to describe the components of the EM spectrum, their wavelengths & frequencies.	refraction	sparx science
In LP4.5, I will know: 20/04/26 - (WK 2)	**Frayer Model Words**	**Homework**
How to explain the uses and danger of EM waves; how to investigate the amount of infrared radiation absorbed or radiated by a surface - Required Practical.	Reflection	sparx science
In LP4.6, I will know: 27/04/26 - (WK 1)	**Frayer Model Words**	**Homework**
How to describe magnetic fields and the difference between permanent and induced magnets; how to describe uses of an electromagnet explain the magnetic effect of a solenoid. Extended Task.	magnetic	sparx science
In LP4.7, I will know: 04/05/26 - (WK 2)	**Frayer Model Words**	**Homework**
How to use Flemming's Left Hand Rule and calculate the force on a current carrying conductor placed in a magnetic field (HT); how to describe the motor effect (HT)	Fleming's Left Hand Rule	sparx science

PRT Task 1

PRT Task 2

Resources to support learning:
BBC bitesize, www.physicsandmathstutor.com, revision guide, Synergy, Sparx Science.

FFET Award Challenge for this Learning Programme:
Complete a practice paper independently.