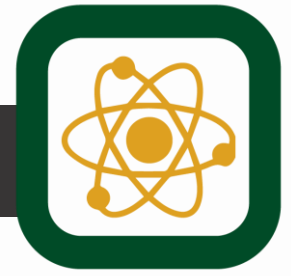


LEARNING JOURNEY

Physics



Waves and Optics

Year 12 Physics Spring Term (Teacher 2)

This topic builds on GCSE knowledge, starting with the features of waves, transverse/longitudinal waves, and optics. You will look at comparing points of a wave and using phase and phase difference. This will then be applied to stationary waves and to interference patterns. Geometric optics (refraction and reflection) will be studied in more mathematical detail than GCSE, and applications such as fibre optics will be explored. You will complete a suite of practicals looking at standing waves.

Wave Properties

How waves are measured and described, how to calculate wave speed and phase difference

Polarisation

How transverse waves can be plane polarised and their applications

Stationary Waves

How stationary waves are formed and how to describe and analyse stationary waveforms. Use of harmonics.

Stationary Waves on Strings

Practical to see how stationary waves behave in real life and to develop your skills

Optics

Refraction, reflection, TIR and the use of Snell's Law; how fibre optics work

Interference Patterns

Two-dimensional interference including double slits and gratings, application of path difference and phase difference

Interference Pattern Practical Work

Practical work to measure and analyse interference patterns to develop your knowledge and skills

TUDOR HABITS AND VALUES: Show grit and courage as you attempt increasingly complex practicals and concepts, utilising all your problem solving skills.

VOCABULARY; frequency, time period, phase, coherent, node/antinode, superpose, refractive index, path difference, diffract