A-LEVEL PHYSICS LEARNING JOURNEY

EXAMS

Year 13

ASTROPHYSICS
- The Big Bang
- Evolution of the Universe
- Energy Levels and Spectra
- Life Cycle of Stars
- Carbon Dating
- Exponential Decay
- Nuclear fusion
- Cosmology
- Astronomical Distances
- Doppler Effect
- HR Diagram
- Analysing Stars
- Half-life

NUCLEAR PHYSICS
- Einstein's mass-energy equation
- Nuclear decay
- Nuclear fission
- Binding Energy
- Radio- activity
- Nuclear Physics

THERMAL PHYSICS
- Kinetic Theory of Gases
- Damping
- Resonance
- Specific Latent Heat
- Specific Heat Capacity
- Thermal Physics
- Circular and SHM
- Resistivity

FIELDS
- Gravitational Fields
- Kepler's Laws
- Coulomb's Law
- Electric Potential
- Charged Particles in a Magnetic Field
- Transformers
- Electric Fields
- Gravitational Potential
- Newton's Law of Gravitation
- Charged Particles in an E-Field
- Magnetic Fields
- EM Induction

ELECTRICITY
- Analysing Circuits
- Kirchhoff's First Law
- Combining Resistors
- Resistance
- Momentum
- Electrical Energy
- Potential Divider
- IV Characteristics
- Pd and EMF
- Electrical Current
- Using excel and spreadsheets to analyse data

FORCES & MATERIALS
- Superposition of waves
- Stationary waves
- Conservation of Energy
- Power
- Hooke's Law and Young's Modulus
- Density and Pressure
- Total Internal Reflection
- Young's Double Slit Experimentt experiment
- Kinematics and the motion of bodies
- Newton's Laws of Motion
- Archimedes' Principle
- Deforming Materials

WAVES
- Diffraction and polarisation
- Reflection and refraction
- Waves
- Wave-Particle Duality
- The Photon Model
- The Photoelectric Effect

PARTICLES & RADIATION
- Quantum Physics
- Quarks
- The nucleus
- Scalars & Vectors
- Induction tasks
- Anti-particles, hadrons and leptons
- Alpha Particle Scattering
- Particle Physics
- Foundations of Physics

Year 12