PHYSICS LEARNING JOURNEY

Required Practicals

Year 12

Year 13

1 .Investigation into the variation of the frequency of stationary waves on a string with length, tension and mass per unit length of the string

2.Investigation of interference effects to include the Young's slit experiment and interference by a diffraction grating

3.Determination of g by a free-fall method

4. Determination of the Young modulus by a simple method

5.Determination of resistivity of a wire using a micrometer, ammeter and voltmeter

6. Investigation of the emf and internal resistance of electric cells and batteries by measuring the variation of the terminal pd of the cell with current in it

7.Investigation into SHM using a mass-spring system and simple pendulum

8.Investigation of Boyle's law and Charles's law for a gas

9.Investigation of the charge and discharge of capacitors

10.Investigate how the force on a wire varies with flux density, current and length of wire using a top-pan balance

11. Invesigate, using a search coil and oscilloscope, the effect on magnetic flux linkage of varying the angle between a search coil and magnetic field direction

12.Investigation of the inverse square law for gamma radiation

Final A level exams

Examinations

Revision

Transformers

Alternating currents

Electromagnetic induction

Cosmology

Classification of stars

Telescopes

Kinetic theory of gases

Experimental gas laws

Latent heat

Specific heat capacity

Internal energy

Nuclear reactor

Electric Fields

Capacitors

Magnetic flux

Charges in magnetic fields

Gravitational Fields

Binding energy and fission/fusion

Energy and mass

SHM

Circular Motion

YEAR 13

The Young modulus

Bulk Properties of solids

Uses of radioisotopes

Radioactive decay

Alpha, beta, gamma radiation

Discovery of the nucleus and radioactivity

Conservation of energy

Alternating current and power

Emf and internal resistance

Resistance

Components and their characteristics

Momentum

Motion in a straight line

Projectile motion

Newtons laws

Work, Energy and Power

Force energy and momentum

Refraction, Diffraction and Interference

Progressive and Stationary waves

Potential difference

YEAR 12

Current and charge

Wave particle duality

Energy levels in atoms

Photoelectric effect

Quarks and Leptons

Matter and radiation