

A-LEVEL PHYSICS LEARNING JOURNEY



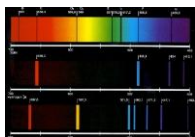
The Big Bang

Cosmology

Astronomical Distances



Evolution of the Universe



Energy Levels and Spectra

Life Cycle of Stars

Carbon Dating

Exponential Decay

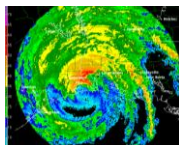
Nuclear fusion

Einstein's mass-energy equation



Nuclear decay

Nuclear Physics



ASTROPHYSICS

NUCLEAR PHYSICS

Doppler Effect



HR Diagram

Analysing Stars

Half-life

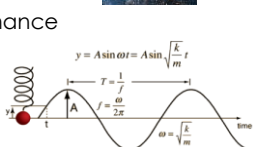
Nuclear fission

Binding Energy

Radio-activity

Damping

Resonance



Gravitational Fields

Kepler's Laws

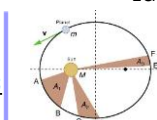
Coulomb's Law

Electric Potential

Charged Particles in a Magnetic Field

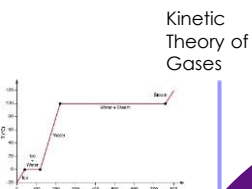
Transformers

$$F = G \frac{M_1 M_2}{r^2}$$



THERMAL PHYSICS

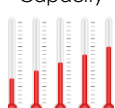
FIELDS



Kinetic Theory of Gases

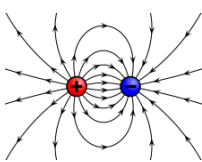
Specific Latent Heat

Specific Heat Capacity



Circular and SHM

Thermal Physics



Resistivity

Analysing Circuits

Electric Fields

Gravitational Potential

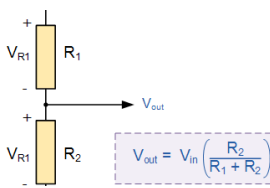
Newton's Law of Gravitation

Charged Particles in an E-Field

Magnetic Fields

EM Induction

$$\frac{1}{R_{TOTAL}} = \frac{1}{R_1} + \frac{1}{R_2} + \dots + \frac{1}{R_n}$$



Year 13

ELECTRICITY

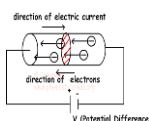
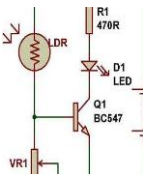
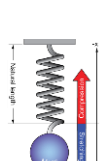
Momentum

Can you find the value of x?			
+	+	=	2
+	+	=	4
+	+	=	7
-	-	=	1

Using excel and spreadsheets to analyse data

Hooke's Law and Young's Modulus

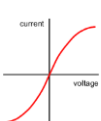
Density and Pressure



Electrical Energy

Potential Divider

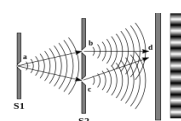
IV Characteristics



Pd and EMF

Electrical Current

Superposition of waves

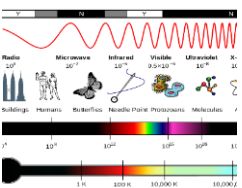


Stationary waves

Conservation of Energy



Power



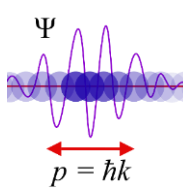
WAVES

FORCES & MATERIALS

Diffraction and polarisation

Reflection and refraction

Wave-Particle Duality



Total Internal Reflection

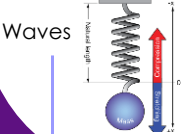
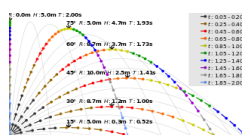
Young's Double Slit Experiment

Kinematics and the motion of bodies

Newton's Laws of Motion

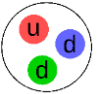
Archimedes' Principle

Deforming Materials



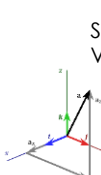
Waves

Quantum Physics



Quarks

The nucleus



Scalars & Vectors

Induction tasks

PARTICLES & RADIATION

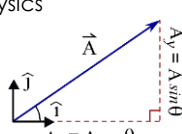
Anti-particles, hadrons and leptons

Alpha Particle Scattering



Particle Physics

Foundations of Physics



Year 12

