



01

# Physics - UK

YEARS 10 - 11

Experience Level: **KEY-STAGE 4**Number of Classes: **VARIABLE**Age Range: **15 - 17 YEARS**

01

## Electricity

- Static charge
- Electric fields
- Standard circuit diagram symbols
- Electrical charge and current
- Current, resistance and potential difference
- Resistors
- Series and parallel circuits
- Direct and alternating potential difference



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02

02

## Magnetism and Electromagnetism

- Mains electricity
- Power
- Energy transfers in everyday appliances
- The National Grid
- Poles of a magnet
- Magnetic fields
- Electromagnetism
- Fleming's left-hand rule
- Induced potential
- Uses of the generator effect

03

## Waves

- Transverse and longitudinal waves
- Properties of waves
- Reflection of waves
- Sound waves
- Waves for detection and exploration
- Types of electromagnetic waves
- Properties of electromagnetic waves
- Uses and applications of electromagnetic waves
- Lenses
- Visible light
- Emission and absorption of infrared radiation



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04

## Space Physics

- Our solar system
- The life cycle of a star
- Orbital motion, natural and artificial satellites
- Red-shift

05

## Motion

- Distance and displacement
- Speed, Velocity, Acceleration
- Scalar and vector quantities
- Contact and non-contact forces
- Gravity
- Resultant forces

06

## Forces

- Stopping distance
- Braking distance
- Reaction time
- Newton's First Law
- Newton's Second Law
- Newton's Third Law
- Momentum is a property of moving objects
- Conservation of momentum
- Changes in momentum
- Work done and energy transfer
- Forces and elasticity
- Moments, levers and gears
- Pressure in a fluid
- Atmospheric pressure



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