Physics

Year 12

AQA

Half Term 1

Mechanics

Forces and moments

Vectors and scalars

Balanced Forces

The principle of moments

Stability

Equilibrium rules

Statics calculations

Electricity

Electric current

Current and charge

Potential difference and power

Resistance components and their characteristics

Equilibrium rules

Statics calculations

Motion

Graphs and equations of motion

Gravity by freefall

Projectiles

F=ma and laws of motion

Friction

Half Term 2

Materials

Density

Springs

Deformation of solids

Stress and Strain

DC Circuits

Circuit rules

Resistivity

Emf and Internal Resistance

Circuit calculations

The potential divider

Motion

Terminal Velocity

Momentum

Explosions

Impact force

Conservation of momentum

Work and energy

Power

Efficiency

Progress Update 1 issued (November)

Half Term 3

Waves and Optics

Measuring waves and wave properties

Stationary and progressive waves

Using an oscilloscope

Refraction of light

Internal reflection

Double slit interference

Diffraction

Matter and radiation

Inside the atom

Stable and unstable nuclei

Photons

Particles and antiparticles

Particle interactions

Half Term 4

Quarks and leptons

The particle zoo

Particle sorting

Leptons at work

Quarks and antiquarks

Conservation rules

Quantum Phenomena

Photoelectric effect

Photoelectricity

Collisions of electrons

Energy levels in atoms

Energy levels and spectra

Wave particle duality

Progress Update 2 issued (March)

Half Term 5

Thermal Physics

Internal energy and temperature

Specific heat capacity

Changes of state

Year 12 Mocks (April)

Progress Update 3 issued (May)

Half Term 6

Circular Motion

Uniform circular motion

Centripetal acceleration

On the road

At the fairground

Revision and Maths Skills

Physics

Year 13

AQA

Half Term 1

Gases

Experimental gas laws

The ideal gas laws

The kinetic theory of gases

Simple harmonic motion

Oscillations

Sine waves

Applications of SHM

Energy and SHM

Forced vibrations and resonance

Radioactivity

Discovery of the nucleus

Properties of alpha, beta and gamma

Half Term 2

Progress Update 1 issued (November)

Dangers of radioactivity

Radioactive decay

Radioactive isotopes in use

Decay modes

Nuclear radius

Gravitational Fields

Gravitational field strength

Gravitational potential

Newton's law of gravity

Planetary fields

Satellite motion

Year 13 Mocks (November)

Half Term 3

Progress Update 2 issued (January)

Electric and magnetic fields

Field patterns

Electric field strength

Electric potential

Coulomb's law

Nuclear Energy

Energy and mass

Binding energy

Fission and fusion

Thermal nuclear reactor

Half Term 4

Point charges

Comparing electric and magnetic fields

Current carrying conductors in a magnetic field

Moving charges

Electromagnetic Induction

Generating electricity

Laws of electromagnetic induction

A.C Generator

Alternating current and power

Transformers

Half Term 5

Engineering Physics

Rotational Dynamics

Angular Momentum

Thermodynamics

Heat systems

System Outputs

Capacitors

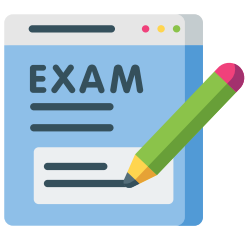
Energy stored in a charged capacitor

Dielectrics

Charging and discharging a capacitor

Year 13 Mocks (February)

Exams



3 x 2 hour exams (equally weighted)

Progress Update 3 issued (March)

Results Day (August)