Glenthorne High School
Achievement for all

Physics Learning Journey

Skills

Knowledge

Year 11 "Becoming KS5 Ready"

Magnetism
National grid, transformers, induced potential, magnets – permanent and induced, magnetic fields, electromagnets, DC motors, alternator and dynamos, other uses of induction

Revision

Future Education, Employment & Training

KS5 Study

Electricity
Static, Mains – AC and DC, solving circuit problems, series and parallel circuits, I/V characteristics – Ohm's law, resistance, current, potential difference, electrical power, sensing circuits, mains – safety, electric fields.

Year 10 "Developing into Independent Learners"

Year 11

Energy
Energy resources, efficiency, energy calculations, measuring specific heat capacity, power, conservation energy, energy stores, defining work, energy transfers, kinetic energy, and gravitational potential energy.

Space
Structure of the universe, red shift and evidence for the big bang, stellar evolution

Forces
Measuring speed, Velocity time graphs, Vectors, Newton's Law, Solving Vector problems – Scale Drawing/Resolution, Behaviour of springs – Hooke's law, elastic potential energy, momentum and its conservation, moments and gears, atmospheric pressure, Distance time graphs, Acceleration, terminal velocity, calculating work done, elastic potential energy, rate of change of momentum, pressure at a depth in liquids, car safety.

Year 9 "Developing Skills to Enhance Learning"

Year 10

Structure of the Atom
Nuclear fusion, Uses and dangers of ionizing radiation, Half-Life, Nuclear reactions, Structure of the atom, nuclear fission, Contamination and irradiation, Radioactivity – Alpha, beta and gamma, History of the Atom.

Waves
Black body radiation, Ultrasound, Transmission, Reflection or absorption, Wave Equation, longitudinal & transverse waves, Lenses, Seismic waves, Reflection & refraction od light, Electromagnetic spectrum, Wave terminology

Particle Model
Work done on gases, Specific latent heat, Specific heat capacity, Internal energy, Density, Particle arrangement, Particle motion, Gas pressure, Boyle's Law

Year 8 "Taking Responsibility for Learning"

Heating & Cooling
Heat & Temperature, Heat transport, Conduction, Convection, Radiation

Year 9

Magnetism
Magnets and magnetic materials, Electromagnets, Magnetic Poles

Waves
Ultrasound, Interference

Year 7 "Transition to High School"

Earth
Seismic waves, Space exploration, The solar system, The earth, and the moon.

Year 8

Gravity & Pressure
Gravity & weight, Gravitational field strength, Pressure in liquids, Pressure in solids, Pressure in gases – Hydraulics.

Electricity
Potential difference, Ohm's law, Resistance, Circuits & current

Energy
Conservation, Work, Efficiency, Humans & Energy, Gravitational potential energy, Energy stores

Waves
Light, Loudness and pitch, detecting sound – the ear, Speed of sound, Seeing colour, Reflection, Refraction, Sound, Waves.

Year 6 Induction

Year 7

Intro to science
Fundamental skills, Table, and graph skills

Forces
Identifying & representing forces, drag forces & fiction, Speed, distance, time, Resultant forces, Forces at a distance, Stretching and squashing.