

Topic	Sub-heading	Keywords	OCR Gateway Combined science	OCR Gateway Physics
Thermal energy	Temperature and heat	joules, degrees, temperature, heat, changes of state, thermal energy, thermometer, kinetic energy, heating graph, cooling graph	P1.2	P1.2
Thermal energy	Kinetic theory	changes of state, kinetic theory, particles, solids, liquids, gases, thermal energy, temperature	P1.2	P1.2
Thermal energy	Conduction	energy transfer, conduction, conductor, insulator		
Thermal energy	Convection	energy transfer		
Thermal energy	Radiation	infra-red, emission, absorption, radiation		P8.3
Thermal energy	Rate of energy transfer	surface area, energy transfer, thermal energy, thermal gradient		
Thermal energy	Energy saving	insulator, U-value, double glazing	P5.2	P7.2
Thermal energy	Solar energy	solar heating, solar cell, solar panel		
Thermal energy	Specific heat	specific heat capacity	P1.2	P1.2
Using and generating electricity	Generating electricity	fossil fuels, biofuels, renewable, non-renewable, turbine, power station, greenhouse gases, climate change, deforestation, habitats, nuclear waste	P6.2	P8.2
Using and generating electricity	Nuclear power	uranium, turbine, radioactive, fission, power station, nuclear chain reaction		
Using and generating electricity	National grid	step-up transformer, step-down transformer, National Grid	P6.2	P8.2
Using and generating electricity	Transformers	step-up transformer, step-down transformer, induced	P6.2	P8.2 P4.2
Using and generating electricity	Cost of electricity	appliance, power, kWh, energy saving	P5.1 P5.2	P7.1 P7.2
Using and generating electricity	What is electricity	ac, dc, mains electricity	P3.1	P3.1
Using and generating electricity	Cables and plugs	3-pin plug, 3 core cable, fuse, live wire, earth wire, neutral wire	P6.2	P8.2
Using and generating electricity	Electrical power	power, kilowatt, watt, fuse	P3.2	P3.2
Using and generating electricity	Efficiency	Efficiency, Sankey diagram	P5.2	P7.2

Static electricity	Static electricity	attract, repel, charge, electrostatic	P3.1	P3.1
Electrical circuits	Current, voltage & resistance	ammeter, voltmeter, potential difference, charge, coulomb	P3.2	P3.2
Electrical circuits	Series and parallel circuits	series circuit, parallel circuit, components	P3.2	P3.2
Electrical circuits	Ohms law	Ohm's law, resistance, voltage, current, resistor	P3.2	P3.2
Electrical circuits	Resistance	current, voltage, resistor, filament lamp, diode, LED, thermistor, LDR	P3.2	P3.2
Electricity and magnetism	Motors and generators	inducing, Fleming's left hand rule, generator, motor	P3.3	P4.1 P4.2
Waves	Waves	electromagnetic, longitudinal, transverse, sound, light, amplitude, wavelength, frequency	P4.1	P5.1
Waves	Wave equations	frequency, wavelength, amplitude, speed	P4.1	P5.1
Waves	Electro-magnetic spectrum	electromagnetic, transverse, light, microwave, radio wave, X-ray, gamma wave, radiation, UV, IR	P4.2	P5.2
Waves	Lasers	light		
Waves	Ultrasound	ultrasound, echo, reflection, longitudinal, depth		P5.1
Earth	Seismic waves	crust, mantle, plate, earthquake, P wave, S wave		
Optics	Reflection & refraction	angle of incidence, angle of reflection, ray diagram, refractive index, total internal reflection, optical fibre, endoscope, spectrum	P4.2	P5.3
Optics	Diffraction	interference		
Optics	Lenses	real, virtual, concave, convex, magnification, ray diagram, power, focal length		P5.3
Optics	The eye and sight	focusing, retina, lens, long sight, short sight		
Motion and forces	Forces	forces, friction, weight, Newton's Laws, acceleration, resultant force	P2.2	P2.2
Motion and forces	Friction	force	P2.2	P2.2
Motion and forces	Stopping distance	stopping distance, thinking time, braking time	P6.1	P8.1
Motion and forces	Motion graphs	distance-time graphs, speed, acceleration, velocity - time graph	P2.1	P2.1
Motion and forces	Terminal velocity	terminal velocity, air resistance, acceleration, balanced forces	P2.2	P2.2

Motion and forces	Mass and weight	mass, weight, gravity	P2.3	P2.3
Motion and forces	Momentum	velocity, collision, explosion	P2.2	P2.2
Motion and forces	Change of momentum	car safety, speed	P2.2 P6.1	P2.2 P8.1
Motion and forces	Collisions	elastic, inelastic		
Motion and forces	Circular motion	centripetal force, circular motion, velocity, vector	P2.2	P2.2 P8.3
Work, forces, energy and power	Energy transfer	potential, kinetic, chemical, GPE, KE, Sankey diagram	P5.1	P7.1
Work, forces, energy and power	Work	work done, force	P2.2	P2.2
Work, forces, energy and power	Power	power, watts	P2.2	P2.2
Work, forces, energy and power	GPE	gravitational potential energy	P5.1	P7.1
Work, forces, energy and power	Kinetic energy	KE	P5.1	P7.1
Work, forces, energy and power	Energy transfer calculations	conservation of energy	P5.1	P7.1
Solar system	Solar system	solar system, galaxy, planet, star, comet		P8.3
Solar system	Life of a Star	black hole, red giant, white dwarf, fusion		P8.3
Solar system	Origin of the Universe	big bang, CMBR, red-shift, Doppler effect		P8.3
Atoms and radioactivity	Atomic structure	electron, proton, neutron, mass number	P1.1	P1.1
Atoms and radioactivity	Nuclear radiation	ion, alpha, beta, gamma, ionising, penetrating power, background	P4.3	P6.1
Atoms and radioactivity	Half-life	half-life, decay	P4.3	P6.1
Atoms and radioactivity	Uses of radiation	danger, tracers, ionising, dating, C-14		P6.2
Atoms and radioactivity	Fission and fusion	uranium, chain reaction		P6.2