

Topic	Sub-heading	Keywords	Edexcel Combined science	Edexcel Physics
Thermal energy	Temperature and heat	joules, degrees, temperature, heat, changes of state, thermal energy, thermometer, kinetic energy, heating graph, cooling graph	Topic 14 – Particle model	Topic 14 – Particle model
Thermal energy	Kinetic theory	changes of state, kinetic theory, particles, solids, liquids, gases, thermal energy, temperature	Topic 14 – Particle model	Topic 14 – Particle model
Thermal energy	Conduction	energy transfer, conduction, conductor, insulator		
Thermal energy	Convection	energy transfer		
Thermal energy	Radiation	infra-red, emission, absorption, radiation		Topic 5 – Light and the electromagnetic spectrum
Thermal energy	Rate of energy transfer	surface area, energy transfer, thermal energy, thermal gradient		Topic 5 – Light and the electromagnetic spectrum
Thermal energy	Energy saving	insulator, U-value, double glazing	Topic 14 – Particle model	Topic 14 – Particle model
Thermal energy	Solar energy	solar heating, solar cell, solar panel		
Thermal energy	Specific heat	specific heat capacity	Topic 14 – Particle model	Topic 14 – Particle model
Using and generating electricity	Generating electricity	fossil fuels, biofuels, renewable, non-renewable, turbine, power station, greenhouse gases, climate change, deforestation, habitats, nuclear waste	Topic 3 – Conservation of energy	Topic 3 – Conservation of energy
Using and generating electricity	Nuclear power	uranium, turbine, radioactive, fission, power station, nuclear chain reaction		Topic 6 – Radioactivity
Using and generating electricity	National grid	step-up transformer, step-down transformer, National Grid	Topic 13 – Electromagnetic induction	Topic 13 – Electromagnetic induction
Using and generating electricity	Transformers	step-up transformer, step-down transformer, induced	Topic 13 – Electromagnetic induction	Topic 13 – Electromagnetic induction

Using and generating electricity	Cost of electricity	appliance, power, kWh, energy saving		
Using and generating electricity	What is electricity	ac, dc, mains electricity	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Using and generating electricity	Cables and plugs	3-pin plug, 3 core cable, fuse, live wire, earth wire, neutral wire	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Using and generating electricity	Electrical power	power, kilowatt, watt, fuse	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Using and generating electricity	Efficiency	Efficiency, Sankey diagram	Topic 3 – Conservation of energy	Topic 3 – Conservation of energy
Static electricity	Static electricity	attract, repel, charge, electrostatic		Topic 11 – Static electricity
Electrical circuits	Current, voltage & resistance	ammeter, voltmeter, potential difference, charge, coulomb	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Electrical circuits	Series and parallel circuits	series circuit, parallel circuit, components	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Electrical circuits	Ohms law	Ohm's law, resistance, voltage, current, resistor	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Electrical circuits	Resistance	current, voltage, resistor, filament lamp, diode, LED, thermistor, LDR	Topic 10 – Electricity and circuits	Topic 10 – Electricity and circuits
Electricity and magnetism	Motors and generators	inducing, Fleming's left hand rule, generator, motor	Topic 12 – Magnetism and the motor effect	Topic 12 – Magnetism and the motor effect
Waves	Waves	electromagnetic, longitudinal, transverse, sound, light, amplitude, wavelength, frequency	Topic 4 – Waves	Topic 4 – Waves
Waves	Wave equations	frequency, wavelength, amplitude, speed	Topic 4 – Waves	Topic 4 – Waves
Waves	Electromagnetic spectrum	electromagnetic, transverse, light, microwave, radio wave, X-ray, gamma wave, radiation, UV, IR	Topic 5 – Light and the electromagnetic spectrum	Topic 5 – Light and the electromagnetic spectrum
Waves	Lasers	light		

Waves	Ultrasound	ultrasound, echo, reflection, longitudinal, depth	Topic 4 – Waves	Topic 4 – Waves
Earth	Seismic waves	crust, mantle, plate, earthquake, P wave, S wave	Topic 4 – Waves	Topic 4 – Waves
Optics	Reflection & refraction	angle of incidence, angle of reflection, ray diagram, refractive index, total internal reflection, optical fibre, endoscope, spectrum	Topic 4 – Waves	Topic 4 – Waves
Optics	Diffraction	interference		
Optics	Lenses	real, virtual, concave, convex, magnification, ray diagram, power, focal length		Topic 5 – Light and the electromagnetic spectrum
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	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Friction	force	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Stopping distance	stopping distance, thinking time, braking time	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Motion graphs	distance-time graphs, speed, acceleration, velocity - time graph	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Terminal velocity	terminal velocity, air resistance, acceleration, balanced forces		
Motion and forces	Mass and weight	mass, weight, gravity	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Momentum	velocity, collision, explosion	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Change of momentum	car safety, speed	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Collisions	elastic, inelastic	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Motion and forces	Circular motion	centripetal force, circular motion, velocity, vector	Topic 2 – Motion and forces	Topic 2 – Motion and forces
Work, forces, energy and power	Energy transfer	potential, kinetic, chemical, GPE, KE, Sankey diagram	Topic 3 – Conservation of energy	Topic 3 – Conservation of energy

Work, forces, energy and power	Work	work done, force	Topic 8 – Energy – forces doing work	Topic 8 – Energy – forces doing work
Work, forces, energy and power	Power	power, watts	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work
Work, forces, energy and power	GPE	gravitational potential energy	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work
Work, forces, energy and power	Kinetic energy	KE	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work	Topic 3 – Conservation of energy Topic 8 – Energy – forces doing work
Work, forces, energy and power	Energy transfer calculations	conservation of energy	Topic 3 – Conservation of energy	Topic 3 – Conservation of energy
Solar system	Solar system	solar system, galaxy, planet, star, comet		Topic 7 – Astronomy
Solar system	Life of a Star	black hole, red giant, white dwarf, fusion		Topic 7 – Astronomy
Solar system	Origin of the Universe	big bang, CMBR, red-shift, Doppler effect		Topic 7 – Astronomy
Atoms and radioactivity	Atomic structure	electron, proton, neutron, mass number	Topic 6 – Radioactivity	Topic 6 – Radioactivity
Atoms and radioactivity	Nuclear radiation	ion, alpha, beta, gamma, ionising, penetrating power, background	Topic 6 – Radioactivity	Topic 6 – Radioactivity
Atoms and radioactivity	Half-life	half-life, decay	Topic 6 – Radioactivity	Topic 6 – Radioactivity
Atoms and radioactivity	Uses of radiation	danger, tracers, ionising, dating, C-14		Topic 6 – Radioactivity
Atoms and radioactivity	Fission and fusion	uranium, chain reaction		Topic 6 – Radioactivity