

Spec Ref	Topic	TAP episode	comments
4.3	principle of conservation of linear momentum	220	
	Newton's second law of motion	211	
	$E_k = p^2/2m$ for the kinetic energy of a non-relativistic particle		No references
	conservation of energy, elastic & inelastic collisions	220-3	
	radians, angular velocity	225	Initial discussion
	centripetal force & acceleration	224, 225	
4.4	electric field and electric field strength $E = F/Q$	408	
	radial and uniform electric fields	406	
	Coulomb's law and force between point charges	407	
	$E = V/d$ for parallel plates	409	
	$C = Q/V$	126	
	$W = \frac{1}{2} QV$	128	
	Discharge of a capacitor & time constant RC	129	
	magnetic flux density B, flux Φ and flux linkage $N\Phi$	411 414	
	$F = BIl \sin \theta$ and Fleming's left hand	412	
	$F = Bqv \sin \theta$ deflection of electron beams by a magnetic field	413	$F=Bqv$ $F=Bqv \sin\theta$ stated only
	Electromagnetic induction, Faraday's and Lenz's laws	414	
4.5	nucleon number and proton number	524	Introduction
	alpha particle scattering & the nuclear atom	520, 521	
	thermionic emission & acceleration by electric & magnetic fields	518	Thermionic emission mentioned only in 103-2
	particle accelerators and detectors	518, 519	
	$r = p/BQ$ for a charged particle in a magnetic field	413	Not treated in terms of momentum
	$\Delta E = c^2 \Delta m$, matter and antimatter particles	533	
	relativistic effects (not equations)	518-8	
	quark-lepton model antiparticles, baryons, mesons	533, 534, 540	
	de Broglie's equation $\lambda = h/p$	506	