



SP13 Electromagnetic induction

Personal learning checklist | 1 of 2

GCSE Edexcel Separate Sciences | Physics Paper 2

Name _____ Class _____ Date _____

Tick one box for each statement. Red: need help. Amber: partly confident.
Green: can do independently.

I can	Red	Amber	Green
Induction (Higher)			
Explain induced voltage from changing fields or relative motion and distinguish voltage from closed-circuit current (Higher).	☐	☐	☐
Predict effects of magnet speed, strength, coil turns, motion reversal and pole reversal (Higher).	☐	☐	☐
Explain induced-field opposition and why mechanical work supplies electrical energy (Higher).	☐	☐	☐
Plan controlled induction investigations using signed voltage measurements, stationary comparisons and repeatable movements (Higher).	☐	☐	☐
Transformer operation (Higher)			
Explain transformer operation through alternating primary current, linked changing fields and induced secondary voltage (Higher).	☐	☐	☐
Explain why steady DC fails and distinguish step-up from step-down alternating-voltage changes (Higher).	☐	☐	☐
Transformer power			
Calculate missing transformer voltages and currents using equal input and output power for 100% efficiency.	☐	☐	☐
Distinguish ideal power equality from real losses and calculate useful or dissipated power from efficiency.	☐	☐	☐

My next revision priority _____



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I can	Red	Amber	Green
National Grid			
Explain step-up and step-down transformer locations and high-voltage transmission for lower current and heating losses.	☐	☐	☐
Calculate transmission current and cable heating and explain the squared-current loss relationship.	☐	☐	☐
Describe the grid's energy-transfer role and distinguish transmission voltages from domestic supply and safe access.	☐	☐	☐
Generators and sound			
Explain induced current from relative movement between conductors and magnetic fields (Higher).	☐	☐	☐
Compare alternators and dynamos using slip rings, commutators and output waveforms (Higher).	☐	☐	☐
Explain moving-coil microphones, loudspeakers and headphones and their energy transfers (Higher).	☐	☐	☐
Transformers and transmission			
Use ideal transformer turns and voltage ratios and explain alternating input (Higher).	☐	☐	☐
Use ideal power balance to relate transformer voltages and currents (Higher).	☐	☐	☐
Explain high-voltage transmission and calculate current-related cable losses (Higher).	☐	☐	☐

My next revision priority _____