

Blue Pathway								
Purple Pathway								
Orange Pathway								
	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12
AO1 Remember	Show the direction of magnetic field lines	Describe temporary and permanent magnets	Describe how a bar magnet moves inside an electromagnetic field	Describe the motor effect	Explain induced magnetism	Explain how induced pd / current is reversed in the motor effect	Use accurate and appropriate scientific language and units	Recall all key areas of Science through accurate scientific explanations.
	Describe Earth and compasses as examples of magnets	Describe how to make an electromagnet		State the definition of a dynamo	Explain solenoids			
		Remember a wide range of basic facts.	State definition and units of magnetic flux density	State what a basic step-up and step-down transformers consists of	Explain the geographical north and magnetic north	Explain how a dynamo works using the generator effect	Explain microphones	
AO2 Application	Consistently use equations in calculations.	Consistently use and sometimes rearrange equations in calculations.	Interpret data and use it to support evidence.	Explain attraction and repulsion using magnetic fields	Explain the motor effect and how some items work	Draw graphs of induced p.d. v time	Interpret complex field patterns	Relate transformer calculation to its use
			Rearrange equations in calculations	State what the generator effect is and how induced p.d. can be altered	Use Fleming's LHR	Explain power transmission losses using a calculation		
				Use the F=BIL equation	Use & rearrange F=BIL	Consistently rearrange equations in complex calculations		
AO3 Analyse and Evaluate	Evaluate basic information to develop simple arguments and explanations.	Consistently draw conclusions consistent with the available evidence.	Evaluate information to develop arguments and explanations.	Evaluate data with reference to potential sources of random and systematic error.	Evaluate the reliability of methods in detail	Draw detailed, evidence-based conclusions.	Interpret diagrams of complex electromagnetic devices to explain and compare how they work	Compare/contrast motor & generator effect, dynamos and alternators
					Interpret diagrams of how electromagnets work			Identify causes of error and uncertainty in data
AO3 Experimental Procedures	Investigate factors that affect the strength of an electromagnet	Explain the importance of sampling technique and control variables	Investigate the shape of a magnetic field including wire and solenoid	Plan an experiment and explain the importance of repeat readings	Make more complex and quantitative predictions using scientific knowledge and understanding	Plan valid and reliable experimental methods to test a hypothesis.	Explain accuracy, precision, resolution and reliability	Use all the correct scientific language throughout.