



Unit: Magnetism	<ol style="list-style-type: none"> 1. Permanent and induced magnets 2. Magnetic fields 3. Electromagnetism 	<ol style="list-style-type: none"> 4. Flemings left hand rule 5. The motor effect 6. Loud speakers 	<ol style="list-style-type: none"> 7. Induction 8. Generator effect 9. Transformers
LESSONS			
Knowledge & Skills Development	<ul style="list-style-type: none"> • Describe the attraction and repulsion between like and unlike poles for permanent magnets • Describe the difference between permanent and induced magnets • Know how to plot the magnetic field pattern of a bar magnet using a compass • Draw the magnetic field pattern of a bar magnet • Be able to explain how the behaviour of a magnetic compass is related to evidence that the Earth’s core is magnetic • Describe the factors that affect the size of a force on a conductor • Describe how the magnetic effect of a current can be demonstrated • Draw the magnetic field pattern for a straight wire carrying a current and for a solenoid • Be able to explain how a solenoid arrangement can increase the magnetic effect of a current • Describe the factors that affect the size of a force on a conductor • Explain how a moving-coil loudspeaker and headphones work • Recall the factors that affect the size of the induced potential difference/induced current 		<ul style="list-style-type: none"> • Recall the factors that affect the direction of the induced potential difference/induced current • Apply the principles of the generator effect in a given context • Explain how the generator effect is used in an alternator to generate ac and in a dynamo to generate dc • Draw/interpret graphs of potential difference generated in the coil against time • Explain how a moving-coil microphone works • Explain how the effect of an alternating current in one coil in inducing a current in another is used in transformers • Explain how the ratio of the potential differences across the two coils depends on the ratio of the number of turns on each • Calculate the current drawn from the input supply to provide a particular power output • Apply the equation linking the pds and number of turns in the two coils of a transformer to the currents and the power transfer involved, and relate these to the advantages of power transmission at high potential differences.
Assessment / Feedback Opportunities	Formative Assessment Teacher questioning Quizzes Exam style questions		Summative assessment End of topic assessment Exam questions in future end of topic assessments to assess recall
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest Induced magnet , Permanent magnet, magnetic field, poles, electromagnet, force, uniform, flux density, solenoid,		
Literacy/Reading	Subject specific vocabulary introduced before reading of related texts		

Opportunities	Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing including structuring methods, comparisons and evaluations
Cross Curricular Themes	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators
Personal Development (Including British Values, RSE, Citizenship)	None
Career Opportunities	MRI/Other instrument technicians, Maglev (magnet train) worker, Electric Technicians, Scientists