



Curriculum Overview for Physics

Year 10

<p>Half Term 1: Electromagnetism</p> <p>Substantive Knowledge:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Name the three magnetic materials <input type="checkbox"/> describe the difference between a permanent and induced magnet <input type="checkbox"/> describe the interaction between different poles of a magnet <input type="checkbox"/> describe the magnetic field around a magnet. <input type="checkbox"/> describe how a compass works. <input type="checkbox"/> Recall that $F = B \times I \times L$ <input type="checkbox"/> describe how an electric current in a wire creates a magnetic field. <input type="checkbox"/> describe a solenoid <input type="checkbox"/> describe how to increase the strength of an electromagnet. <input type="checkbox"/> describe the motor effect <input type="checkbox"/> explain how to build a motor (H) <input type="checkbox"/> explain how a speaker works. (T) <input type="checkbox"/> explain how to build a generator (T) <input type="checkbox"/> explain how microphone works (T) <input type="checkbox"/> explain the structure of a transformer (T) <input type="checkbox"/> explain how a step up and step down transformer works. (T) <p>Disciplinary Knowledge:</p> <ul style="list-style-type: none"> <input type="checkbox"/> understand how to find and draw a magnetic field around a bar magnet. <input type="checkbox"/> draw the magnetic field between two poles/plates. <input type="checkbox"/> calculate the force exerted due to an electromagnet. <input type="checkbox"/> use Fleming's right-hand rule to find the direction of force, current or magnetic field. <input type="checkbox"/> calculate the voltage or current in a step up or step down transformer (T). 		<p>Decoding of key terminology Skim reading Etymology of key terms</p>
		<p>Force, Permanent Magnet, Temporary magnet, Magnetic material, Magnetic field, Compass, Magnetic flux, Electromagnet, Solenoid, Motor effect, Left-Hand Rule, Current, Potential Difference, Electrical energy, Kinetic energy, Motor (H), Generator (T), Resistance (T), Step up Transformer (T) Step Down Transformer (T)</p>
		<p>Recall tests Review sheet End of unit test</p>
		<p>Review sheet Memorising revisions cards and preparing revision cards for every lesson</p>
<p>Half Term 2: Forces</p> <p>Substantive</p> <ul style="list-style-type: none"> • Define vectors and scalars • label the motion on a distance time graph • recall equation for speed • recall acceleration equation • label the motion on a velocity time graph • identify common forces. • Describe and identify contact and non-contact forces. • define mass and weight • recall newtons three laws • describe the method to measure the acceleration of a object when you change the mass or force on the object. • recall the definition of stopping distance • describe what affect braking and thinking distance. • describe how the time of a collision affects the force exerted. • recall the equation for momentum. <p>Disciplinary</p> <ul style="list-style-type: none"> • Calculate speed from a distance time graph • calculate acceleration from a velocity time graph • draw a force diagram • calculate the resultant force in a situation • calculate weight. • calculate the force the causes acceleration. • calculate moment of and object • calculate the momentum of an object in a collision. 		<p>Decoding of key terminology Skim reading Etymology of key terms</p>
		<p>Scalar, Vector, Speed, Velocity Acceleration, Force, Contact Force Noncontact Force, Force diagram Resultant force, Newtons laws Mass, Weight, Stopping distance Thinking distance, Braking distance Momentum (H), Collision</p>
		<p>Recall tests Review sheet End of unit test</p>
		<p>Review sheet Memorising revisions cards and preparing revision cards for every lesson</p>