**Curriculum Overview for Physics**

**Year 10**

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| **Half Term 1: Electromagnetism**  **Substantive Knowledge:**   * Name the three magnetic materials * describe the difference between a permanent and induced magnet * describe the interaction between different poles of a magnet * describe the magnetic field around a magnet. * describe how a compass works. * Recall that F = B x I x L * describe how an electric current in a wire creates a magnetic field. * describe a solenoid * describe how to increase the strength of an electromagnet. * describe the motor effect * explain how to build a motor (H) * explain how a speaker works. (T) * explain how to build a generator (T) * explain how microphone works (T) * explain the structure of a transformer (T) * explain how a step up and step down transformer works. (T)   **Disciplinary Knowledge:**   * understand how to find and draw a magnetic field around a bar magnet. * draw the magnetic field between two poles/plates. * calculate the force exerted due to an electromagnet. * use Fleming’s right-hand rule to find the direction of force, current or magnetic field. * calculate the voltage or current in a step up or step down transformer (T). | Books | Decoding of key terminology  Skim reading  Etymology of key terms |
| Speech | 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) |
| Checklist RTL | Recall tests  Review sheet  End of unit test |
| Home | Review sheet  Memorising revisions cards and preparing revision cards for every lesson |
| **Half Term 2: Forces**  **Substantive**   * 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.   **Disciplinary**   * 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. * calaulate moment of and object * calculate the momentum of an object in a collision. | Books | Decoding of key terminology  Skim reading  Etymology of key terms |
| Speech | 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 |
| Checklist RTL | Recall tests  Review sheet  End of unit test |
| Home | Review sheet  Memorising revisions cards and preparing revision cards for every lesson |