**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 terminologySkim 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 sheetEnd of unit test |
| Home | Review sheetMemorising 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 terminologySkim reading Etymology of key terms |
| Speech | Scalar, Vector, Speed, Velocity Acceleration , Force, Contact ForceNoncontact Force, Force diagramResultant force, Newtons lawsMass, Weight, Stopping distanceThinking distance, Braking distanceMomentum (H), Collision |
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