**Curriculum Overview for Physics**

**Year 10**

|  |  |  |
| --- | --- | --- |
| **Half Term 1: Matter** **Substantive Knowledge:*** define half-life.
* describe the difference between contamination and irradiation.
* Define background radiation and where it comes from.
* describe how the dosage of radiation can lead to different medical conditions.

Triple* define nuclear fission and nuclear fusion.
* describe what a chain reaction is.
* describe how nuclear power is released.
* describe the process of nuclear fusion.
* describe the issues with nuclear fission

**Disciplinary Knowledge:*** Calculate half life
* draw a half-life graph
* find the half life of a material from a radioactivity graph.
 | Books | Decoding of key terminologySkim reading Etymology of key terms |
| Speech | Alpha Beta GammaIonisationPenetrationHalf-lifeFission (T)Fusion (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: Matter****Substantive Knowledge:*** define Current, Voltage/ potential difference and resistance
* describe how to measure voltage and current
* recall the frequency and voltage of mains supply
* describe the difference between AC and DC current.
* recall symbols for the following components: Cell, Battery, wire, bulb, switch, resistor, variable resistor, LDR, Thermistor, Diode, LED, voltmeter, ammeter and motor.
* describe the difference between series and parallel circuits.
* describe voltage and current in series and parallel circuits.
* recall equation for current and charge.
* recall equation for resistance.
* describe how resistance changes for components in series and parallel.
* describe how the resistance of LDR’s, thermistors and Diodes changes.
* recall the equation for energy and power in a circuit.
* recall the equation for power, generated through resistance.
* explain how resistance leads to heating in a wire
* describe the wiring in a plug
* explain how fuses/circuit breaker and earth wires protect appliances and people.

**Disciplinary Knowledge:*** draw circuit diagram
* draw a series and parallel circuits.
* calculate the current and voltage in series and parallel circuits.
* calculate current from charge and time.
* calculate the resistance of a component or a whole circuit.
* calculate the resistance on components in series and parallel.
* calculate energy and power in a circuit.
* calculate the power, generated through resistance.
 | Books | Decoding of key terminologySkim reading Etymology of key terms |
| Speech | Current, DC current, AC current, Voltage/ potential difference, Resistance, Component, Series, Parallel, Power, Live wire, Neutral wire, Earth wire, Fuse, Circuit breaker, Circuit diagram, Electric field, Static electricity, Point charge |
| Checklist RTL | Recall tests Review sheetEnd of unit test |
| Home | Review sheetMemorising revisions cards and preparing revision cards for every lesson |