**Curriculum Overview for Physics**

**Year 10**

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| **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 terminology  Skim reading  Etymology of key terms |
| Speech | Alpha Beta Gamma  Ionisation  Penetration  Half-life  Fission (T)  Fusion (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: 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 terminology  Skim 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 |
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