**Curriculum Overview for Science**

**Year 9**

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| **Half Term 1: Future Olympian**  **Substantive Knowledge:**   * Identification of main food group * How to control body temperature * The effects of energy drinks * Explain heart rate * Describe how heart rate is affected by exercise * Describe exothermic and endothermic reactions. * Explain breathing rate and how it changes during exercise * Compare anaerobic and aerobic respiration * How respiration is affected by altitude * The effects of performance enhancing drugs in sport * How athletes alter their body to gain an advantage * Describe what makes the perfect athlete * Describe the 3 types of neurone * How drugs affect the nervous system * Explain reaction time * How MND and MS affect normal life * How we respond to sound and light * How to calculate speed * How to interpret distance-time graphs   How to interpret velocity-time graphs  **Disciplinary Knowledge:**   * Graph analysis of heart rate/distance-time graphs * Using calculations to analyse exercise * Use a variety of resources to summarise notes * Ask questions and develop a line of enquiry based on observations of the real world. * Make and record observations | Books | Skim reading  Decoding – modelled  Etymology of key terms  Syllabification |
| Speech | Healthy, Balanced, composite, ceramics, Ratios, Energy, Diet, Temperature, Homeostasis, Vasodilation, Vasoconstriction, Electrolytes, Endothermic, Exothermic Adrenaline, Caffeine, Glucose, Lungs, Reactants, Products, Respiration, Haemoglobin, Saturation, Drug testing, Athletes, Performance enhancement, Steroids, Marginal gains, synapse, Neurone, Stimulant, Reaction time, Acceleration, Deceleration, Velocity, Antidoping |
| Checklist RTL | Recall  Article comprehension task |
| Home | Preparation of revision cards for every lesson  Memorising of revision cards for recall quiz – one for each science |
| **Half Term 2: Future olympian**  **ubstantive Knowledge:**   * Identification of main food group * How to control body temperature * The effects of energy drinks * Explain heart rate * Describe how heart rate is affected by exercise * Describe exothermic and endothermic reactions. * Explain breathing rate and how it changes during exercise * Compare anaerobic and aerobic respiration * How respiration is affected by altitude * The effects of performance enhancing drugs in sport * How athletes alter their body to gain an advantage * Describe what makes the perfect athlete * Describe the 3 types of neurone * How drugs affect the nervous system * Explain reaction time * How MND and MS affect normal life * How we respond to sound and light * How to calculate speed * How to interpret distance-time graphs   How to interpret velocity-time graphs  **Disciplinary Knowledge:**   * Graph analysis of heart rate/distance-time graphs * Using calculations to analyse exercise * Use a variety of resources to summarise notes * Ask questions and develop a line of enquiry based on observations of the real world. * Make and record observations | Books | Skim reading  Decoding – modelled  Etymology of key terms  Syllabification |
| Speech | Healthy, Balanced, Ratios, Energy, Diet, Temperature, Homeostasis, Vasodilation, Vasoconstriction, Electrolytes, Endothermic, Exothermic Adrenaline, Caffeine, Glucose, Lungs, Reactants, Products, Respiration, Haemoglobin, Saturation, Drug testing, Athletes, Performance enhancement, Steroids, Marginal gains, synapse, Neurone, Stimulant, Reaction time, Acceleration, Deceleration, Velocity, Antidoping |
| Checklist RTL | Review sheet – one for each science  End of unit assessment – one for each science |
| Home | Preparation of revision cards for every lesson  Review sheet – for each science  Revision for end of unit assessment – for each science |