| Science<br><br>Year 10 | **Curriculum intent:** The Science curriculum across key stage 4 enables students to further develop their scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. It enables them to develop their understanding of the nature, processes and methods of science that help them to answer scientific questions about the world around them. This then equips them with the scientific skills required to understand the uses and implications of science today and in the future. Students studying separated sciences cover more in depth content of the same curriculum areas. | | | |
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| **Topic** | **1** | **2** | **3** | **4** |
| **Interleaving** | Key knowledge from previously studied topics | Key knowledge from previously studied topics | Key knowledge from previously studied topics | Key knowledge from previously studied topics |
| **Knowledge** | Homeostasis A<br>Rate and extent of chemical change<br>Forces | Homeostasis B<br>Organic Chemistry<br>Waves | Inheritance<br>Chemical Analysis<br>Magnets and electromagnets | Ecology<br>Chemistry of the atmosphere and Earths resources<br>Space (triple only) |
| **Understanding** | Apply knowledge in a range of different contexts.<br><br>Opportunities to include:<br><br>*Studying structure and functions of the nervous system. Investigating how different factors affect the rate of a reaction. Using Newton's laws to explain the motion of objects. Investigating the effects of forces on the acceleration of an object. Calculating work done by a force on an object.* | Apply knowledge in a range of different contexts.<br><br>Opportunities to include:<br><br>*Studying the hormonal system and how they work to control internal body conditions. Explain the link between the structure and uses of hydrocarbons. Measuring the frequency, wavelength and speed of waves. Investigate the amount of infra-red radiation absorbed or radiated by a surface.* | Apply knowledge in a range of different contexts.<br><br>Opportunities to include:<br><br>*The role of DNA in variation within species, inheritance of characteristics and how DNA can be used to study how species have evolved. Identify different gases, prepare and analyse a chromatogram. Draw the magnetic field pattern of a bar magnet, using a compass and iron filings. Explain how an electric motor works and the factors that affect it.* | Apply knowledge in a range of different contexts.<br><br>Opportunities to include:<br><br>*To study ecosystems, using a range of sampling techniques to learn how organisms interact with one another and their surrounding environment to maintain a rich biodiversity, Explain how we get potable water and deal with waste. Explain how new elements are formed during the life cycle of stars.* |
| **Skills** | Scientific Thinking<br>Experimental<br>Analysis and<br>Scientific | Scientific Thinking<br>Experimental<br>Analysis and<br>Scientific | Scientific Thinking<br>Experimental<br>Analysis and<br>Scientific | Scientific Thinking<br>Experimental<br>Analysis and<br>Scientific |
| **Assessment** | End of topic tests for all individual topics across Biology, Chemistry and Physics | End of topic tests for all individual topics across Biology, Chemistry and Physics | End of topic tests for all individual topics across Biology, Chemistry and Physics | End of topic tests for all individual topics across Biology, Chemistry and Physics |