Implementation: Curriculum Narrative

Subject: Science	*Year: 8*	*Author: MDO*

Key Knowledge *Pupils will know*	**Key Skills** *Pupils will be able to*
Key Threshold Concepts: **Building on core ideas** • **Tissues and Organs; How cells combine to make organs and the life processes of gas exchange and nutrition.** • **Pure Substances; explain the purpose of the periodic table, using ideas about elements** • **Movement;** • **Gravity: the concepts weight and the structure of the solar system** • **Electrical energy; a fundamental physical phenomenon, that can be explained with the use of ideas about energy.** • **Respiration; The life process by which living things produce energy.** • **Reactants and Products; The chemical reactions that are the basis of the study of modern chemistry.** • **Life Diversity; introducing and explaining the idea of natural selection.** • **Earth Systems: Earth Processes** • **Light: The reflection and refraction model**	**Subject Skills:** **Building on core ideas** • **Understand key scientific principles that underpin understanding of the natural world.** • **Learn key facts about science, and apply them to familiar and unfamiliar situations.** • **Understand that scientists use evidence to make judgements and assess reliability of theories.** • **Use experiments to ..** • **Develop understanding of the scientific approach to enquiry.** • **Develop knowledge and understanding of the natural world.** • **Learn how to use laboratory equipment and carry out standard procedures**

Subject Specific Knowledge and Sequencing:

- Tissues and organs, Respiration and Evolution all rely on ideas about cells that were taught in year 7. Natural selection is more conceptually demanding and is taught later in the year. This content deepens and reinforces subject knowledge of biology.
- Teaching the pure substances revisits ideas about particles, atoms and elements. Oxidation and reduction uses ideas about particles but also includes ideas about energy and chemical equations.
- Electricity is an important idea in Physics. Students will already have a working knowledge of electricity from their daily lives. This means that misconceptions about how these ideas work will commonly be present. Diagnosing and challenging these misconceptions is critical to ensure progress in understanding Physics. Movement continues to develop ideas about forces in more detail and depth.

Prerequisites and Spiral Teaching:

- An understanding of cells is critical for a good understanding of the biology topics in year 8.
- The chemistry topics use ideas about particles and energy gained in Year 7.
- Forces and Energy are powerful ideas in Physics. Students are encouraged to apply their knowledge to help broaden their understanding of physics topics studied in year 8.
- Students will continue to have misconceptions about core concepts- teachers will watch for and challenge these.

Cross-Curricular Knowledge Links:

The Year Eight Science Curriculum uses and supports knowledge from other curriculum areas. Examples of this include, but are not limited to:

- *English –subject specific vocabulary and the skills needed to decode unfamiliar words.*
- *Maths – The use of calculations and graphs to process and explain data.*
- *Technology – the properties of materials and the understanding and explanation of forces.*

Teachers will take every opportunity to link learning to students' everyday experiences, and support them in making decisions that have an impact on their lives. An example of this would be a detailed understanding of electrical safety, linking to health and safety in the workplace, or respiration as used in sports science

Reading Lists / Sources / Reading around the subject recommendations:

A good resource to use is BBC Bitesize (https://www.bbc.com/bitesize/levels/z4kw2hv). It has activities, videos and quizzes on all the ideas studied in Year 8.