Rationale

Our Science curriculum is designed with a forward-thinking approach that embraces the breadth of the national curriculum while remaining rooted in real-world applications. Beginning with the White Rose Science pathway, our curriculum emphasizes a small-step, multi-sensory approach that fills knowledge gaps and supports mastery through repetition and retrieval. As pupils progress, they engage in practical applications, hands-on investigations, and modern scientific contexts, with an emphasis on understanding the environment and humanity's impact on it. The curriculum aims to make science exciting and relevant, equipping pupils with essential knowledge and skills for the challenges of the 21st century.

Curriculum Phases

Our Science curriculum is structured into four progressive phases:

- Phase 1: Emphasis on understanding life sciences basics, physical properties, and early experimental skills, covering units on plants, rocks, forces, and skeletons.
- Phase 2: Builds upon the fundamentals with a focus on materials, life cycles, earth sciences, and an introduction to environmental issues like plastic pollution and global warming.
- Phase 3: Expands to more complex topics, including chemistry, energy, waves, and an introduction to forensic science, encouraging pupils to apply scientific methods and critical thinking.
- Phase 4: Prepares pupils for advanced study, covering biology, chemistry, and physics concepts that align with GCSE expectations. Topics include genetics, environmental science, chemical reactions, and physics of energy and waves.

Enrichment

Pupils participate in outdoor learning experiences, science-based trips, and hands-on projects, such as observing local ecosystems or designing experiments to test environmental impact. These experiences aim to foster a deeper connection to science and its role in understanding and preserving the natural world.

Science - Curriculum Overiew

Phase 1 - Summer Term

In the final term, pupils study the human skeleton and basic animal structures, learning about movement, protection, and growth. The term ends with simple experiments in light and shadows, introducing pupils to the basics of physical science.

Phase 2 - Autumn Term

The year begins with an in-depth look at materials and their properties, alongside an introduction to electricity and simple circuits. Pupils learn through hands-on activities that make abstract concepts more tangible and memorable.

Phase 3 - Summer Term

Forensic science is introduced, where pupils learn basic investigative techniques and apply scientific methods to solve mock "cases."

Topics include fingerprinting, analysing simple chemical reactions, and understanding the role of science in crime-solving.

Phase 4 - Autumn Term

This term focuses on biology, including cells, genetics, and inheritance, giving pupils foundational knowledge in advanced biological topics. Pupils also study ecosystems and environmental impact, understanding complex interactions within nature.

Phase 1 - Spring Term

This term focuses on materials, examining their properties and uses. Pupils also explore basic earth science concepts, including rocks and soil types, fostering curiosity about the natural world and its composition.

Phase 2 - Spring Term

Pupils explore life cycles and growth patterns, covering both plants and animals. This term includes environmental science topics like plastic pollution, promoting awareness of human impact on the planet.

Phase 3 - Spring Term

Pupils delve into energy, waves, and sound, covering how energy is transferred and used. This term also introduces forces and magnets, fostering a practical understanding of physical science through experimentation and real-world examples.

Phase 4 - Spring Term

Pupils explore advanced chemistry topics, such as reactions, acids, and alkalis. Physics topics include forces and motion, along with an introduction to simple mechanics, laying the groundwork for GCSE-level study.

Phase 1 - Autumn Term

Pupils are introduced to the basics of life sciences, exploring plants, their life cycles, and how they grow. This term also covers forces, with simple experiments to demonstrate push and pull, setting the stage for understanding physical interactions.

Phase 2 - Summer Term

The focus shifts to earth sciences, with units on weather patterns, seasons, and basic climate understanding. Pupils also study habitats and ecosystems, fostering respect for biodiversity and environmental preservation.

Phase 3 - Autumn Term

The term introduces more complex chemistry concepts, including states of matter and simple chemical reactions. Pupils engage in experiments to observe physical changes, learning to distinguish between reversible and irreversible reactions.

Phase 4 - Summer Term

The year concludes with physics concepts, covering energy transformations, waves, and light. The curriculum also includes a unit on earth science and climate change, tying together environmental themes and preparing pupils for higher-level scientific inquiry.