Belvedere Infant and Junior Schools

Science Curriculum Rationale

At **Belvedere Infant and Junior Schools**, we aim to grow children's *science capital* through enquiry-based opportunities and hands-on experiences. We promote the importance of science and scientific advancement in the 21st century, encouraging our young scientists to think about how science contributes to the world's future prosperity.

We believe it is vital that children are given opportunities to make meaningful links between classroom learning and the real world. Using the five types of scientific enquiry alongside our school's rich environment, online resources, the local area and educational visits linked with the Pioneer Passport**,** children are immersed in science and encouraged to ask questions, test ideas and reflect on their knowledge.

Our curriculum develops independent scientists who understand important scientific ideas, processes and skills, and who can relate these to their everyday lives. We foster a culture of curiosity, collaboration and critical thinking so that all children are inspired to explore the world around them and see themselves as capable scientists.

Science is celebrated through our annual Science Week, which immerses children in STEM (science, technology, engineering and maths) learning through investigations, workshops and exciting whole-school projects.

Science in the Early Years

In the Early Years Foundation Stage (EYFS)**,** science is taught through the area of learning called *Understanding the World: The Natural World*. Learning is play-based, practical and exploratory, taking place indoors and outdoors. Children:

- Recognise similarities and differences in places, objects, materials and living things.
- Talk about their immediate environment and compare it with others.
- Observe animals and plants, notice changes, and ask simple questions about why things happen.

Activities include planting, seasonal observations, minibeast hunts, exploring the mud kitchen, and harvesting herbs and vegetables. These experiences build the foundations for scientific enquiry.

Science in Key Stage 1

During Years 1 and 2, pupils are taught to use the following scientific methods, processes and skills through the programme of study content:

- Asking simple questions and recognising that they can be answered in different ways.
- Observing closely, using simple equipment.
- Performing simple tests.
- Identifying and classifying.
- Using observations and ideas to suggest answers to questions.
- Gathering and recording data to help in answering questions.

Science is taught through the **International Primary Curriculum (IPC)**, which ensures progression and broad coverage. A new unit begins with a class discussion to review prior knowledge before moving into practical activities and investigations. At the end of the unit, children reflect on their learning and celebrate what they have discovered.

Recording learning varies according to age and ability. This may include written explanations, diagrams, charts, graphs, models and oral presentations.

Science in Key Stage 2

As pupils progress into Key Stage 2, knowledge deepens and children are challenged to think scientifically with greater independence. They explore concepts across biology, chemistry and physics, including animals and plants, forces, materials, space, human biology and evolution.

Through the IPC, children are encouraged to develop their skills in:

- Planning different types of enquiries to answer questions.
- Taking accurate measurements using a range of scientific equipment.
- Recording data in a variety of ways, including scientific diagrams, classification keys, tables and graphs.
- Using results to draw conclusions, make predictions and suggest improvements.
- Reporting findings in oral and written forms, using scientific vocabulary.

By the time pupils leave Year 6, they will have a secure understanding of scientific ideas and be well prepared for the challenges of secondary science.

Teaching and Learning Approach

- Science is taught as a **block of work** linked to the half-termly IPC topic.
- Each lesson includes opportunities to recall and revisit prior knowledge.
- Children engage in enquiry through investigations, group discussions, observations and research.
- Lessons finish with a reflection activity, helping children to consolidate and apply what they have learned.

The way Science is recorded varies depending on pupil ability and the lesson content, and may include reports, instructions, charts, graphs, annotated diagrams or models.

Inclusion and Adaptation

We provide an inclusive Science curriculum by scaffolding learning to support all pupils, while also stretching the most able. Teachers use formative assessment to establish what children already know and to plan tasks that build on this knowledge.

Challenge is provided through open-ended questioning, opportunities for deep thinking and problem-solving, and presenting information that encourages children to re-think their assumptions.
Pupils with additional needs are supported with differentiated resources, structured tasks and smaller learning steps, ensuring every child can achieve.

Assessment

Teachers assess pupils' science work against the **Science Learning Questions** in the IPC to track understanding and progression. Assessment is ongoing and informs future planning. Strategies include:

- Starter and reflection quizzes.
- Teacher observations.
- Use of questioning.
- Marking of work in science books.
- End-of-unit quizzes that develop cumulatively over the topic.

KS2 National Curriculum Aims for Science

By the end of Year 6, the national curriculum expects pupils to:

- Develop scientific knowledge and conceptual understanding across biology, chemistry and physics.
- Understand the nature, processes and methods of science through different types of enquiries.
- Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.