



The Spire Federation - Science Curriculum Intent, Implementation & Impact

Curriculum Intent:

At The Spire Federation, we aim to develop the natural curiosity of our children and enable them to build the skills required to allow them to increase their knowledge and understanding of the world around them. Our teaching of science, alongside our Church School Values, aims to nurture positive attitudes and respect for the living and non-living world.

The curriculum is designed to ensure that children are able to acquire key scientific knowledge through practical experiences; using equipment, conducting experiments, building arguments and explaining concepts confidently.

Children are encouraged to ask questions and be curious about their surroundings and a love of science is nurtured through a whole school ethos and a varied science curriculum.

We used Cornerstones Curriculum 22 to deliver our science curriculum. The names of the science projects are matched to the national curriculum aspects, for example, Living things and their habitats and Earth and space. However, in Key Stage 1, the aspect of Animals, including humans has been separated so that children study humans before expanding to explore animals.

The science projects are sequenced to develop both children's substantive and declarative knowledge, and if possible, make meaningful links to other projects. For example, in Year 3, the projects Plant Nutrition and Reproduction and Light and Shadows are taught alongside the design and technology project Greenhouse and the art and design project Beautiful Botanicals. These links allow for children to embed their substantive knowledge in new and often real-life contexts.

The sequencing of projects ensures that children have the substantive knowledge and vocabulary to comprehend subsequent

projects fully. Each project's place in the year has also been carefully considered. For example, projects that involve growing plants or observing animals are positioned at a suitable time of year to give children the best possible opportunity to make first-hand observations. Within all the science projects, disciplinary knowledge is embedded within substantive content.

Curriculum Implementation:

Science lessons will often involve we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom.

Teachers use precise questioning in class to test conceptual knowledge and skills.

As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.

Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.



Knowledge Organisers are used to support pupils' learning.

Curriculum Impact:

The successful approach to teaching science within the Spire Federation will result in a fun, engaging high quality science education that will provide our children with the foundations for understanding the world around them. This can be carried forward as they transition into secondary school, allowing them to be successful scientists.

Children at the Spire Federation will:

- demonstrate a love of science work and an interest in further study and work in this field
- retain knowledge that is pertinent to science with a real life context.
- be able to question ideas and reflect on knowledge.
- be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich language linked to science.
- demonstrate a high love of mathematical skills through their work, organising, recording and interpreting results.
- work collaboratively and practically to investigate and experiment.

Progress of our science curriculum is demonstrated through outcomes and teacher assessment information is recorded on the progress tracker available on Cornerstones.

Pupil voice is obtained to inform practice and celebrate achievements.

Our Golden Threads are interwoven through our science curriculum:

- **Diversity Drivers** - Understanding and respecting relationships between individuals and communities, understanding of the world and values, beliefs and experiences.
- **Wellbeing Warriors** - Mental, physical and emotional well-being.
- **Planet Protectors** - Care for the environment and sustainability

