Science at Spire Junior School
Curriculum Statement

Intent of the Science Curriculum

The central aim of our school curriculum is to develop the whole child and shape their minds for positive learning experiences about the world around them. We strongly believe in encouraging curiosity, exploration and developing a strong sense of self-identity.

In Science, our curriculum aims to develop a curiosity about out universe and how living and non-living things survive. We believe that through working scientifically, children develop key skills needed to carry out investigations via practical experiences and develop their key knowledge that has been identified within a unit and across each year group.

The key knowledge identified for each year group is informed by the National Curriculum and 'Knowledge Maps' for each science topic, for each year group. This ensures that learning is sequential and progressive throughout the school.

The school's approach to science takes account of the school's own context and ensures that the children have access to expert opportunities. Cross curricular opportunities are also identified, mapped and planned to ensure cross-curricular links are made between subjects. Children are encouraged to ask questions and develop love of science through an exciting Science curriculum.

The national curriculum aims that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Our intentions are:

- To provide our children with skills-based and knowledge-rich experiences linked to Science, Engineering, Technology and Maths (STEM subjects)

Science at Spire Junior School

Curriculum Statement

- To develop a love of science learning within our pupils, with an appreciation of how much science impacts on everyday life.
- To engage pupils as learners at many levels through linking ideas with practical experience.
- To ensure our children use scientific vocabulary correctly and purposefully to enhance their language and learning.
- To help pupils to learn to question and discuss scientific issues that may affect their own lives.
- To help pupils develop their 'working scientifically' skills in order for them to ask, action and evaluate their own enquiries.
- To promote a healthy lifestyle in our pupils.
- To broaden the children's understanding of science through visits, use of the outdoors and visitors to school from STEM backgrounds.

Implementation of the Science Curriculum

Our curriculum at Spire is carefully planned and organised so as to promote a deep understanding of the projects and concepts that we cover through quality first teaching. We do this by equipping our pupils with the skills and qualities they need to thrive both within the curriculum and within the wider-world.

When implementing our science curriculum, we ensure that Science is planned and arranged into relevant topic blocks. This ensures that the teaching of science is coherently planned and progressive. Science is covered in class weekly to develop depth of knowledge and promote progress. Existing knowledge is checked at the beginning of each topic using pre-tests. This ensures that we can cover the gaps throughout the topic. We build upon the knowledge and skills covered in the previous years so pupils can apply what they already know.

At Spire Junior School, we are always aiming to improve our children's use of vocabulary and broaden their understanding of words. Therefore, through our teaching, Knowledge Mats and activities, our Science teaching aims to constantly improve our children's understanding of scientific vocabulary. To aid this further, science lessons make use of a short scientific texts, news extracts or vocabulary tasks to embed understanding.

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Curriculum Statement

As the children's knowledge increases, they become more confident in using Scientific equipment and their ability to set up, carry out and evaluate their experiments- this develops their Working Scientifically Skills.

At Spire Junior School, the children study science weekly covering a broad and balanced scientific curriculum. Within these daily lessons, children are exposed to key vocabulary- vocabulary from the previous lesson and vocabulary linking to the current lesson, a range of activities (including activities from Explorify) and carry out experiments where necessary.

The children's love of science is developed by yearly events such as 'Science Week' and the Royal Institution of Science workshop days which we have been successful in applying for. During Science Week, the class teachers plan a 2 week writing project linking to Scientific writing. Some of these events also include the wider community and parents.

At the end of each topic, the children's progress is re-assessed via the 'End of Topic' tests and their progress is monitored.

There are clear links between the Science, Technology, Engineering and Maths (STEM) subjects, and this is promoted within school in lessons and through visits and visitors. To develop further links between Science and Maths, children are given opportunities to read, respond to and generate questions about a range of data. This aims to develop their data handling and number skills. The school iPads are used within science for recording and data purposes, as well as to conduct research.

Impact of the Science Curriculum

We are confident our curriculum is successful in the teaching and learning of science through a variety of monitoring and feedback activities which have taken place through school.

Class teachers assess their pupil's understanding of topics at the beginning and end of each unit. This data informs us of the progress that the pupil's make throughout the topic. This is recorded on the 'Staff Share' so is accessible to all staff with ease.

In addition, staff are also asked to assess their children's ability to 'Work Scientifically' and the progressive Working Scientifically Skills for each year group are inputted- the

teachers place their pupils next to the relevant key stage objectives that they think they are achieving at 3 points in the year.

On a whole, most children make good levels of progress between their pre-topic and end of topic tests. This demonstrates that the science teaching across the school is consistent and is accessible for all pupils.

Having conducted a pupil voice in the Autumn term, it is reasonable to summarise that the majority of the pupils at Spire Junior School thoroughly enjoy their weekly science lessons- this is because from the sample who completed the student voice, all of them said that they either enjoyed their science lessons some of the time or all the time. In addition to this, the pupils from the sample suggested that they usually learnt through a range of activities, demonstrating that the science teaching is engaging for all. Many of the sample mentioned that the thing they enjoyed most in their science lessons was completing experiments.

An area of focus that was raised from the student voice was their understanding of whether they were making progress in science despite their tests being recorded in their books.