CURRICULUM VISION STATEMENT: SCIENCE

St George's Mission Statement
Inspired by Gospel Values
And called to the fullness of life.
To learn and grow through faith, love, and laughter.
To be the best we can,
Showing Christ's love in all we do.

Introduced	September 2023
Date of last review	Jan 2024
Date of next review	September 2024
Reviewed by	SLT

Curriculum Vision Statement: Science

Intent:

Our Core Curriculum of Science supports all children in achieving and in many cases succeeding in their academic and personal development. It meets the statutory requirements of NC 2014 and is embedded securely and consistently across the school. We ensure that the content is coherently planned and sequenced logically and made relevant and purposeful and that it is delivered in an inspiring and innovative way. The school values the enrichment to learning experiences which the Science Curriculum brings to the children and as such, much time is spent collaborating on planning and sharing subject knowledge and expertise to ensure that the Science curriculum is not only relevant, engaging and memorable but that it also ensures that children are able to make informed choices based upon scientific investigation and challenge ideas by testing theories.

Implementation:

At St George's the teaching and learning of Science focuses on enabling children to think as scientists.

We have used the best research to create a well sequenced and progressive curriculum map containing the key concepts children need to be procedurally fluent in, to work, think and write like scientists.

Science at St. George's is about developing children's ideas and ways of working that enable them to make sense in the world in which they live through investigation, as well as using and applying process skills.

Aims of our Science Curriculum

- Engage children as learners at many levels through linking ideas with practical experience;
- Help children to learn to question and discuss scientific issues that may affect their own lives;
- Help children develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought;
- Show children how major scientific ideas contribute to technological change and how these impact on improving the quality of our everyday lives;

- Help children recognise the cultural significance of science and trace its development
- To increase the child's knowledge and understanding of the world.
- To develop attitudes of curiosity, originality, co-operation, perseverance, open mindedness, self-criticism, responsibility and independence in thinking.
- To enable children to effectively and confidently communicate their scientific predictions and discoveries as they are given the opportunity to observe, describe, illustrate, hypothesise, evaluate and interpret, using appropriate scientific vocabulary.
- To develop children' understanding of the effects of their actions on the environment.

Teaching Styles

KS1

Wherever possible the children are provided with activities based on first-hand experience that encourage exploration, observation, problem solving, prediction, critical thinking, decision making and discussion. We provide an environment with a wide range of indoor and outdoor experiences that stimulate their interest and curiosity.

At St. George's children are provided with a broad range of opportunities and experiences in science, enabling them to work towards their Early Learning Goals.

At St. George's children develop their understanding of the world around them on a daily basis, using their senses to explore and learn about objects and materials. Children are given holistic learning experiences, incorporating elements of science in their everyday activities.

KS2

At St. George's children learn about a wider range of living things, materials and physical phenomena. They make links between ideas and explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources including ICT in their work. They talk about their work and its significances, using a wide range of scientific language, conventional diagrams, charts, graphs and ICT to communicate their ideas.

At St. George's the KS2 curriculum follows the National Curriculum, ensuring all areas of the Programme of Study are covered across Years 3, 4, 5 and 6. Children learn, explore and ask questions about a wider range of living things, materials and physical phenomena. Children think about the impact of scientific developments and technologies on themselves and the world around them.

At St. George's children are encouraged to develop an independent approach to their science learning, through asking questions, suggesting improvements to their work and supporting each other towards achieving a heightened understanding of scientific concepts.

'Working scientifically' is promoted across KS2 with children being given the opportunity to plan, carry out and evaluate experiments. Children are encouraged to develop their own methods for presenting their ideas (to include drawings, diagrams, use of ICT, tables and charts.)

Reading across the curriculum

In order to develop children's reading skills, our teachers plan opportunities for children to independently read age-appropriate texts that link to science topics being studied. We have invested in supporting our science topics with new books for each topic studied. Studies show that if children encounter new knowledge within a narrative, they are more likely to retain that knowledge.

Writing across the curriculum

We develop skills of research and note taking and to present findings in a variety of ways such as in written, oral or pictorial form as well as using ICT. We are developing the children's skills of writing as a scientist by providing opportunities for children to write explanations and scientific write-ups using key scientific headings including: predictions, hypothesis, results and suggestions on how to improve the investigation. This will support children in discrete subjects once they move up to KS3. As with writing in all subjects at St George's, children have access to a large bank of scientific vocabulary which is recorded in a vocabulary book and children are supported through shared, modelled and guided writing.

Impact:

We have used teachers' knowledge of the whole curriculum to create a well sequenced and progressive curriculum map containing the key concepts children need to be procedurally fluent in to work and think like professional scientists.

We ensure progression in the following key concepts:

- Conceptual understanding
- Processes
- Skills of enquiry
- Scientific attitudes

- *From using everyday language to increasingly precise use of technical, scientific vocabulary;*
- *From personal scientific knowledge in a few areas to understanding in a wider range of areas and knowing how these link together;*
- *From describing events and phenomena;*
- *From explaining phenomena in terms of their own ideas, to explaining phenomena in terms of scientifically accepted ideas or models;*
- *From participating in adult lead practical, scientific investigations to developing and undertaking their own scientific investigations, independently;*
- *From unstructured exploration to more systematic investigation of a question or questions developed independently;*
- *From using simple drawings, diagrams and charts to represent and communicate scientific information, to using more conventional diagrams and graphs.*