What do we intend?

What Science looks like in our school:.

- Exciting science topics to provide children with the opportunity to explore and investigate the world around them.
- All science topics are explored in each year group to ensure that children are experiencing all areas of science year on year.
- A variety of activities which take place inside and outside of the classroom to engage children about the world around them.
- Investigations/practical exploration with the children being able to plan, record, carry out and conclude their learning.
- Opportunities to work individually, in pairs or groups.
- A range of scientific resources to enable the children to carry out engaging experiments.
- Subject specific vocabulary which is focused upon at the start of each topic and is then embedded within each lesson.
- Different aspects of science are focused upon: physics, chemistry, and biology.
- Use of a range of media to help the children to learn about the world and space.
- Learning about the achievements of famous scientists.
- Opportunities for children to talk about their observations and discoveries using scientific vocabulary.

This is our philosophy:

- Children learning through exploring different topics whilst acquiring new skills.
- Using the children's understanding as a starting point.
- Making links to the world around us.
- High quality modelling of scientific skills and techniques.
- Promoting the use of the scientific method to extend learning.
- Cross-curricular links where possible.
- To foster a healthy curiosity in our children and a passion for science.

This is the knowledge and understanding gained at each stage:

By the end of EYFS pupils will:

Understanding the World: The Natural World

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.

connect	sequence	change	replace	reduce	compare	add	arrange	classify	assemble

- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
- Children know about similarities and differences in relation to places, objects, materials and living things
- Children talk about the features of their own immediate environment and how environments might vary from one another

By the end of Key Stage 1 pupils will:

• Experience and observe phenomena, looking more closely at the natural and humanly constructed world around them.
• Develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions.
• Begin to use simple scientific language to talk about what they have found out.
• Mostly use first-hand practical experiences, but also appropriate secondary sources, such as books, photographs, and videos.
• Read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

By the end of Key Stage 2 pupils will:

• Develop a deeper understanding of a wide range of scientific ideas and begin to recognise that these change over time.
• Select the most appropriate ways to answer science questions using different types of scientific enquiry.
• Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to first, to talk about and, later, to write about what they have found out.
• Read, spell and pronounce scientific vocabulary correctly.

How will we implement it?

Each class has different scientific skills and knowledge to focus on in a rolling 2-year programme

- Science is taught in the EYFS as an integral part of the topic work covered throughout the year. Children are encouraged to explore and investigate independently during continuous provision.
- All children in Y1-6 receive a minimum of 1 hours quality Science teaching a week.
- Knowledge and understanding are taught in blocks with a new topic each term/half term and scientific experiments are carried out each half term.
- A Science weeks are used to cover other areas of science and enable children to make links and build their science knowledge year on year.
- Where possible links are made with other subjects to enrich learning.
- There are regular practical sessions where children have opportunities to develop their investigative skills.
- Lessons incorporate the use of technology where appropriate.
- Pre-teaching of scientific vocabulary takes place so it can be used in the following lessons.

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- Purposeful displays support current learning which include vocabulary and reflect progression in learning.
- A range of engaging resources enable the children to carry out exciting experiments to deepen their learning and develop their understanding of the
- concept that is being taught.
- There are opportunities for paired, group and class discussion and debate to consolidate learning.
- Children learn about the achievements and contributions of key scientists from the past and modern times.

This is what adults do:

- Plan exciting progressive lessons which build on prior knowledge.
- Support, encourage and nurture a love of Science.
- Create a learning environment that supports learning and engages children's interest in the topic being studied.
- Use Bloom's questioning in class to assess conceptual knowledge and skills and allow pupils to develop strategies for questioning and thinking.
- Demonstrate how to use scientific equipment, and the various 'Working Scientifically' skills in order to embed scientific understanding.
- Book scrutiny, pupil meetings and planning audits.
- Whole school professional development.

This is how we support:

- We use teacher and self-assessment to quickly identify any child who requires additional support in specific areas.
- Differentiated ability tasks enabling children to progress at their own pace.
- We celebrate individual pupil progress in their learning journey.
- We make cross curricular links whenever possible.
- Provide visual and practical prompts.

This is how we challenge:

- Lessons will be differentiated.
- Additional activities/targets to stretch the learning within the lesson.
- Activities with alternative/extended discussion points.

This is how ensure all children can access the curriculum:

- Children who have SEN needs are taught key vocabulary prior to/at the start of the topic.
- Seating children alongside good role models to support one another.
- More frequent repetition and revisiting to help make it stick.
- By providing visual/practical prompts.
- Teaching lessons using a range of different techniques to appeal to different learning styles e.g. videos, interactive websites, drama, artefacts, texts etc. All children at St. George's will get the opportunity to go on various trips to develop local, regional and global geography experiences.
- Links with other areas of the curriculum are embraced to provide a more meaningful learning experience.
- Lessons may be taught discreetly or as a block of lessons.

How will we know it is working?

This is what you might typically see:

- Engagement and perseverance from all learners.
- Children practising and applying knowledge to different situations.
- Happy, confident, and independent learners.
- Children posing their own questions and hypothesis for investigation
- Children working cooperatively in paired/group work.
- A classroom environment with displays including vocabulary, to support learning.
- Children discussing, reflecting and sharing their learning.

This is how we know how well our pupils are doing:

- Use of assessment at the start and end of each topic enables progress in knowledge and understanding and working scientifically to be monitored.
- Lessons are planned with children's prior knowledge/assessed level known to ensure progression.
- Teachers assess the individual progress of a child against the learning objective for the lessons/units of work.
- At the end of the year, the teacher makes a summary judgement about the work of each child in relation to the National Curriculum 2014

- These are reported to parents as part of the child's annual school report.
- Next step marking and feedback by teacher and peers.
- Displays of work around school.
- Book scrutiny, pupil meetings and planning audits.
- Use of surveys and questionnaires (pupils and staff).
- Regularly monitoring of the standards of children's work and the quality of teaching and learning in lessons.

This is the impact of the teaching:

- Children who are confident talking about science.
- Children who enjoy their learning in science.
- Inquisitive learners who make observations and ask questions.
- Pupils develop detailed knowledge and skills in science and achieve well.
- Children who know more and remember more.
- Pupils use acquired vocabulary in science lessons.
- Children who have the scientific skills to investigate independently and show resilience when tackling problems.
- Reflective learners.
- Children will be ready for the next stage in their education. Pupils with SEND will achieve the best possible outcomes.
- Children who are inspired by the achievements of scientists.
- Pupils with an awareness for our world and beyond. They know about different ways that science can be used to support their future potential.