Science Endpoints
End of EYFS Children will be able to: **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. • 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
End of Key stage 1 Children will be able to: • Experience and observe phenomena, looking more closely at the natural and humanly constructed world around them • Be encouraged to be curious and ask questions about what they notice • Develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information • Use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science will be done through the use of first-hand practical experiences, but there will also be some use of appropriate secondary sources, such as books, photographs and videos • 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 their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.
End of Lower Key Stage 2 Children will be able to: • Broaden their scientific view of the world around them • Explore, talk about, test and develop ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions • Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information • Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests

- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

End of Upper Key Stage 2

Children will be able to:

- Develop a deeper understanding of a wide range of scientific ideas
- Exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically
- Encountering more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates
- Recognise that scientific ideas change and develop over time
- Select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information
- Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings
- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

Children will leave St George's as scientists who:

- See themselves as scientists or engineers rather than passively observing
- Recognise that their daily lives are shaped by science – managing our health or understanding the need to recycle etc
- Have a healthy skepticism – learners who ask challenging questions as they explore the world and form their own opinions
- Ask questions, collect information, organize and test ideas, solve problems
- Apply what they learn

- Make greater sense of their world, increasingly shaped by science and technology
- Develop the ability to communicate scientifically

connect	sequence	change	replace	reduce	compare	add	arrange	classify	assemble