Sedlescombe Church of England Primary School

Science Policy 2023 - 2026

Adopted	November 2023
Review Cycle	Three Years
Review Date	Academic Year 2025 - 2026

Sedlescombe Vision and Values

Motto:

Learning, Loving and Growing Together with God

Values:

Aspiration	**Honesty**	**Forgiveness**
Courage	**Thankfulness**	**Kindness**

Vision:

Our school is a family with God at its heart.
Christian values guide and inform all that we do.

We aim to:

- **Provide a welcoming, safe and nurturing environment where everyone is able to learn and grow as a unique individual.**
- **Encourage and support each other to be ambitious, resilient and independent lifelong learners.**
- **Develop enquiring minds and a love of learning.**
- **Value everyone and celebrate their beliefs, achievements, skills and contributions.**
- **Provide a curriculum that is creative, exciting, challenging and takes learning beyond the classroom.**
- **Reach the highest standards in achievement and attainment.**
- **Create a learning community where everyone is nurtured and challenged to develop academically, personally, morally and spiritually.**
- **Support each other to develop the skills, attitudes and values to grow into responsible members of our global community and God's world.**

INTRODUCTION

Children are naturally fascinated by everything in the world around them. They learn by playing with things in their world. They pick up clues about what they see, touch, smell, taste and hear in order to makes sense of it all. Eventually they come to conclusions which they match up with all the experiences they have had. As with many primary subjects, a child's interest and enjoyment of science is shaped before they leave primary school and whilst not all children will follow a career in science or related disciplines when they leave the school system, science literacy will influence their daily lives: for example by managing their health and understanding issues such as climate change. This means that science taught in primary schools is of vital importance to individuals and the nation's well-being.

INTENT

Science Vision Statement

At Sedlescombe Church of England Primary School, we believe that, as teachers of science, we can help children to take a deeper look at the world and build on their naturally occurring fascination with it. Through science, we hope to inspire children to understand the world they live in.

Values

Our school values are mirrored throughout the scientific world. Aspiration, courage and honesty are at the heart of those that have questioned, explored and discovered. To be a global citizen, to feel a sense of belonging, to be creative and curious we must share these values that Sedlescombe school holds at its core.

Enquiring Minds

How would the world, and our understanding of it, progress without enquiring minds? How would Man have landed on the moon if it weren't for someone enquiring; "Could we….?" To be a scientist is to have an enquiring mind. We are born naturally curious and science taps into this natural curiosity, sparking enquiry in all of us.

Rich Texts

How can new discoveries be shared on a global scale? How can new learning take place without the recording of these discoveries? Written word and rich texts are fundamental to science; from scientific journals, to non-fiction books and biographies. The power of a rich text to spark interest and excitement and to help us learn and discover is vital to teaching and learning within science.

Curiosity

Curiosity is the foundation of science. Without curiosity, humans would never have discovered how the world works. We would never have learnt how to make fire, learnt about gravity or created vaccines. It is through being curious that we can learn about our planet and make future discoveries that will change the way we live and think.

Global Citizens

If we are to be scientists, we must be global citizens. The future of our planet has never depended on humanity working together as much as it does now. Through science, we can research the work of scientists around the world, we can explore our local environment to learn

about habitats and eco systems and we can discover the importance of the global community.

Creativity

To be a scientist, one must learn to think in a creative way. To discover the unknown we must challenge what we perceive to be true and explore new opportunities for learning. To raise new questions and to regard old problems from a different angle requires creative imagination and it is how progress in science is made.

Belonging

History is made of important scientists, throughout the world, that have changed the way in which we know and understand our planet and the things that live on it. To understand and celebrate science we must celebrate scientists and the many different backgrounds they come from. We all, every one of us, belong within the scientific community and it is important we can see ourselves within it so that we can feel that belonging.

Curriculum Aims

The National Curriculum 2014 for Science aims to ensure 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.

Objectives:

At Sedlescombe we believe that the skills of working scientifically should not just be taught once, discreetly but should be a continuous and evolving part of every science lesson.

In Key Stage 1, all pupils will develop their skills of working scientifically by being taught to:

- ask simple questions and recognise that they can be answered in different ways
- observe closely, using simple equipment
- perform simple tests
- identify and classify
- use their observations and ideas to suggest answers to questions
- gather and record data to help in answering questions.

I addition to this, the pupils will also cover these objectives:

Year 1 Programme of Study:

- Plants
- Animals, including humans
- Everyday materials
- Seasonal Changes

Year 2 Programme of Study:

- Living things and their habitats
- Plants
- Animals, including humans
- Uses of everyday materials

In Lower Key Stage 2, all pupils will develop their skills of working scientifically by being taught to:

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gather, record, classify and present data in a variety of ways to help in answering questions
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- use straightforward scientific evidence to answer questions or to support their findings.

In addition to this, the pupils will also cover these objectives:

Year 3 Programme of Study:

- Plants
- Animals, including humans
- Rocks
- Light
- Forces and Magnets

Year 4 Programme of Study:

- Living things and their habitats
- Animals, including humans
- States of matter
- Sound
- Electricity

In Upper Key Stage 2, all pupils will develop their skills of working scientifically by being taught to:

- plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- use test results to make predictions to set up further comparative and fair tests
- report 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
- identify scientific evidence that has been used to support or refute ideas or arguments.

In addition to this, the pupils will also cover these objectives:

Year 5 Programme of Study:

- Living things and their habitats
- Animals, including humans
- Properties and changes of materials
- Earth and space
- Forces

Year 6 Programme of Study:

- Living things and their habitats
- Animals including humans
- Evolution and Inheritance
- Light
- Electricity

IMPLEMENTATION

Science Principles

"I have not failed 10,000 times. I have successfully found 10,000 ways that will not work."

Thomas Edison

At Sedlescombe, we nurture scientific attitudes such as curiosity, asking questions and hands-on learning to promote and foster resilience to continually trying new ways and methods to find the answer. Scientific knowledge is a journey of enquiry and we aim to inspire children to want to come on that journey with us.

Science Planning Cycle

At Sedlescombe science coverage is mapped out on a whole school curriculum map, which teachers will follow for their planning. We follow a curiosity based approach to our learning. As such, each science module sets out to answer an enquiry based question. The teachers must use the Essential knowledge in the curriculum map, alongside the National Curriculum objectives (substantive knowledge), in order to teach what the children need to know, to answer this enquiry based question. Whenever possible, science lessons are to be taught through an investigative approach. However, to ensure that all the Working Scientifically Objectives are met, it is also expected that children should partake in at least one Science Investigation per term. Ideas for investigations can be found under disciplinary knowledge for each term in the Curriculum map.

Science will be covered in each term as follows:

Year 1					
Term 1 **What changes Occur in each Season?**	**Term 2**	**Term 3** **What did Donald Palmer do for Science?**	**Term 4** **Do all Plants have the same parts?**	**Term 5** **Do all animals have the same parts?**	**Term 6** **Are all materials the same?**
Seasonal Changes Working Scientifically		Working Scientifically	Plants Working Scientifically	Animals, including humans Working Scientifically	Everyday materials Working Scientifically

Year 2					
Term 1	**Term 2** **How are animals adapted to their habitats?**	**Term 3** **What did Mark Richards do for Science?**	**Term 4** **What do plants need for healthy growth?**	**Term 5** **What do animals need for a healthy life?**	**Term 6** **What is the best use for different materials?**
	Living things and their habitats Working Scientifically	Working Scientifically	Plants Working Scientifically	Animals, including humans Working Scientifically	Use of Everyday materials Working Scientifically

Year 3					
Term 1 **Are skeletons all the same?**	**Term 2** **What did Harry Badeshia do for Science?**	**Term 3** **How do magnets work?**	**Term 4** **How do plants grow?**	**Term 5** **What happens in the absence of light?**	**Term 6** **What is a rock?**

Animals, including humans Working Scientifically	Working Scientifically	Forces and magnets Working Scientifically	Plants Working Scientifically	Light Working Scientifically	Rocks Working Scientifically

Year 4					
Term 1 **What happens if habitats change?**	**Term 2** **How does the human body work?**	**Term 3** **How have humans harnessed the power of electricity?**	**Term 4** **What did Charlotte Armah do for science?**	**Term 5** **What can influence state of matter?**	**Term 6** **What is sound?**
Living things and their habitats Working Scientifically	Animals, including humans Working Scientifically	Electricity Working Scientifically	Working Scientifically	Materials: States of Matter Working Scientifically	Sound Working Scientifically

Year 5					
Term 1 **How do living things reproduce?**	**Term 2** **Can all materials be separated?**	**Term 3** **How do objects move?**	**Term 4** **How do planets move in space?**	**Term 5** **How do we change as we get older?**	**Term 6** **What did Maggie Aderin-Pocock do for science?**
Living things and their habitats Working Scientifically	Materials: properties and changes of materials Working Scientifically	Forces Working Scientifically	Earth and Space Working Scientifically	Animals, including humans Working Scientifically	Working Scientifically

Year 6					
Term 1 **How are living things classified?**	**Term 2** **What's inside the human body?**	**Term 3** **Where do we come from?**	**Term 4** **What did Mah Hussain-Gambles do for science?**	**Term 5** **Does light move?**	**Term 6** **How can electricity be manipulated?**
Living things and their habitats Working Scientifically	Animals, including humans Working Scientifically	Evolution and Inheritecne Working Scientifically	Working Scientifically	Light Working Scientifically	Electricity Working Scientifically

Special Educational Needs and Disabilities

As a school we are committed to providing all children with learning opportunities to engage in science. Science is accessible to all children and opportunities are provided to develop the investigative potential of every child, regardless of gender, ethnic origin, social and cultural background, religion or disability. Teaching strategies will take into account the individual needs of every child and children with SEND will be supported, where appropriate, with differentiated materials, tools and tasks.

Pupils with SEND often find designing investigations problematic. A variety of recording methods need to be offered to ensure pupils can access and produce successful initial investigation ideas. Some children may require one to one support during physical investigation tasks, but it is important to encourage working independently. Children could be supported with developing independence by using key word mats, flow charts and visual instruction sheets.

Equal Opportunities

At Sedlescombe, we are committed to providing a teaching environment which ensures all children are provided with the same learning opportunities regardless of social class, gender, culture, race, special educational need or disability. Teachers use a range of strategies to ensure inclusion and also to maintain a positive ethos where children demonstrate positive attitudes towards others.

Support for specific individuals is well considered and planned for, with consideration given to how greater depth and further challenge can be provided for and demonstrated by children who require further challenge.

Health and Safety

It is essential that class teachers ensure the health and safety of children at all times. Learning in Science does, at times, have some risks associated due to the nature of the materials and tools the children may need to use. Therefore, when working in Science there needs to be:

- Careful selection of materials and equipment to ensure that it is appropriate to the age of the children and that there are appropriate supervision levels.
- Consideration given to the organisation of the work area within the classroom to ensure that children can complete tasks with enough space and without endangering each other.
- Clear demonstration of techniques and safe practice which is the basis of good health and safety practice.
- A curriculum risk assessment completed.

Additional support and advice on safety can be found on the CLEAPPS website. The link to the website is: http://primary.cleapss.org.uk/Resources/Doing-Things-Safely/

IMPACT

Assessment Recording and Reporting

Assessment is used to inform planning. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made.

Formative Assessment

Formative assessment should be used within lessons to assess children's understanding and to adapt and change teaching to meet the needs of the children in the class.

Formative assessment will also inform the skills and knowledge that need to be developed in subsequent science teaching, to ensure that gaps in knowledge and skills are addressed and children make progress over time.

Summative Assessment

It is really important to track children's progress and attainment against the National Curriculum objectives.

Children's attainment is formally tracked 3 times a year (term 2, term 4 and term 6), through the completion of standardised tests. Children will gain a score that indicates if they are working at an emerging level, expected standard or greater depth.

This summative assessment will build up a profile of the strengths and areas to develop for each child as they progress through the school. This developing profile can be used to inform planning and teaching and to offer children additional support and challenge they need in their next project.

Monitoring

Monitoring will be undertaken by Subject Leaders in line with the Subject Leadership Policy and where the subject is in the review cycle.

In addition to this the Subject Leader will monitor outcomes and teaching and learning in science in the following ways.

At the end of each term, the Subject Leader will meet with a small group of children to discuss their learning using the following cycle:

Term 1	**Term 2**	**Term 3**	**Term 4**	**Term 5**	**Term 6**
Year 1 and Year 6	Year 2 and Year 5	Year 3 and Year 4	Year 1 and Year 6	Year 2 and Year 5	Year 3 and Year 4

The Subject Leader will use the Topic Tests from HeadStart Primary Science to assess children's understanding of the key learning and vocabulary and will then feed back to the class teacher on the aspects that have been developed well within the subject as shown by the children's understanding and what areas of development have arisen based on the children's responses. This feedback is developmental and will support all teachers to provide high quality science teaching.

Review

Science will be reviewed in line with the review cycle in the Subject Leadership Policy, but at least every three years. More information can be sound in the Subject Leadership Policy which is available in the policies section of the school website and on the school server.