



## Through God We Achieve

### OUR VISION AT ST. STEPHEN'S CE PRIMARY SCHOOL

To deliver outstanding education in a caring community, with God at its centre

**'Turning your ear to wisdom and applying your heart to understanding'. Proverbs 2:2**

### OUR VALUES:

**Joy** - we provide a happy and stimulating environment, rooted in Christian values.

**Excellence** - we are a church school committed to the highest standards in everything we do.

**Relationship** – we work hand-in-hand with St. Stephen's Church as well as our parents and carers.

**Respect** - we enable our children to deepen or realise their own faith and respect the freedom of others in their beliefs.

**Nurture** – our children are cared for spiritually, morally, intellectually, physically, socially and emotionally.

## SCIENCE POLICY

Action	Policy to be reviewed as required and at least annually		
	Owner	Date	Completed
Updated	Marion Kelly/Louise Wordsworth	September 2022	
Next Review	Marion Kelly/Louise Wordsworth	September 2023	
Approved	Michael Schumm and SLT		

## **Our Intent:**

### **Rationale**

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life in the 21st century. We, at St. Stephen's CE School believe that the teaching of Science develops in children an interest and curiosity about the world in which they live, and respect for the environment.

Through Science, pupils understand how major scientific ideas contribute toward technological change – impacting on industry, medicine, business, environmental issues and improving quality of life. They learn to question and discuss science based issues that may affect their own lives, the directions of society and the future of the world.

### **Aims & Objectives**

Following the recommendations set out in the National Curriculum for Science and the EYFS Framework in the Foundation Stage, St. Stephen's School aims to:

- develop an interest and enthusiasm for Science.
- help students acquire a knowledge of a range of scientific concepts.
- enable pupils to develop an understanding and respect for the natural world.
- develop the skills required to investigate the world around them – questioning, testing and discovering.
- help children understand that scientific evidence can be obtained in a variety of ways.
- enable pupils to make decisions about the uses and values of scientific work and achievements.
- relate and link Science to other areas of the curriculum.
- communicate and relate Science to everyday life and develop these experiences through scientific investigations.
- teach children how to communicate their ideas effectively.
- introduce children to a range of inspiring scientists from around the world, both past and present, who helped to shape our world.

### **Leadership and Management Roles**

The Science co-ordinators are responsible for ensuring that the aims of the Science Policy are met. In addition, the Science co-ordinators should:

- be enthusiastic about Science and demonstrate good practice.
- encourage and support staff in the implementation of the curriculum and school approaches to Science teaching.
- help co-ordinate assessment procedures and record keeping to ensure progression and development throughout the school.

- monitor the teaching and learning of Science throughout the school including the Scientist-in-Residence, appointed in 2021 to run specialist science groups across the school.
- organise and review all science-based resources, ensuring they are readily available and maintained.
- support staff by encouraging the sharing of ideas and organising in-service training as appropriate.

## **Implementation:**

### **Approaches to Teaching and Learning**

St. Stephen's School looks to integrate practical Science whenever possible, making learning engaging and fun. Activities will develop the SC1 Working Scientifically enquiry skills through encouraging students to predict, hypothesise, collect evidence, analyse and question the results they gather and evaluate from what they have learnt. We use a variety of teaching and learning styles in Science lessons including:

- individual work
- co-operative group work
- whole class activities
- teacher led discussions and demonstrations
- observations, investigations and exploration
- practical activities giving first-hand experience
- opportunities to use different media and data handling packages.

Photos of practical activities from each investigation is provided as evidence.

In Science lessons the group size will be determined by the task, age and ability of each pupil. Children are encouraged to work co-operatively and given a role to fulfil in order to give their work purpose and focus. Open-ended tasks are set that can have a variety of results.

Teachers draw attention and celebrate good examples of learning within the class. We encourage the children to evaluate their work as well as the work of other children.

### **Science in EYFS**

Exploring 'The Natural World' enables St. Stephens's youngest learners to 'work scientifically' both within their physical world and their community. Within a secure and stimulating environment with effective guidance and support, children can discover, observe, investigate and experiment as they explore and make sense of the natural world around them. Building curiosity and creating personal experiences increases even the youngest of our learners to build their knowledge and understanding of the world around them. The EYFS strand 'The Natural World' leads directly to scientific elements of the curriculum and leads to more formalised Science learning in KS1 and then KS2.

## **Planning**

At St. Stephen's CE Primary School we plan in half termly units. These plans identify the topic to be covered relating specifically to the QCA schemes of work. The areas of study are outlined by the National Curriculum and have been divided and allocated to Year groups, with specific content to cover. These are outlined on a long term plan, allowing an overview of the progression of Science teaching throughout the school.

Weekly plans identify specific learning objectives for each session, incorporating SC1 objectives where relevant, and details of appropriately differentiated activities, resources and learning outcomes.

## **Continuity & Progression**

The teaching in KS1 builds upon the Early Learning Goals achieved at the end of the Foundation Stage. Our units of work for each year follow the progressive sequence of key scientific teaching and learning outlined in the National Curriculum. Therefore, taught skills, knowledge and understanding are built upon, unit on unit, year on year. We recognise that our curriculum planning must allow for children to gain a progressively deeper level of knowledge, understanding and skill competency as they move throughout the school. Investigative skills that develop children's ability to work scientifically are fostered throughout all scientific learning.

## **Monitoring and Review**

The Science co-ordinators are responsible for monitoring the standards of children's work and the quality of teaching. Teaching and learning is monitored through lesson observations, learning walks and book looks. Following observations feedback is given to individual teachers and patterns may be used to inform the Science School Improvement Plan (SIP) indicating areas for improvement.

The co-ordinators support colleagues in the teaching of Science by addressing CPD needs and by giving them information about current developments in the subject.

## **Assessment**

All lessons have clear learning objectives which are shared and reviewed with the pupils. Teacher assessments are carried out as part of every classroom activity and is a continuous process, supported through the school's marking and assessment policy. Assessments are monitored by the Science co-ordinators, inform planning and close gaps in learning.

Learning journals and Tapestry map progress against Early Learning Outcomes for pupils in Reception. In KS1 & KS2 teachers continually assess against statements on Target Tracker and record an assessment for Science at the end of each half term.

Children's progress is continually monitored against the learning objectives set and tracked throughout their time at St. Stephen's School by the following:

- Observing children at work in their investigations, individually, in pairs, in a group, and in classes.
- Questioning, talking and listening to children.
- Considering work/materials/investigations produced by the children together with further discussion with them.
- Through the setting of EUQs (End of Unit Quizzes) at the end of each topic.

Progress and achievement in Science is reported to parents through termly parent meetings and end of year reports.

### **Resources**

There are a wide range of resources to support the teaching of Science across the school. The school has bought into the PlanBee scheme of work with lesson plans, presentations and worksheets on each topic area. This is used as a starting point for planning with links to further useful resources shared on each topic Knowledge Page. The school also subscribes to Twinkl with a wide range of lesson plans and resources.

Resource boxes linked to the themes of the 'QCA Science Topics' are kept in individual classes. General shared resources are kept in a central location in the Science Room. The Science leads are responsible for the overall storage and maintenance of the resources. Any resources borrowed from the central store should be cared for appropriately, stored sensibly and returned in good condition.

### **Impact:**

Through the teaching of Science, children gain knowledge and awareness of the world around them. By regularly timetabling Science each week the pupils' achievement can progress and be regularly monitored and assessed.

The special sessions each class receives with the Scientist-in-Residence helps to raise the subject's profile within our School. In addition, we engage in national events and develop children's understanding through carefully selected Science trips.

All children should leave St. Stephen's not only with the appropriate age related knowledge linked to the Science curriculum but also with skills which equip them to progress within their lives. By the end of Year 6 children should:

- be able to question ideas and reflect on knowledge with a richer vocabulary
- work collaboratively and practically to investigate and experiment
- have high aspirations which will equip them through to further study, work and adult life

### **Enrichment opportunities**

At our school, we offer a wide range of enrichment opportunities to support and develop pupils. We aim to do this by:

- inviting parents/external speakers working in STEM to lead workshops to inspire learning
- continuing to forge links with local secondary schools such as St Pauls Girls School
- running our school Eco-Committee, made up of school councillors which was recently awarded an Eco-Schools Green Flag Award accreditation for their 'fantastic achievements' in tackling climate change
- researching and raising awareness of local and national Science initiatives that the school and families can engage with such as brainstorming sessions at the Royal Observatory, Greenwich
- providing Science after school clubs for KS1 & KS2 run by our Scientist-in-Residence, a Gardening club and the recommendation of at least one Science/Maths related trip per class each year
- timetabling Scientist-in-Residence sessions across the school to give children the opportunity to delve deeper into their Science topics in smaller groups
- displaying Science boards in the hall and in classrooms to emphasize and raise the importance of Science in the school
- making Science magazines and resources available to explore in the school library and classrooms

### **Equal Opportunities and Inclusion**

St. Stephen's is an inclusive school. It is important for all children to experience a range of scientific activities in ways that are appropriate to their needs and abilities. We actively seek to remove the barriers to learning and participation that can hinder or exclude individual pupils or groups of pupils. Where appropriate, work is adapted to meet pupils' needs and, if required, extra support given. More able pupils are given suitably challenging activities. Gender and cultural differences are reflected positively in the teaching materials used.

Pupil Premium children are identified and invited to attend Science clubs/trips funded by the School.

Teachers are supplied with links and profiles related to class Science topics celebrating the work of inspiring scientists from around the world e.g. space scientist Dr Maggie Aderin-Pocock MBE. Black Voices Week in October 2021 explored the achievements of BAME scientists, engineers and inventors which inspired and engaged our students in the world of STEM.

### **Safety**

Activities are planned with regard to our Health & Safety policy. When working with tools, equipment and materials in practical activities and in different environments, pupils are taught how to recognise hazards and use equipment safely taking steps to control risks to themselves and others.

Reviewed: September 2022

To be reviewed: September 2023