

# Sir John Lillie Primary School

## Science Policy



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### INTRODUCTION

For young children science is an introduction to the world of living things, materials and energy. It is a largely practical subject that develops a spirit of enquiry by encouraging curiosity and reason. Scientists have revealed vast amounts of knowledge about our world by using the skills of observation, prediction, investigation and interpretation. Each child needs to enjoy the experiences associated with science by increasing and developing their knowledge and by starting to use the skills associated with scientific methods of investigation. Working with others, learning how to persevere and learning how to ask questions are attitudes that encourage work to be carried out in a scientific way.

### AIMS

We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching science include:

- Building on children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-criticism, perseverance and responsibility.
- Preparing children for life in an increasingly highly scientific and technological world.
- Fostering concern about and appreciation of our environment.
- Building children's self-confidence to enable them to work independently and develop their social skills to work cooperatively with others.
- Helping children acquire a progressive understanding of scientific ideas.
- Helping children acquire practical scientific skills.
- Providing children with an enjoyable experience of science, so that they will develop a deep and lasting interest and be motivated to study science further.

### OBJECTIVES

Each child will:

- 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
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Each child will undertake scientific activities each half term throughout Early Years, Key Stages 1 and Key Stage 2.

The orders for science have been broken down into units of work and, where possible, linked to class topics. These units of work have been set out in the School's curriculum map in association with the new Science Curriculum, used in both key Stages. The new curriculum can be used as a guide for coverage but teachers are encouraged to develop each unit

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through child-centred learning and adapt to the interests, needs and previous experiences of their class. In addition, at year 6, the children will have revision sessions in the spring term, which offer opportunities to recall and extend work from the previous year's programs.

### **ROLES AND RESPONSIBILITIES**

There are a number of persons responsible for the teaching of Science in SJL. These are the Science Team, the Teaching Staff, the Senior Leadership Team, the Headteacher and the Governing body. Each member of staff undergoes an induction when they start work at SJL, during this their roles and responsibilities are explained in detail. For additional information about roles and responsibilities please refer to the individual job descriptions as well as the induction manual.

### **TEACHING STRATEGIES AND PLANNING**

It is important that the teacher identifies the most appropriate strategy to suit the purpose of a particular learning situation. SJL has a tradition of encouraging learning through investigation, with an emphasis on first-hand experiences. At SJL we provide opportunities for children to use different types of scientific enquiry during science lessons such as:

- Comparative & fair testing
- Identifying, classifying & grouping
- Observing over time
- Pattern seeking
- Researching and using secondary sources

Extra focus has been placed on enquiry-based learning during science lessons with the children encouraged to ask questions relating to their science topic. This process allows the children to have more of an impact in the planning and delivering of science lessons.

### **IN THE CLASSROOM**

Teachers should look for opportunities to praise co-operation and safe, considerate behaviour. Children are asked to work as individuals, in pairs, in groups and also as a whole class when appropriate. Children are encouraged to use a variety of means for communicating and recording their work. Participating as a speaker and a listener has a high profile at SJL.

### **ICT**

Information technology, including computers, Interactive whiteboards, tablets and cameras play an important role in developing communication and data handling skills. At key stage 2 each child will have access to a computer for data handling and for interpreting results and findings, e.g. personal data base recordings of their growth and observations related to living things around the school.

### **LITERACY**

On top of the weekly science lessons each class completes, it is also recommended that teachers use a variety of text sources to consolidate children's learning and understanding of their termly topics. This can be done as groups or whole class during guided reading sessions. This process can also be used as a way for children to cover various outcomes of previous years' topics.

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### EQUAL OPPORTUNITIES AND SPECIAL NEEDS

Every effort is made to ensure that science activities and investigations are equally interesting for all pupils regardless, of gender, race or disability. Children with special needs are involved in all work, planned at an appropriate level, which will help each child to reach their full potential. Teachers' weekly plans show how the activities have been adapted or extended for children of different abilities. For more information on equal opportunities and special education needs, please refer to SJL's "Equal Opportunities" and "Special Education Needs" policies.

### WHOLE SCHOOL ANNUAL EVENTS

#### Science Week

We are committed to providing an annual week involving all pupils. The week enables pupils from all year groups to work collaboratively. We actively encourage parental support and participation in these activities.

### RECORD KEEPING AND ASSESSMENT

#### Record Keeping

Pupils work is recorded in a number of ways:

- **Learning Journals:** Each child from Year 1 onwards has a green Learning Journal where science work is recorded. This is to be used for individual work only. Each year cohort to ensure that at least 2 pieces of individual work are completed in Learning Journals every half term.
- **Science Wall:** Each class is to have a Science Wall that displays the science drivers, scientific vocabulary related to current topic and working scientifically skills. This may also feature children's work as whole class, groups or individuals. These are to be changed half termly to reflect the new science focus topic.
- **Working Scientifically:** Working scientifically outcomes are recorded by teacher observations based on children's participation in investigations. This is ongoing throughout the year.
- **Target Tracker:** Each teacher is to assess pupils' knowledge and *working scientifically skills* each term and enter their judgements onto Target Tracker.

#### Assessment

Assessments are made based on Target Tracker statements which are derived from the National Curriculum objectives and ensure broad coverage of all areas. Children are also assessed in 'Working Scientifically' over the year. Children are levelled once each term and these levels are put onto SIMs. In addition, teachers level children on completion of each unit and make notes on their strengths and weaknesses; this form is passed to the next year group for tracking and information purposes.

### SCIENCE CURRICULUM ENRICHMENT

We believe pupils should be enthused and excited by science. Hence, we aspire to provide them with opportunities to participate in extra-curricular activities, e.g. science-focused trips, after school science club and workshops delivered by outside agencies.

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### **EARLY YEARS FOUNDATION STAGE**

Science is taught at SJL from the Nursery onwards. We encourage young children to think scientifically by providing hands-on activities with the capacity to excite, provide enjoyment and to foster a child's natural curiosity in exploration and investigation. Pupils' scientific skills are displayed through Characteristics of Learning and Early Years' Outcomes.

### **SAFETY AND CARE**

The safe use of equipment is promoted at all times. The ASE safety policy has been adopted by the staff and spare copies can be found in the staffroom. The School's Health and Safety policy should be consulted for details regarding the use of electrical equipment, wet areas, heavy equipment and the use of tools. Any animals, including insects, being used for study should be treated with the greatest respect and care and returned to their natural habitat as soon as the activity is complete. Leaves and berries of a poisonous nature or nuts should be avoided in the classroom displays and the dangers made clear to children.

### **FACILITIES AND RESOURCES**

We aim to ensure that there are sufficient resources available for all science teaching units in the school. Resources are kept either in individual classrooms or in cupboards in the Art room. It is the role of the Curriculum Co-ordinator to liaise with each year group to ensure that there are sufficient resources available and source new ones from the annual Science budget. Pupils are also encouraged to choose from a range of equipment when designing investigations and will be trained in the considerate and safe use of all resources. Planning in advance for the upcoming term will assist teachers in organising investigations and potential offsite learning experiences. Science team also attend network meetings and organise worthwhile partnerships with other schools and institutes within the borough to assist with student progress and attainment and to develop staff confidence with teaching lessons.