



**ST. OSWALD'S**  
C of E ACADEMY

# Science Policy

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<b>APPROVED:</b>	<b>DATE:</b>
<b>SIGNED:</b>	<b>ROLE: CHAIR OF GOVERNORS</b>
<b>TO BE REVIEWED:</b>	

***Our Mission Statement:***

*We aim to provide a high quality of education for all, recognising everyone's value and worth, helping them to achieve their full potential, and sharing the love of God made known through Jesus Christ.*

## **Policy Statement**

Science is a core subject within the National Curriculum. This policy outlines the purpose, nature and management of Science taught at St Oswald's Academy. It reflects the consensus views of all the teaching staff and they are responsible for its implementation. This policy should be read in conjunction with the New Curriculum 2014 documentation which sets out in detail what pupils will be taught in different year groups as of September 2014.

## **Aims**

At St Oswald's, we believe that Science is essentially an exploration of the world around us through investigation, incorporating the study of the physical world from observations, physical experiments, research and working scientifically.

Science focuses emphasis on investigation involving prediction, observation, testing and evaluation. We believe that it is good practice for children to be encouraged to actively learn, by developing their own investigations based on studies presented by the teacher, and those formed from their own ideas. As they progress through school, these ideas will be increasingly founded in scientific knowledge and understanding.

We aim:

- to develop the natural curiosity of children about the world around them
- to develop questioning and enquiring minds through a range of enjoyable and interesting experiences
- to help children develop the skills to make systematic enquiries
- to enable children to develop an increasing attention to accuracy
- to foster a positive, inclusive attitude towards Science and increase pupils' understanding of the role of Science globally.

## **Teaching and Learning**

Our principal aim is to help develop children's knowledge, skills and understanding. Sometimes we do this through whole class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. Children will have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. Children will use ICT in science lessons where it enhances their learning. Children will take part in discussions and present reports to the rest of the class. They engage in a wide variety of problem solving activities. Wherever possible we involve the pupils in 'real' scientific activities.

Pupils will be encouraged to develop the skills of:

- Exploring and observing at first hand using all their senses
- Communicating scientific ideas orally, in writing and diagrammatically

- Raising questions
- Collecting data
- Planning investigations
- Interpreting scientific data
- Predicting
- Fair testing
- Explain using scientific knowledge
- Problem solving
- Explaining and using scientific terminology
- Evaluating
- Drawing conclusions
- Accurate measuring.

### **The Approach to Investigations**

Each child will plan, take part in and report on an investigation at least once every half term, during each unit of work. The format for these investigations will be progressively systematic. By the end of Key Stage 2, children should be more independent in planning and carrying out these investigations, dependent on ability.

### **Leadership Roles**

The subject leader is responsible for:

- understanding the requirements of the subject order
- preparing policy documents and curriculum plans
- encouraging staff to provide effective learning opportunities for all pupils
- helping colleagues to develop their subject expertise
- collecting and auditing practical resources
- ensuring common standards and formats for recording and assessment
- liaising with other subject leads
- communicating all developments in the subject, e.g. through staff meetings, distributing information, using notice boards
- organising and monitoring professional development in the subject
- producing annual development plans including costings and priorities which can help inform the school development plan
- liaising with relevant organisations regarding the subject, e.g. advisory teachers, inspectors, QCA, libraries.

### **Class teachers**

The class teacher is responsible for understanding the requirements of the curriculum in their year group and where it belongs to the curriculum as a whole and timetabling sessions to ensure that the relevant sections of the Scheme of Work are covered during each half term, using pre and post-teaching assessments. They are also responsible for seeking to develop their own subject knowledge and understanding, liaising with the subject lead where appropriate.

Teachers will use a balance of:

- teacher-prepared materials
- published resources
- practical tasks
- visitors, e.g., parents, experts, etc
- educational visits
- occasional homework tasks.

The classroom teacher is also responsible for monitoring the progress of the children in their class and reporting this on a termly basis via Arbor, discussing areas of development with the subject leader where appropriate.

### **Entitlement**

The school's provision for science education is in line with the standing order for Science Education within the National Curriculum. The curriculum is delivered based around Curriculum 2014. The following specific programmes of study must be taught during Key Stages 1 or 2.

- Scientific Enquiry (Sc1)
- Life and Living Processes (Sc2)
- Materials (Sc3)
- Physical Processes (Sc4)

At St Oswald's Academy, it is expected that Science is taught for one and a half hours per week in KS1 and two hours per week in KS2.

### **Planning**

Planning in Years 1 to 6 is based around the NC objectives for each subject area. There are in-house Schemes of Work available to guide staff through units of learning, with corresponding Knowledge Organisers. Items on the SOW may be replaced with others as long as they fit with the objectives and do not impact negatively on the progression of the subject through school by moving activities from one year to another. Investigation ideas are available via the Cornerstones Love to Investigate resources. Long-term planning should ensure that the yearly objectives are delivered via the most appropriate Cornerstones topics studied each academic year, by consulting the Long Term Planning document.

### **Early Years Foundation Stage**

Science is repeatedly revisited in EYFS as an integral part of the topic work covered during the year, relating the scientific aspect of the children's work to the objectives set out in the Early Learning Goals included in Understanding the World.

### **Assessment and Recording**

Assessment is in line with the school's Assessment Policy. Assessment opportunities are included in the study of each unit of work.

#### *Formative Assessment (short-term)*

Assessment is carried out informally during teaching. It enables the teacher to identify a child's understanding and progress, to inform their immediate teaching and to plan for their coming lessons. This can take the form of:

- small group discussions in the context of a practical task
- specific assignments for individual children
- individual discussions with children to evaluate progress and to set new targets
- evaluation of written work.

#### *Medium-term assessment*

The achievements of pupils are measured via pre and post-teaching assessments and judgements are logged on Arbor. Termly reviews of progress are made in line with school assessment policy.

#### *Summative assessment (long-term)*

Teachers use their own assessment to give each child a Science level at the end of the year. This information is recorded on Arbor.

Parents are informed of the pupil's progress during parents' meetings and in the end of year reports.

### **Cross-Curricular Links**

As far as possible, the Science curriculum will provide opportunities to establish links with other curriculum areas.

#### English:

At Key Stage 1, the pupils are encouraged to use their speaking and listening skills to describe what they see and explain what they are going to do next. At Key Stage 2 the pupils are encouraged to also develop their skills of writing to record their planning, what they observe and what they found out. The children develop their written skills by writing reports in science. Science-based texts are sometimes used in English lessons and in guided reading sessions.

#### Maths:

At both Key Stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In Science, they should be applying their maths skills at levels similar to those which they are using in their maths work. Mathematical skills such as weighing objects and measuring are an important part of a Science lesson. Where appropriate, children record their findings using charts, tables and graphs.

#### Information and Communications Technology:

At both Key Stages the pupils will use ICT to:

- Locate and research information (internet)
- Record findings (using text, data and tables)
- Gain confidence in using calculators and ipads.

Each classroom is fitted with a Prowise board, enabling the teacher to use video clips and demonstration programmes to enrich lessons.

When ICT is used in Science lessons, before every lesson the class teacher will remind children about how to use the internet safely. They will monitor and report e-safety incidents in line with the AUP (Acceptable Use Policy).

Spiritual development:

Spiritual development is encouraged through reminding pupils of the wonder of science and the effect of scientific discoveries on the modern world. Topical scientific issues are also discussed as appropriate.

Personal, Social and Health Education (including RSE):

Health education is taught as part of the units on ourselves, health and growing, teeth and eating, moving and growing, keeping healthy and life cycles. It is also linked to becoming a global citizen. RSE is taught as the physical aspects of reproduction, with the emotional aspect being taught sensitively alongside this via the PSHE curriculum in conjunction with the School Nursing Team.

Sustainability:

Sustainability forms an integral and vital part of the science curriculum. Within the scheme of work, individual units naturally lend themselves to developing the children's knowledge, understanding, concern and care for the environment. There are many resources within our school grounds which allow effective teaching of environmental science, including our wild area and outdoor classroom.

As part of teaching about the environment, every encouragement is given to the children to apply the principles of energy efficiency, water conservation, waste reduction and recycling and litter control. Recycling is actively encouraged throughout the school and every classroom has paper recycling facilities. Additionally, there are many opportunities within science and other areas for children to learn about the choices they have and the impact that they can make on their environment.

### **Equipment and Resources**

The subject lead carries out an annual audit of the resources and reorders any consumables when necessary. New resources can be purchased through negotiation between class teacher and subject lead, within the amount allocated in the annual budget.

### **Health and Safety**

The school's Health & Safety Policy outlines the safe codes of practice for our school and provides the necessary guidance on the response and the reporting of all incidents. Children are encouraged to assess hazards and discuss the appropriate precautions.

Children are taught the appropriate safe practice when using equipment. This will include:

- how to use equipment correctly and in accordance with health and safety guidelines
- to behave in a considerate and responsible manner, showing respect for other people and the environment whilst on trips outside the classroom.

A Risk Assessment will be completed for any educational visit.