

# Science Policy



**Named personnel with designated responsibility:**

Academic year	Head teacher	Assistant Heads	School Business Manager	Chair of Governors
2020/2021	Mrs R Hocking	Mrs S Leaver & Mrs K McCall	Mrs R Taylor	Mrs L Gray

**Policy review dates**

Review Date	Changes made	By whom	Date Shared
November 2020		K Grey	

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### **Rationale**

Science is an important core subject in our school as it provides the foundations for understanding the world. Through building key knowledge, concepts and skills, pupils should be encouraged to develop a sense of excitement and curiosity about the world around them. They should be encouraged to explain what is occurring through conceptual models and practical activities that progressively build a deep understanding of the science curriculum and 'Working Scientifically'. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

### **Aims and Objectives**

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding of science
- 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

At Swalwell Primary School our aim is to enthuse, develop and challenge pupils through an engaging and progressively structured science curriculum and teaching approaches where pupils:

- Generate their own scientific questions
- Plan and conduct their own investigations
- Develop a secure knowledge of science models
- develop an enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- build a curiosity and sense of awe of the natural world
- use the language and vocabulary of science
- are encouraged to live a healthy lifestyle
- apply maths and computing skills within their scientific work

### **How we teach Science**

Within our school, Science is taught by individual class teachers using a variety of teaching methods. Science regularly involves the children in practical work through small group activities/whole class activities. Teaching methods include whole class teaching, experimental learning, discovery methods, problem solving, open ended investigations, or a mixture of these. At Swalwell we believe that children should be taught Scientific knowledge and facts, but with a focus on applying this knowledge into skills-based activities and enquiries.

To support our key principles, we deliver this curriculum through:

- A skills-focussed approach to teaching that ensures an appropriate and flexible challenge within the classroom. This approach is called 'dual objective planning'.
- Conceptual threads called 'science models' that link topics and support progressively deeper learning. There are four science models that span the curriculum.
  - The energy transfer model
  - The forces model
  - The particle model
  - The bigger picture model
- Five key science skills that support both knowledge / conceptual development and Working Scientifically to match pupil performance to national Key Stage expectations.

### **The National Curriculum**

Science is planned by class teachers inline with the National Curriculum 2014. Science is taught in strands and may be linked with other curriculum topics where appropriate. As a result of topic-based planning, Science strands may be taught at different points of the year throughout the two-year curriculum cycle. This is to be decided by each class teacher.

### **Science in EYFS**

The Foundation Stage deliver science content through the 'Understanding of the World' strand of the EYFS curriculum.

In the Early Years children are given opportunities to:

- become immersed in an environment rich in opportunities to explore how the world works
- encounter creatures, people, plants and objects in their natural environments and in real life situations
- develop a curiosity and ask questions about the world around them
- work with adults to find the answers to these questions
- undertake practical investigations and experiments

### **Teaching Science to children with SEN**

All children should have access to a broad balanced curriculum, including Science, which enables them to make the greatest progress possible. Learning and the schools expectations are matched to the individual needs of those with barriers to learning. These take into account individual targets to help children access the curriculum at their own pace so that appropriate challenge and progress can be made.

### **Fieldwork (visits/visitors)**

At Swalwell, we recognise the value of educational visits and visitors in enhancing learning. We aim to provide opportunities for children from EYFS, KS1 and KS2 to learn about Science in a range of settings and with experts in the field.

## Assessment

### Science assessment

#### Teacher Tracking Data

Science assessment is on-going and formative. It happens in the classroom as part of the normal teaching process. It informs lesson pitch, differentiated intervention and future planning. The key document to support this process is the Science Assessment Board which provides criteria matched to year group expectation.

In the Foundation Stage we assess children's knowledge and understanding according to the EYFS Learning and Development Stages.

Assessment techniques may include: observations of pupils at work/questioning, pupils' discussions or oral presentations of their work, pupils' written, pictorial or graphical work and structured activities.

Children receive effective feedback through teacher assessment, both orally and through written feedback and are given time each lesson to respond to this feedback.

#### School Tracking Data

Science assessment will fit in with the schools assessment procedures. School tracking in science will involve a half-termly pupil assessment against year group expectation set out in the National Curriculum and Gateshead Assessment Framework.

#### Maintaining Standards

Science teaching will work to ensure pupils reach a security of year group expectation according to school targets. These standards will be maintained by:

- Consistency of approach through the teaching of models and dual objective planning.
- Standardisation of assessment using a Science Standards File, collaborative marking, update training and science coordinator attendance at regional science network meetings.
- Science coordinator monitoring of science teaching and learning, and subsequent teacher support

## **Monitoring and Evaluation**

To ensure consistency of expectation and approach across school, the Science coordinator will:

- conduct termly book looks
- conduct termly pupil voice and staff voice
- analyse and monitor data from each year group
- respond to patterns in data by implementing additional CPD opportunities of reviewing planning
- Review and support teachers in planning
- Conduct an annual summary of Science in which strengths and weaknesses in the subject are evaluated

## **The Role of the Science Co-ordinator**

- To review changes to the National Curriculum requirements and advise on their implementation
- Attend relevant CPD courses for Science as appropriate in line with the School Development plan
- Support staff through providing staff meetings and CPD opportunities
- Carry out an annual audit of the school's Science resources and operate an efficient storage system for these resources
- Monitor teaching and learning and set new priorities for development of Science in subsequent years.
- Take a lead role in organizing Science Events in school in line with LA and national initiatives.
- Endeavour to involve parents/ carers in their children's learning in and through science.