



Dringhouses Primary School

Science Policy

Signature of Chair of Governors

Signature of Headteacher

Date of Adoption: **Spring term 2018**

Date of Review: **Spring term 2021**

Reviewing Committee: **Standards & Effectiveness Committee**

Statutory / **Non-Statutory**

SCIENCE POLICY

Rationale

At Dringhouses children develop an enthusiasm for and enjoyment of science through a range of engaging and hands on activities. Their knowledge and understanding of important scientific ideas are developed, along with key processes and skills. Children are taught different ways of thinking, how to find things out and how to communicate their ideas effectively. We endeavour to make lessons thought provoking and inspiring, leading children to wonder, ask questions, research and then discuss their learning at home. Ultimately we aspire to ensure the children become successful, confident learners, enjoying the process of exploring values and ideas through science.

Aims

We aim 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 in teaching science

- To develop pupils' curiosity about themselves and foster positive attitudes towards science
- To encourage children to examine and appreciate how science and technology affect their lives and the environment
- To provide a balanced range of scientific activities
- To develop opportunities for pupils to acquire scientific skill through investigation
- To ensure continuity and progression from Foundation Stage to Y6 as a result of careful planning
- To provide various ways of working: whole class, group, paired or individual
- To provide opportunities for pupils and teachers to share and exchange ideas
- To encourage pupils to work with increasing independence and develop research skills
- To ensure inclusive delivery so that pupils are given equal opportunities to access the science curriculum.

Principles of teaching science at Dringhouses Primary School

Following the achievement of PSQM (Primary Science Quality Mark) in 2020 the staff created a set of principles specific to teaching science at Dringhouses.

- It is fun and memorable including ‘wow’ moments so that children are inquisitive and want to ask questions.
- It is given dedicated teaching time.
- Children and staff are excited, enthusiastic and engaged in science through practical, ‘hands on’ work and investigations.
- Lessons are thought provoking and inspiring, leading children to wonder, ask questions, research and then discuss their learning at home.
- It links to real life and is relevant, and where children can make links across other subjects and build on prior knowledge.

Working Scientifically

In line with the National Curriculum, pupils are taught to ‘work scientifically’. The National Curriculum document defines this as:

‘Working scientifically’ specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how ‘working scientifically’ might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

To support the well-structured and progressive curriculum, the school makes use of a range of engaging resources such as those provided by Science, Technology, Engineering and Mathematics (STEM), Association for Science Education Education (ASE) and Explorify. Classes across school take part in STEM workshops run by STEM ambassadors to support the teaching of science. As a school, we take every opportunity to enhance learning, encouraging science professionals to come and share their knowledge with the children.

The Teaching and organisation of Science

In the Early Years’ Foundation Stage, science is taught through the specific learning area of ‘Understanding the World’. This area looks at supporting children in developing the knowledge, skills and understanding to help them

make sense of their world. They should be able to explore creatures, people, plants and objects and undertake practical 'experiments'.

In KS1, the children are taught science through a cross curricular approach linked to their learning projects. In KS2, science is taught as a discreet subject each week.

Year Group appropriate Programmes of Study are derived from the National Curriculum and are taught on a yearly basis. Mixed Year group classes combine elements of both year group programmes as appropriate. The school uses a wide variety resources to aid planning including STEM, ASE and the Kent Primary Science Scheme of work as a foundation for planning. These plans are personalised, adapted and supplemented by teachers to meet the specific needs of the pupils in the class.

Inclusion

We are committed to providing effective learning opportunities for all pupils and apply the three principles of inclusion to planning and teaching. Suitable learning challenges will be set for all pupils, with the aim of maximizing achievement for all pupils at an appropriate level for each individual. The open ended nature of science investigations allows able pupils to be challenged and to show their initiative and creativity when solving problems. Teachers will respond appropriately to pupils' diverse learning needs and be aware of the needs of differing genders, special educational needs, disability, as well as different cultural, social and ethnic backgrounds. We are committed to the principle of equality of opportunity and this will be reflected in the curriculum offered to pupils and in the conduct of staff and pupils.

Health and Safety

Teaching and learning in science takes place in line with the school's Health and Safety policy with the guidelines for safety - ASE 'Be Safe' 4th Edition being a **minimum** requirement of health and safety standards. Free advice is available to teachers from the CLEAPSS helpline - 01895 251496.

Resources

Resources include The Kent Primary Scheme of Work, Explorify, ASE, STEM, teachers' resource materials, centrally held scientific apparatus, science books from the library and pictorial resources, eg 'Concept Cartoons'. Resource boxes for most topics have been established and are replenished when needed.

Assessment

The assessment and recording of science is part of the overall assessment of the child and should be seen alongside all the other areas of development. Assessment in science reflects the general principles and procedures laid

down in the school's assessment policy. Formal written reports are provided each year and this information is shared with parents/carers.

Monitoring

The teaching of science is evaluated in order to support and enhance science provision in our school. The science subject leaders are responsible for monitoring the curriculum provision to ensure pupils make maximum progress.

Methods used to evaluate pupil performance include:

- Assessment of children's work and progress through regular book scrutinies
- Pupil voice activities
- Analysis of teachers' planning
- Discussions with members of staff
- Classroom observation undertaken by the senior leadership team and subject leaders
- External evaluation by local authority officers and OFSTED
- Evaluation of the school development plan