

John Ruskin Primary School and Language Classes

Science Policy

Co-ordinator: Julius Metson Scott

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Next review: October 2026



“Be responsible, be fair, stay positive and care”

Science Policy

Introduction

Science can no longer be looked upon as a body of knowledge to be transmitted. In a rapidly changing world where new developments in Science and Technology are occurring constantly, it is inappropriate to teach children only scientific 'truths' many of which become disproved. Instead at John Ruskin we aim to train them to think and act as young scientists; carrying out their own experiments, inferring their own conclusions and understanding the relevance of their discoveries to the world in which they live.

Intent

At John Ruskin Primary School, we strive to deliver an exciting and engaging science curriculum that is both memorable and encourages students to be inquisitive about the world around them. We believe that understanding the world through scientific disciplines is vital in building a generation capable of navigating their way through future issues that may arise. Pupils are taught the essential knowledge, methods and processes necessary to enable them to make links within and across scientific topics and other curriculum areas. We begin exposing children to scientific concepts during their early years of education, through experiential learning. We believe this moulds an attitude of curiosity that allows children to draw their own conclusions during investigations, which they can apply across their learning journey. Throughout these experiences, students are immersed in the appropriate scientific vocabulary, which allows them to embed the knowledge they have acquired during investigative experiences. In the national curriculum, science involves both conceptual and procedural understanding, we allow students the opportunity to achieve this through developing their practical skills, making predictions and working scientifically. We intend to provide this for all our students, irrespective of ethnic origin, gender, class, or ability.

Aims

To ensure that children's curiosity is stimulated and excited about phenomena and events in the world around them. They should be encouraged to become more aware of themselves and the world in which they operate.

To fulfil these aims, we must:

- Emphasise progression and continuity in skills and concepts throughout the school
- Ensure that throughout the school, science is taught using the National Curriculum
- Use these documents whilst still allowing for individual diversity and scope within the classroom
- Integrate PHSE and ICT into the science curriculum
- Keep the policy under constant review

Content

Science is one of four core subjects in the National Curriculum. The main body of study will be encompassed by the provisions of the National Curriculum. Beyond this, we aim to develop children's scientific understanding by presenting science as a way of learning through investigating, hands-on experience, problem-solving, fair-testing, and the interpretation and communication of ideas and findings. **Key Stages 1 and 2 follow the Kent Primary Science Scheme of Work. The scheme contains 28 units of work, each one specifically designed to address the primary science national curriculum, which began in September 2014. Each unit of study has been assigned to a particular year group in line with the guidance and contains information and advice required for teachers to provide excellent learning opportunities for their children. The plans have been adapted, where needed, to align with the school's science progression document and best meet the needs of our pupils.**

Our Approach to Teaching Science

Early Years

Providing a stimulating environment in order to build on children's curiosity as well as their intrinsic motivation to learn. We will encourage the children in the skills of investigating, predicting and testing. Activities such as water and sand play, construction toys, growing and observing living things, etc, will help to develop these scientific skills. Children are supported in their opportunities to manipulate, rearrange and test, reflect on this learning and communicate their feeling and thinking.

Key Stage 1

Children are to be given the opportunity to observe, explore and ask questions about living things, materials and phenomena. They begin to work together to collect evidence to help them answer questions and link this to simple scientific ideas. They will begin to evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables.

Key Stage 2

Pupils learn about a wider range of living things, materials and phenomena. They begin to make links between ideas and to explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They begin to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They communicate their ideas using a wide range of scientific language, conventional diagrams, charts and graphs. They are taught about and then are expected to carry out four tests, possibly independently.

Science is allocated ten percent of the taught time at both key stages, and this amounts to about 80 hours per year at KS1 and about 90 hours per year at KS2. Science is taught as a discrete subject. **It is expected that Science will usually be taught over 2 sessions a week,**

amounting to a minimum of 1.5 hours in KS1 and 2 hours in KS2, where possible, in extended sessions to allow for practical sessions.

Language Unit

The children in the language unit follow the National Curriculum and work is based on the Kent Primary Science Scheme of Work, adapted for suitability whilst still ensuring breadth of coverage. The science curriculum follows a rolling programme which is topic based; this allows links to be made throughout the curriculum areas. Progression is monitored through co-ordination of topic planning, following the progression grid to ensure appropriate skills and vocabulary are taught.

Within the unit the curriculum is differentiated to ensure accessibility for all the children; individual needs are identified on each child's statement. A multi-sensory experiential approach is used where possible and the children are encouraged to observe and make links between new and previous knowledge. Emphasis is placed on understanding of the basic concepts underlying scientific thinking. Paget-Gorman signing and Widget symbols may be used in communicating ideas.

Additional specialist input is given by the SLT staff who reinforce vocabulary and concept work; they also develop questioning and reasoning skills and strategies.

Informal assessment monitors understanding of content, including specialist vocabulary. Assessment of scientific investigative skills for each child is carried out at the end of each topic.

Resources

The School and its Surroundings

The school building, playground, garden and local area are extremely diverse. Buildings provide a range of materials and structures and can act as a tool for investigations. The garden contains both plant and animal life as a source for investigations.

School Resources

To be found in the Science and Technology resource room. Keys available through the main school office. Resources are according to year group units. The detailed medium term plans and progression documents are available to all on the staff drive. Information books are in the library (teachers and children). Class sets between year groups.

Assessment

The assessment for science follows the John Ruskin Assessment Policy. Science forms part of the referencing and is included in the end of year reports. The Kent Primary Science Scheme

of Work also has assessment references and can be used by teachers for their formative assessment on the whole class marking sheets. Optional mini tests at the end of each topic to test their knowledge over that half term can be used if necessary

Both KS1 and KS2 teachers have assessing Progress in Science documents. These can be used as either an initial or end assessment of a unit for formative assessment.

Science 1 investigations are assessed by the teacher as the experiments are taking place, included in referencing as well as on a more informal basis via class and group discussions

Expectations

Equal Opportunities

In science, lessons and investigations will be organised to ensure that every child gets equal access to the science curriculum and to teacher's time, with positive intervention for Special Educational Needs, i.e ability, gender, resources and language.

Science will be constantly monitored to ensure parity and progression throughout the school, as well as to ensure that the curriculum is disseminated at an appropriate level for the child as an individual.

Health and Safety

Science is taught in line with our general school Health and Safety policy.

Individual teachers will need to undertake their own specific risk assessment. The Kent Primary Science Scheme of Work units point out specific health and safety issues in relation to each lesson, these are generally consistent with advice given in 'Be Safe! Some aspects of safety in Science and Technology for KS1 and KS2' (ASE 2001).

Using the above advice it is up to the individual teacher to do their own risk assessment.

This Science Policy was revised in October 2023.

