



Together Everyone Achieving More

- **Together** with friends, families and community we care for ourselves, each other, our school and our world.
- **Everyone** has access to a broad, balanced and stimulating curriculum, whatever their gender, race, ethnicity or ability.
- **Achieving** our best is what we aim for every day we come to school.
- **More** independence makes better learners and helps us to become good citizens.

Rationale

At Spring Vale Primary School we value Science because it makes an increasingly important contribution of all aspects of life and allows all of our children a deep understanding of the environment around them. All children are naturally curious about their environment and Science naturally makes a contribution to their knowledge and understanding of the world.

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

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

Aims and Objectives

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to understand the uses of science, today and for the future. We at Spring Vale Primary School believe that the teaching of Science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

These aims are intended for all pupils in school. How they are implemented will be dependent upon the age and ability of the pupils.

Science aims to:

- Equip children to use themselves as starting points for learning about Science, and to build on their enthusiasm and natural sense of wonder about the world.
- Develop skills of scientific inquiry to design and carry out scientific investigations and evaluate scientific evidence to draw conclusions.
- Communicate scientific ideas, arguments and practical experiences accurately in a variety of ways.
- Develop, through practical work, the skills of observation, prediction, investigation, communication, questioning, and hypothesizing, and increased use of precise measurement skills and ICT.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, and to gain enjoyment of their scientific work.
- Enable children to have a wealth of experiences which help them explain their own environment and the world around us. We hope that this will feed their inquisitive nature.
- Enable children to develop their skills of cooperation through working with others, and to encourage where possible, ways for children to explore Science in forms which are relevant and meaningful to them.
- Teach scientific enquiry through contexts taken from the National Curriculum for Science.
- Encourage children to treat the living and non-living world with respect and sensitivity.
- Stress the need for personal and group safety by the correct usage and storage of resources.
- Enable children to appreciate that we do not always know the answers and results when we carry out scientific enquiry.
- Build our children's self-confidence to enable them to work independently.
- Challenge children to build up an extended specialist vocabulary allowing them to use technical terminology accurately and precisely.

How Science is structured through the school.

Planning for Science is a process in which all teachers are involved to ensure that the school gives full coverage of National Curriculum 2014 Science. Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

Foundation Stage and Key Stage 1 teachers should be teaching Science for a minimum of one hour each week.

Key Stage 2 teachers should be teaching Science for a minimum of two hours per week.

The school curriculum follows the requirements of the national curriculum on a year-by-year basis.

Some units may have been moved between year groups where appropriate to ensure greatest benefit of cross-curricular learning. Some units may also be taught in collaboration with outside agencies. At Spring Vale we understand that 'Working Scientifically' specifies the understanding of the nature, processes and methods of science in each year group and should not be taught as a separate strand. 'Working Scientifically' is embedded within the content of biology, chemistry and physics.

The essential elements describing how Science is taught in our school are described below:

- Teachers' notes and pupil task sheets have been adapted to the needs of our children.

- We use ICT widely in Science. Children are given the opportunity to practice Science skills and enhance their presentation using carefully-chosen software.
- We use ICT for enquiry work, including micro-scopes, digital cameras, video capture of images and activities, and data logging.
- Other resources include selected video and wall chart resources; short video sequences and other teaching resources intended for interactive whiteboard use.
- The school combines these secondary sources with first-hand scientific enquiries, building children's Science skills.
- We actively teach 'Working Scientifically' skills, and reinforce learning with selected enquiry simulations.
- We encourage children to ask and answer their own questions as far as practicable.
- Children complete at least two full enquiries each term, taking increasing responsibility for their planning, carrying them out and recording/interpreting their results.
- We sometimes use homework to support school and class activities, in accordance with the Homework Policy.
- We use cross-curricular links wherever possible to teach/reinforce Science in the most appropriate and meaningful way.

Children in the Foundation Stage are taught their scientific elements of the Foundation Stage Curriculum towards their Early Learning Goals. The majority of this teaching forms part of the 'Understanding of the World' ELG 13, 14, 15.

Equal Opportunities and Inclusion

Science is taught within the guidance of the school's equal-opportunities policy.

- We ensure that all our children have the opportunity to gain Science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, linguistic or gender bias.
- We aim to teach Science in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds.
- We value Science as a vehicle for the development of language skills – cognitively, socially and linguistically.
- In our teaching Science is closely linked with literacy and mathematics. Children should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties.
- We recognise that Science may strongly engage our gifted and talented children, and we aim to challenge and extend them.
- We exploit Science's special contribution to children's developing creativity; we develop this by asking and encouraging challenging questions and encouraging original thinking.

In school we aim to meet the needs of our children by differentiation in our Science planning and in providing a variety of approaches and tasks appropriate to ability levels. This will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations, and to achieve the targets they have been set. Some children will require close supervision and more adult support to allow them to progress, whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Assessment and Recording

We assess children against the age related expectations for each year group. Overall Summative Assessments are reported at the end of Key Stage 1 and 2. Children are reported as worked either below, at or exceeding the expectations for their year group.

We use assessment to inform and develop our teaching. All class teachers will use their assessment of the children in their class to plan appropriate work in science. Class teachers will make an assessment of each child's progress in Science and keep

appropriate records of achievement which are a consistent format across Key Stage 1 and 2. Children have their assessment objectives in the cover of their books to allow them to see their own progress in this area. Assessment is also built into teaching and will not simply be added on at the end of a unit. At the end of each academic year, teachers will track the progress of the class which they will then discuss with the following teacher/educational setting to inform their planning and future development. This data will be assessed by the subject co-ordinator for Science.

We mark work positively, making it clear verbally, or on paper, where work is good, and how it could be further improved. We mark Science in accordance with the whole school marking policy.

- Teachers record the assessment of **Working Scientifically and Curriculum Knowledge** within children's own Science books. The child friendly targets for Scientific Enquiry are placed in the front cover of the children's books so that the children can be engaged and involved in the assessment process. Teachers should update and review these targets on at least a termly basis.
- **Knowledge and Understanding Assessment** takes place in a systematic and structured manner:
 - Topics should generally begin with an assessment of what the children already know, what they would like to find out, and an opportunity to exploit any specific misconceptions that children already hold.
 - Assessment for Learning is built into teaching throughout the unit allowing children to constantly review their understanding.

Teachers record each child's achievement for each unit of Science taught. This, along with the 'Working Scientifically' record, enables teachers' to make termly progress reviews for each child.

These records of children's progress are monitored termly, with pupil progress meetings and discussions with the Science co-ordinator. The overall end of year judgements are recorded on a specific analysis ladder which is then passed onto the new class teacher and also to the Science Co-ordinator for monitoring purposes.

The Science Co-ordinator monitors progress throughout the school in a variety of ways e.g. by sampling children's work at regular intervals or collating children's views of the subject. Staff are asked to complete termly assessment reviews in Science, which can be found at the front of the children's books.

Through analysis of End of Year Success Ladders, the Science Co-ordinator identifies children who are not making sufficient progress and children who are demonstrating high ability in Science. These children are then monitored more closely and support and advice offered to staff as appropriate.

The unit assessment sheets will also be reviewed by the Science Co-ordinator to identify possible areas of strengths and weakness across the school. Patterns and trends in data may lead to wider evaluations such as subject knowledge of staff or resources needed, to allow teaching and learning in particular areas of Science to accelerate.

- Reports to parents are made verbally at parent Interviews on a termly basis. A written report stating a child's progress and achievement in Science is provided for parents once a year.

Health and Safety

It is important that all teachers are aware of the responsibility they have regarding health and safety both inside and outside of the classroom. Teachers need to take account of both the children's and their own health and safety when involved in science activities. Teachers should hold up to date records of allergies and health issues of the children involved their lessons.

Roles and Responsibilities

The Science Co-ordinator will:

- Keep abreast of new developments
- Attend appropriate courses and share information
- Support and advise staff
- Keep the Headteacher informed
- Keep resources in good order, labelled, up to date and ensure children and staff can readily access them safely.
- Order equipment
- Organise and lead curriculum meetings
- Review and analyse assessment data across the school
- Carry out lesson observations, book trawls, learning walks as outlined in the school monitoring policy
- Carry out an annual review of the subject and set targets for the forthcoming year

The role of the Headteacher is to:

- Support staff and the subject co-ordinator
- Have an overview of resources and curriculum delivery
- Ensure value for money
- Keep staff informed of the school's financial position
- Report to and advise the Governing Body

Policy Reviewed – September 2020

Next Policy Review – July 2021 – unless there is a change to the curriculum in this area.

Mr T. Kelly (Science Leader)

Signed _____ Headteacher Date ____ / ____ / ____

Signed _____ Subject Leader Date ____ / ____ / ____

Signed _____ Chair of Governors Date ____ / ____ / ____