



Wilkinson Primary School
Science Policy - Contents

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1)Introduction:

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Date written:	October 2025
Approved (governors) on	
Review Date	October 2026

This document is the statement of the intent, implementation and impact of teaching and learning of Science at Wilkinson Primary School.

Intent

In Science, all our children will aspire to use science to explain, predict and analyse the natural world; building key knowledge and concepts, being excited and curious about natural phenomena and understanding methods, processes and uses of science.

Our Science Curriculum at Wilkinson Primary School is designed with the intent of inspiring the children with a sense of awe and wonder through firsthand practical experiences. We give the children time to explore equipment, materials and the environment to come up with their own thoughts and questions. Our aim is to develop the children's natural curiosity about the world around them and to develop a set of skills and attitudes such as open-mindedness, perseverance, collaboration, observation and questioning, which are useful skills for life. From watching chicks hatch in Early Years to building complex electrical circuits in Key Stage 2 the children are positive and enthusiastic about science and can see its applications in everyday life. We have children with aspirations to be a scientist and it is the lifelong interest that we want to nurture in our rapidly developing scientific world.

Our Science Curriculum is designed to allow each pupil to...

Achieve the best possible standards and achievements, whatever the starting point.

Have high levels of engagement, enjoyment and personal development in Science.

Feel confident and successful in their Science learning.

Build on prior knowledge leading to progression and depth.



Science Principles



Every classroom has a poster on the wall with our school principles for Science which were updated in collaboration with all teaching staff.

IMPLEMENTATION

The 2014 national curriculum for science aims 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 skills** required to understand the **uses and implications** of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.
- At Wilkinson Primary School Science is studied for approximately 2 hours per week (36 weeks)

The school's medium term planning and coverage of key scientific skills will be used by teachers to plan, this will drive the journey of Science for every year group, building on from prior learning and develop progressively key skills and developing depth.



Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

Providing opportunities for children to develop the process skills associated with science education as well as develop a greater knowledge and understanding of life processes and living things, materials and their properties and physical processes as described in the National Curriculum for science. Science knowledge about the physical and biological world.

Promoting enjoyment and enthusiasm for learning through real, first-hand and rich science experiences so that all children explore, question, predict, plan, carry out and make observations and conclusions about their scientific tests.

Science fosters positive attitudes, which will promote scientific thinking, including curiosity, open-mindedness, perseverance, objectivity and recognition of the importance of teamwork.

Science helps the children become effective communicators of scientific ideas, facts and data. It allows children to discuss and present their work using scientific language, observations, diagrams, jottings and charts.

Through enrichment days, such as 'science fortnight', we promote the profile of Science and allow time for the children to freely explore scientific topics.

Help children develop an understanding of the importance of Science in everyday life.

Inclusion

Science at Wilkinson is committed to presenting an exciting challenge to all children regardless of race, age, gender, ethnicity, disability, attainment and background so they can meet their full potential. Regard should be kept at all times to Special Educational Needs and Disability (SEND) and adapted learning. Science is a core subject in the National Curriculum.

In school we aim to meet the needs of all our children by adapting our science planning and in providing a variety of approaches and tasks appropriate to ability levels. In accordance with the SEND Code of Practice 2014, and with recognised good practice, pupils with special needs receive work which is adapted and modified by the class teacher to suit their individual needs; this allows these learners to work and explore scientific concepts independently. Should support be needed this will be given as necessary in a way that enables them to explore the subject and problem solve for themselves.

Such pupils include:

Pupils with language/communication difficulties who are given support with reading and writing during Science lessons. Pre-teaching and visual aids may also be used.



Pupils with particular ability and flair for Science are extended through the use of enhancing and enriching activities so they can progress to a higher level of knowledge and understanding.

Cross-Curricular Links

There are many natural links and overlaps with other subjects such as English, Mathematics and Computing. Every effort is also made to include working in the school grounds and in the local environment.

English

Reading and writing are essential for the process of finding out and communicating an understanding of Science. Some of the texts that the children study in Literacy lessons are of a scientific nature. They develop their writing skills through writing reports and projects and by recording information. Drama, discussion and role play are aspects of the programme of study for speaking and listening and are important ways for children to develop their understanding of science themes.

Mathematics

There are many opportunities for children to develop mathematical skills in science lessons such as measuring and recording results in tables and bar charts.

Computing

Children use computing in science lessons where appropriate. They use it to support their work.

Communicating information (word processing and graphics/drawing packages)
Handling information (databases and data capture equipment)
Modelling (simulations and spreadsheets)
Retrieving information – Internet, 2 Simple Science, BBC Bitesize, Texts on Google Classrooms.

Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions.

Teachers should encourage positive values and attitudes so that children:

- Work with others, listen to each other's ideas, and treat them with respect
- Have opportunities to consider their own attitudes and values, and those of other people.



- Develop respect for evidence and critically evaluate ideas which may or may not fit the evidence available.

CONTINUITY AND PROGRESSION

Planning in Science is a process in which all teachers are involved, wherein:

- 1) The foundation for curriculum planning is the Whole School Development Plan, developed through a process of collaboration between staff, and approved by governors.
- 2) Planning for Science is reviewed at least half a term in advance dictated by the current year's overview. Medium term planning is done on Wilkinson Primary School planning templates.
- 3) Staff follow the Year Group Topic Overviews with attention paid to the "2016 Key Stage Teacher Assessment Performance Descriptors" to assess pupils' ongoing progress and attainment to arrive at judgements which are consistent with national standards.
- 4) Monitoring of Science lessons and of pupils' books and feedback to the staff ensures consistency of approach and of standards.

Early Years:

- Pupils build confidence to explore science purposefully to support their learning for all Early Learning Goals as appropriate.
- Pupils in The Early Years will have experiences to explore science indoors, outdoors and through role play in both child-initiated and teacher-directed time.
- The Early Years staff use the EYFS Statutory Framework to plan for science (Understanding the World) in a range of contexts.
- Pupil's experience of early scientific skills will be developed in a practical hands-on manner.
- Pupils will explore the natural world around them, making observations and drawing pictures of animals and plants. They will know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. They will understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

KS1 and KS2

The scheme of work for KS 1 and 2 continues building on concepts and process skills in a spiral way, ensuring that all knowledge and understanding programmes of study are covered at least once in Key Stage 1 and at least twice at Key Stage 2, and that all the process skills programmes of study are constantly being visited and developed as each science unit of work is taught. (See "Science Yearly Overview" on next page)



Assessment

Assessment is inextricably linked to planning and all assessments in science are used to inform future planning in order to impact on future teaching and learning.

In science elicitation activities are carried out prior to, during and after teaching in a variety of ways to inform planning or how far ideas have progressed after a period of teaching.

Formative assessment is continually on going in the form of marking pupils work and making notes on weekly planning in order to inform planning for the next lesson. These assessments are linked to the key learning objectives for the lesson.

In early years profiles are kept up to date with summative assessments of pupils achievements.

Formal summative assessment is carried out at the end of each Science Topic through the use of end of unit tests in all year groups from 1 to 6. Assessment at the end of a unit gives information of pupils understanding, at, above or below national guide lines on expectation. The information for individuals is used for target setting and as a whole group to inform planning when moving on to follow on units to ensure suitable progression.

Recording and Reporting

Records of progress in Science kept for each child contain:

- 1) A termly record of progress in each unit covered. (End of Topic tests)
- 2) A Science book of children's work, dated and annotated with teacher comments and containing work which shows achievement and progress. In addition, a folder with Pic-collages of practical investigations will be kept in each class room.

Reporting to parents is done on a termly basis through interviews and annually through a written report. Reporting in Science will focus on each child's:

- 1) Attitudes to Science.
- 2) Progress in **Working Scientifically**, the ability to investigate scientifically including the understanding of the nature of "scientific method" and the development of Science skills.

Monitoring and Review

It is the responsibility of the subject leader and Senior Leadership Team to monitor the standards of children's work. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school. The subject leader monitors the budget, resources science topics and books workshops to support learning. The subject leader has specially-allocated time for fulfilling the task of reviewing samples of children's work, visiting classes to observe teaching in the subject training, liaising with other subject leaders from other schools and organising science fortnight.

Resources

Most resources are stored centrally. These resources include:



- 1) Sets of scientific instruments likely to be used sporadically by all classes, such as magnifiers, thermometers, spring balances, magnets, rock sets etc.
- 2) Major expensive items such as dataloggers and skeleton.
- 3) Pond dipping equipment.

For the academic year 2024-25 Wilkinson Primary School will follow agreed topics on the “Science Yearly Overview”. The Scheme has been developed in consultation with staff and is under continual review. A bank of resources has been built up (Found on TEAMS in the Science Channel) and is added to regularly. Collins Snap Science Resources are available to dip into and photocopiable resources and online resources are also available. The Early Years will follow the EYFS Statutory Framework and have agreed topics for each term.

The Science Scheme is supported by:

1. A wide variety of resources – equipment unit specific, and for experimentation.
2. Science Books including Collins Snap Science
3. KS1 and KS2 CGP Study Books.
4. Letts Science Series – Classrooms
5. Concept Cartoons – Science Channel on TEAMS.
6. A bank of PowerPoints and worksheets stored on TEAMS (Wilkinson Teaching Staff – Science).

Consideration of health and safety issues is of the utmost importance in Science. Guidelines are provided on:

- 1) Appropriate handling of equipment and materials.
- 2) Appropriate storage of equipment and materials.

Every class room has a copy of “Be Safe!” on their wall with their Science Display for ongoing referral. All staff have login details for CLEAPSS. Safety guidelines are also available in the Science channel on TEAMS.

Parental Involvement

Science workshops for each class, provided by external companies, offer children those awe and wonder moments they remember beyond Primary School. Parents are invited into class Science lessons to get immersed in practical investigations. Parental involvement is encouraged with Science based homework activities. The annual Science Fair also provides a valuable opportunity to link with parents. Parents can help their children make their projects and then can visit the Fair to see the myriad of different projects the children have made.

These opportunities will vary each year and will reinforce the fact to the children that Science is a key feature of everyday life.

Parents are encouraged to help their children relate their Science knowledge and understanding to their daily experiences.



Homework may be used to support Science through tasks such as:

- 1) Finding out more about a topic or finding answers to questions posed in school through the use of books and interviews with friends and family, Internet etc
- 2) Applying their knowledge and understanding to their own life experience.
- 3) Collecting data and information.
- 4) Practising some of the skills of investigative work, eg thinking about questions to ask about a topic and ways of finding out the answers.

IMPACT

The successful approach to the teaching of science at Wilkinson Primary School results in a fun, engaging, high quality science education, that provides children with the foundations for understanding the world that they can take with them once they complete their primary education. The impact of the curriculum will lead to outstanding progress over time at all key stages, from the children's starting points. Children will leave school at least achieving Age Related Expectations. The rich and broad curriculum and units of work will enable teachers to consistently plan lessons progressively building on prior knowledge and the development of key skills in order to deliver high standard lessons. Children will be confident, resilient, self-motivated, independent learners, with a thirst for challenge and depth of understanding of scientific skills and concepts. Pupil voice is used to further develop the Science curriculum, through questioning of pupils' views and attitudes towards Science, to assess the children's enjoyment of science, and to motivate learners.

Review:

- This policy will be reviewed annually by the Science subject leader and leadership team and shared with the school community.

