SCIENCE POLICY

Our Vision:

We are committed to quality learning in a positive, happy and Christian atmosphere where everyone within the school community is valued as an individual. We expect everyone to, 'Treat others as you want them to treat you.' (Matthew 7:12-14). We have high expectations of all and strive to provide a safe, challenging, exciting and stimulating environment.

Our Values:

To promote lifelong learning and equip children with the skills, knowledge and understanding to make informed choices about important things in their lives through our school values of:

- Respect – by recognising children learn in different ways and providing opportunities for children to learn through a variety of different tasks and in a range of different situations and environments.
- Compassion – by considering the needs of the individual child. To boost self confidence and self esteem making sure children feel good about their achievements.
- Creation – by creating opportunities for encouraging children to be creative in their response to tasks. Understanding that we are all unique and that we use our knowledge and skills for good.
- Perseverance – to acknowledge through praise where children have not given up even when things seem difficult, and when children have improved their work.
- Service – by building trusting relationships with children as we serve to help them to improve their work.

The Purpose and Importance of Science

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should

be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

At Willaston CE Primary school we:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop an understanding of the nature, processes and methods of science through different types of scientific enquiries that help pupils to answer scientific questions about the world around them
- Ensure pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- Enable children to explore and investigate outside the classroom.

KS1 Science

The principal focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, both inside and outside the classroom, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Lower KS2 Science

The principal focus of science teaching in lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

Upper KS2 Science

The principal focus of science teaching in upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change

and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Implementation of 'Working Scientifically'.

Willaston CE Primary School aims to provide a stimulating and challenging science curriculum which will encourage an attitude of learning based on discovery. All pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group

These types of scientific enquiry should include:

- observing over time
- pattern seeking
- identifying
- classifying and grouping
- comparative and fair testing (controlled investigations)
- researching using secondary sources
- pupils should seek answers to questions through collecting, analysing and presenting data.

Planning in Science is subject based to ensure coverage of the National Curriculum requirements for both Key Stages. Each teacher, during an academic year, delivers the objectives. The reception class cover the objectives from 'Knowledge and Understanding of the World,' from the Foundation Stage Profile.

Individual teachers are responsible for ensuring that work is differentiated to suit individual children's needs, including Greater Depth and SEN.

Continuity and Progression

It is essential to ensure continuity and progression across both Key Stages. This is done both through the subject teaching, as per the programme of study, and investigative work. Progression is monitored by the Science co-ordinator.

- As children mature they have an increasing variety of experiences which raise their awareness of scientific ideas and concepts. Investigative work begins with the children's existing knowledge and progresses to more abstract concepts
- Children's existing knowledge will allow investigative work to broaden as new ideas emerge
- An increased complexity of the variables within the task and methods of recording, displaying and interpreting data.

Assessment

Teachers assess children's work in line with the school's Assessment policy and against the 2014 National Curriuculum objectives, making on-going formative assessments during lessons. Assessment for Learning strategies are used to provide teachers with information on individual strengths and weaknesses in the subject, inform the planning of future work and to help children understand how to improve their learning.

Reporting

Children's achivements and progress in science are shared with parents termly. Parents are informed annually of their child's progress in science through a written report.

Resources

The majority of our science equipment is stored centrally to aid easy access by all staff. Equipment is clearly labelled and stored in the resource cupboard outside of the Year 6 classroom.

Health and Safety

We continually monitor safe working practices in school and follow guidance by HSE (HSE.gov.uk). The subject leader also carries out an annual risk assessment.

Teachers also take into account the school's Health and Safety policy when planning science activities and risk assess where necessary.

Children should learn to identify potential hazards in science and should learn to suggest ways of carrying out investigations safely.

The Role of the Co-ordinator

To support and advise colleagues on planning and assessment.

To make staff aware of health and safety arrangements.

To encourage professional development of self and staff through attending courses and identifying INSET opportunities.

To monitor good practice in science through examination of a selection of each year group's books, planning, discussion with colleagues and children and lesson observations where appropriate.

To be responsible for the ordering and storing of science equipment.

To review the scheme of work and policy.

To liaise with the Governor allocated to science.

Approved by Governors May 2023

Signed Chair of Governors