# *St. Luke's C.E (Aided) Primary School*

# Science Policy

**January 2023**
**Date of Review- January 2024**

**Science Lead: Miss Tomlinson**

School vision- *Let your light shine, live life to the full, respect and care for all, create a happy and safe world for everyone.*

Intent Statement

At St. Luke's we strive to develop children's enjoyment and interest in the science subjects. We aim to ensure that a full curriculum is planned and taught throughout school while building on children's prior knowledge and capabilities. At St. Luke's we encourage children to become independent, curious learners who ask questions to develop their thinking of the world. Our curriculum is purposeful and allows the children to develop their skills in a range of ways including investigating key questions, recording findings in a variety of ways, analysing results, making predictions and hypothesising. We incorporate our outdoor space in our learning of science by using the eco garden to fulfil our wider learning experiences.

Aims

The National Curriculum in England (DfE, 2014) outlined aims in science to ensure that all pupils:

- develop scientific knowledge and conceptual understanding though 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.

At St. Luke's C of E Primary School, we follow the National Curriculum and strive to ensure that all pupils achieve the above aims before they leave in year six.

Science in the Early Years Foundation Stage

Teaching staff in Foundation Stage 2 follow the Early Years Framework, which aims to ensure that children have the knowledge and skills needed to be ready for the Year 1 curriculum. At St. Luke's, children in foundation stage learn about the natural world covering the following objectives:

- identifying the familiar world
- identifying why things happen and how things work
- developing an understanding of how things grow, decay or change over time
- identifying how to care for living things and their environments
- understanding the effects of changing seasons.

Teaching and Learning

Our well-balanced curriculum promotes the spiritual, moral, cultural, mental and physical development of pupils and prepares them for the opportunities, responsibilities and experiences of later life. At St. Luke's we use a variety of teaching styles in our science lessons. Our main aim is to develop every child's knowledge, skills and understanding. We undertake a range of tasks through whole class teaching and engaging children in an enquiry- based research. We encourage children to not only answer scientific questions but also develop a love of learning where they will pose their own scientific questions. Throughout school, children have the opportunity to use a variety of data including statistics, pictures, photographs and graphs. Whenever possible, children are involved in real scientific activities, such as investigating a local environmental problem or carrying out practical experiment and analysing the results.

We understand that all children have a wide range of scientific abilities and we ensure that learning is tailored and suitable for individual needs. We achieve this in a variety of ways:

- setting tasks that are open-ended and can have a variety of responses
- setting tasks of increasing difficulty
- sometimes grouping children by ability and setting different task for each ability group
- providing resources of different complexity, matched to the ability of the child
- staff members to support children when necessary.

Annually we undertake a subject evaluation that is based on the following questions:

▪ How do we design and provide a curriculum that is broad and balanced for all pupils? (Curriculum Intent)

▪ How do we deliver our curriculum through teaching, assessment and feedback? (Curriculum Implementation)

▪ How do we assess pupil achievement through external tests/exam results and by our own school data? (Curriculum Impact)

Children with SEND and More Able Pupils

At St. Luke's Church of England Primary School, we aim for all children to receive quality teaching suited to their personal needs and abilities. Children with SEND may receive additional support or differentiated work to enable them to access the curriculum and make good progress. We aim to provide stretch and challenge for all pupils, regardless of ability and therefore aim to appropriately support our more able pupils to make good or better progress.

Inclusion

At St. Luke's we believe that we are an educationally inclusive school as we are concerned about the teaching and learning, achievements, attitudes and well-being of all our pupils. We aim to provide places for all pupils who express a preference to join this school. We work hard to offer equality of opportunity and diversity to all groups of pupils within school such as children:

▪ from both sexes;

▪ who have Special Educational Needs;

▪ who are looked after;

▪ from minority faiths, ethnicities, travelers, asylum seekers, refugees;

▪ who are more able;

▪ who are at risk of disaffection;

▪ who are young carers;
▪ who are sick;
▪ who have behavioural, emotional and social needs.

We believe we have a duty to ensure that all children have equal rights to the opportunities offered by education and that all children will be encouraged to fulfil their potential in their academic, physical and creative achievements. We want to give all children the right to access high quality educational experiences, to take part in a broad and balanced curriculum and to be part of the social life of the school. We recognise that within the school we have more able, gifted and talented children. We believe that at St. Lukes:
▪ more able children demonstrate a higher ability than average for the class and often require differentiated tasks and opportunities to learn through challenges;
▪ gifted children are those who have the ability to do well in more than one subject;
▪ talented children demonstrate an innate talent or skill in creative, cultural or sporting fields.

At St. Luke's we have an even greater obligation to plan and deliver well-structured lessons with appropriate assessment plus ambitious targets for pupils who have low levels of prior attainment or come from disadvantaged backgrounds. Also, we have a duty to cater for pupils whose first language is not English by planning teaching opportunities to help them develop their English and to gain full access to the National Curriculum.

Differentiation

Differentiation is best defined as 'the process by which differences between learners are accommodated so that all students in a group have the best possible chance of learning.' (Geoff Petty)

The main purpose of differentiation is to challenge and raise standards of learning by ensuring that curriculum objectives are accessible to all our children despite their backgrounds or abilities. At St. Luke's we see differentiation as a form of integration and not exclusion.

Differentiation must reflect the learning objective and can be achieved in a variety of ways either by task, by support or by outcome and should be chosen by fitness for purpose.

We want all children to achieve success, therefore we will ensure they are given differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do.

The main feature of effective differentiation is good planning resulting in effective teaching and learning with children making good progress. Also, we expect to see in all classes interested well motivated children responding to challenges, children working productively on task and being aware of their own progression.

## Curriculum Planning

Science is a core subject in the National Curriculum. At St. Luke's we follow the National Curriculum programme of study for science and make good use of the local environment to enhance our learning.

Long, medium and short term plans are created to ensure full curriculum coverage during different year groups and key stages. The science subject leader has created and shared the document 'Curriculum Coverage' with teaching staff and this can be found on the science subject page on the school website following the link https://www.st-lukes.notts.sch.uk/science-curriculum-coverage/ .

At St. Luke's we understand the importance of building on prior knowledge therefore we ensure that topics planned encourage children to revisit and develop their learning at different stages of the school journey. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each science unit and ensure that progression is apparent so that children are increasingly challenged as they move up through the school.

## Science and Other Subjects

At St. Luke's we understand that science lessons can develop skills learnt in other curriculum lessons including:

- English: Science contributes to our teaching of English as during our lessons we are promoting the skills in writing, reading and speaking and listening. Children develop their verbal skills by recounting their observations of scientific experiments and are able to record their findings in a range of written contexts. Many texts that we use in English have scientific links.
- Mathematics: Science contributes to the teaching of mathematics including developing the children's understanding of weights, measures and how they apply number. When working on investigations, children are encouraged to estimate and predict as well as develop their accuracy in recording their events.
- Geography: Science contributes to the teaching of geography through the learning of the environment and how it has changed over time.
- Computing: Science teaching is often enhanced with the use of technology. Children are encouraged to use ICT to record, present and interpret data, to review, modify and evaluate their work. Children learn how to find, select and analyse information on the internet and on other media.

## Assessment

Teachers at St. Luke's C of E Primary School assess children's work in science by making informal judgements during lessons. Teachers use children's completed work to make judgements for future learning. Written and/or verbal feedback is given to the child to help them continue to make progress, with children in Key Stage Two encouraged to make judgements

about how they can improve their own work. At the end of the science topic, class teachers will make a judgement about the work and progress of each pupil and record this on Depth of Learning. Progress throughout the children's school journey can then be seen on a line graph, where information shows the progress in each science topic. The science subject leader, Miss L. Tomlinson, keeps samples of children's work and uses these to demonstrate the expected level of achievement in science for each age group in the school.

Resources

Staff members have access to sufficient resources for teaching the different science units in school. These resources are kept in a central store, which is monitored regularly to ensure the equipment is up to date and safe. An inventory of equipment is completed yearly with the last recorded in December 2021. The school library contains a good supply of science topic books.

Resonsibilities for Science in school, including Headteachers and Governors

The coordination and planning of the science curriculum are the responsibility of the subject leader, Miss L. Tomlinson, who alongside teaching staff also:

- supports colleagues in their teaching, by keeping informed about current developments in science and providing a strategic lead and direction for this subject;
- ensures that all pupils are making sufficient progress in achieving the learning objectives of science
- ensures that those teaching science are suitably qualified and have a good level of knowledge in the subject
- ensures that staff members have regular opportunities to take part in effective CPD
- ensures that teachers have a good level of knowledge to correctly assess children against the science objectives.

This policy will be reviewed January 2024.