P pupil voice R respect I independence D dignity E entitlement

SCIENCE POLICY

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An academy within:

nexus Multi Academy Trust

"Learning together; to be the best we can be"

Introduction:

At Kelford School all pupils and students access a broad and balanced curriculum, which is linked to their individual needs and contributes to their overall education and development.

> *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.*

Aims:

At Kelford School we aim to ensure pupils are given the opportunity to explore, discover and investigate the world around them. These experiences will help them to understand more about the world they live in. The science curriculum should provide:

- Opportunities for the exploration of science through personal and practical experiences.
- A range of experiences, appropriate and relevant to the world of the child but must, at the same time, satisfy their curiosity and give them opportunities to discover their world outside of the classroom.
- Access to a wide breadth of coverage that cover the entire national curriculum, Whilst making the learning, accessible, relevant and engaging to our children and young people.

Objectives:

All pupils will approach science through exploration, structured investigation and practical activities. It is intended that all scientific knowledge will be acquired through direct experience supported by information obtained from a variety of sources such as; teacher, computer database/internet, written texts, TV programmes and a sensory approach. This emphasis on investigation means that all students can be provided with an accessible Science curriculum regardless of their developmental level and the complexity of their disabilities.

In Foundation Stage classes, it is taught as an integral part of the topic work covered during the year. The scientific aspects of the children's work to the objectives set out in the Early Years Foundation Stage (EYFS) which underpin the curriculum planning for early years children. Science makes a significant contribution to the objectives in the EYFS for developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water and exploring the senses through play.

At Key Stage 1 pupils observe, explore and ask questions about living things, materials and the physical world through topic based activities in line with the Cornerstones learning themes, and also taught within discreet lessons. The pupils begin to test things and experiment through play and their senses to help them answer questions and gain basic understanding of scientific processes. They share ideas and use their world around them to find out.

At Key Stage 2, 3 and 4 pupils learn about a wider range of living things, materials and physical process. They make links between ideas and explain things using simple scientific language. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They carry out more systematic investigations through practical activities, working on their own and with others. They analyse the data they have collated, present it in tables, graphs and charts using ICT where appropriate, to communicate their ideas and findings. They make use of their outside environments to further support their knowledge and they look for patterns in their results and use these results to draw conclusions. They talk about their work and make simple predictions for testing. Science lessons will include elements of scientific investigations appropriate for the needs of each pupil. Pupils will be taught how to plan, record and evaluate experiments. In Key Stages 3 and 4, in each of the three terms the pupils will study a topic based on Chemistry, Physics or Biology. Science at Kelford should encourage learners to be:

- **Successful learners –** who are encouraged to interact creatively, demonstrate curiosity, explore their environment and imagination. Confidently extend their knowledge through different opportunities provided. Investigate, question and develop their attitudes of science.
- **Confident individuals** -who have a sense of self-worth, make informed choices, communicate their ideas using appropriate scientific language, and explore their curiosity for the outside environment and link scientific learning to everyday experiences.

- **Responsible citizens-** who ask questions and discuss ideas relating to scientific enquiry. This helps them to access stimulating lessons to help them investigate, question and develop their attitudes of science.

Moral and Spiritual Development:

The pupils at Kelford School will be encouraged to value themselves in our world. They will be taught to respect all living things and our world. Where possible and appropriate, the pupils will learn about conservation and having an environmental responsibility for the world in which we live. Within science activities we aim to celebrate the wonder of the world in which we live. The contribution of all our pupils is valued, respected and celebrated.

Responsibilities:

The **Senior Leadership Team (SLT)** is responsible for:

- Overseeing the whole school curriculum within each phase.
- Supporting and challenging the thinking of the staff within Primary and Secondary Departments.
- Monitoring progress through data analysis and pupil progress meetings.

The **Subject Leader** is responsible for:

- Ensuring coverage and breadth in the curriculum through long term plans to offer appropriate challenge.
- Developing and keeping policies and practice up to date.
- Ensuring pupil progress is tracked and measured through data analysis
- Provide leadership and direction for the subject while supporting, guiding and motivating teachers and other adults of the subject.
- Ordering and maintaining whole school resources to support learning.

The **class teacher** is responsible for:

- Ensuring children have access to a range of scientific investigations and a broad and balanced range of scientific lessons. This should be demonstrated through planning.
- To ensure all risk assessments are completed prior to the lesson and shared with staff.
- It is the responsibility of **all staff** to ensure the health and safety of all pupils and take responsibility for recognising and assessing hazards in a range of products, activities and environments.

Consultation and Engagement:

This policy was updated from previous policies by Carl Haag and the current Science National Curriculum.

Monitoring, Evaluation and Assessment:

The pupil progress is monitored by the Class Teacher and subsequently by the coordinator every half term when medium term planning is evaluated. The information gathered is then analysed by the subject leader and used to check for coverage, pupil progress and tracking.

Throughout the school assessment is carried out using P-Level criteria, PIVATS and Age Related Expectations. This documentation splits science into four aspects:

- Scientific enquiry
- Life processes and living things
- Materials and their properties
- Physical processes.

In each aspect of scientific learning the children are awarded a P-Level ranging from P4 to P8. Children exceeding these levels are assessed according to Age Related Expectations levels, starting at level 1.

Summative assessment judgements are moderated by teaching staff at regular intervals. Pupils' attainment in science is reported to parents in the End of Year reports.

We aim to:

- Build on our children's natural curiosity through first hand and practical experiences where possible
- Teach the children scientific knowledge which is relevant to and meaningful to them
- Teach the children scientific skills through both science sessions and an integrated curriculum
- Stimulate them to investigate, question and develop their attitudes of science
- Teach them to communicate ideas using appropriate scientific language.
- Teach them to evaluate their findings and suggest explanations
- Give them opportunities to increase their knowledge of themselves, their environment and their world

- Use ICT and visual materials, where possible, to enhance the children's scientific learning
- Link the children's scientific learning to everyday experiences e.g. cooking, growing flowers and exploring through the senses.
- Nurture the children's curiosity for the outside environment and where possible, use the outdoor classroom as a base for learning.