

**WIBSEY PRIMARY SCHOOL**

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| **Science Policy** |

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| Agreed by Governors  Date: | Full Governors |  |
| Finance and General Purposes |  |
| Teaching and Learning | x |
| Signed on behalf of Governing Body by Chair of Committee: |  |  |
| Approved |  |  |
| Review |  |  |

**Introduction**

This policy sets out our school’s vision, aims, principles and strategies for the delivery of Science at Wibsey.

The National Curriculum (2015) Purpose of Study states that:

“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.”

**Whole School Curriculum Intent**

At Wibsey Primary School, our curriculum has been carefully designed so that it is engaging, providing breadth, depth and access to the full curriculum for every pupil. The Cumulative Curriculum is structured and sequenced to enable all pupils to be able to make links between prior learning and new learning. It lays out the cumulative acquisition of the knowledge, skills and concepts that pupils need to be successful. Our curriculum is aspirational and personalised to ensure that it provides opportunities for all; by the end of their primary education our pupils are well-equipped for the next stage of their education.

**Subject Specific Curriculum Intent**

At Wibsey Primary School, children are supported to make sense of the world in which they live through investigation. Teachers aim for our children to develop a lifelong love for science and to be aware of the presence and application of science around them. Teaching develops scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. In addition to this, teaching should develop an understanding of the nature, processes and methods of science through different types of scientific enquiries. Children at Wibsey are encouraged to ask and answer scientific questions about the world around them, so that they are equipped with the knowledge required to understand the uses and implications of science for the future.

**Implementation**

The Wibsey Primary School Science Cumulative Curriculum consists of five topic areas and is designed so that children build on previous learning as they move up through school. Teachers ensure that, through following this process, children complete their education at Wibsey equipped to rise to the challenge of secondary school Science and beyond. Children will be taught how to use scientific enquiry to raise hypotheses and undertake investigations. Children will be able to work scientifically by questioning, predicting, noticing, concluding and wondering.

The school’s cumulative curriculum identifies specific skills and assessment points that each Key Stage will achieve. These scientific skills are tailored to topics which are outlined in the Long Term Plan. Additionally, assessment check points that focus on the discrete teaching of skills of scientific enquiry are assigned to every Science topic across the curriculum in a cumulative way so that skills are built upon as children advance through the Key Stages. Children are given the opportunity to revisit and develop the skills taught as well as being given the opportunity to challenge and deepen their understanding.

**The Foundation Stage**

Science is taught across EYFS as an integral part of the Early Years Curriculum. Aspects of learning are related to the objectives set out in the Early Years Foundation Stage Framework which underpin the curriculum planning for children in Nursery and Reception. Children begin to make simple observations and begin to ask how and why questions, suggesting answers. Through the continuous and, where appropriate, enhanced provision, teachers deliver core-learning experiences with a particular emphasis on the outdoors so that children are curious about the changing world around them.

**Key Stage 1**

Within Key Stage 1, children will develop their understanding of Scientific enquiry by raising questions, using close observation with some accuracy to take measurements and understanding what would constitute a ‘fair test’. Children will be able to record findings using simple tables and charts and will be able use this information to answer questions. Through the delivery of the cumulative curriculum, children will understand the following concepts by the end of Key Stage 1:

* Plants have a life cycle which includes reproduction and growth. Living things can have specific habitats and all living things have basic needs which they need to survive.
* All animals, including humans, have offspring who then grow and mature. All living things have basic needs that must be met in order to survive.
* Different materials have different properties which determine their use. Some materials can be used for more than one thing: the same object can be made from different materials.
* Light keeps plants growing and healthy. Day length and natural light is dependent on the season and this affects the growth of plants. Temperature is also affected by the sun.

**Key Stage 2**

Within Key Stage 2, children will build on their understanding of Scientific enquiry by making informed predictions and creating investigations to test their theories, reporting and presenting clear findings and offering well-evidenced explanations to support their reports. They will be able to make their own decisions about how to record their findings and will be able to apply scientific knowledge to solve practical problems. From Year 3, children will be introduced to the topic of ‘Forces and Electricity’. Through the delivery of the cumulative curriculum, children will understand the following concepts by the end of Key Stage 2:

* All living things can be grouped and ordered according to their characteristics, including their similarities and differences. Larger groups can be subdivided on the basis of their similarities and differences. There is an underlying order in the natural world.
* The choices people make can affect their bodies and health as well as other living things. The outcomes from scientific tests can be used to support or refute scientific ideas or arguments.
* Characteristics are passed from parents to their offspring. All living things change and adapt over time. Variation in offspring can make animals more able to survive in particular environments.
* Light appears to travel in straight lines and objects are seen because they give out or reflect light into the eye. Shadows have the same shape as the objects that cast them because light travels in straight lines.
* Altering the different elements of an electrical circuit will affect the electrical output and how things function e.g. brighter light. The number and voltage of cells in a circuit have an effect.

**Staff Development**

It is the role of the Science Subject Leader to support teachers and staff in school with addressing and improving subject knowledge at Wibsey. Teachers are encouraged to use Reach Out CPD to monitor and evaluate their own subject knowledge in Science.

All staff are members of the National College and can access Science CPD.

**Teaching and Learning Approaches**

Teachers employ a range of strategies, using their professional judgement to decide on the most appropriate teaching and learning approach for the class, groups of pupils or individual pupils.

Approaches and strategies used include:

* Teacher-centred – direct teaching of new knowledge and skills - children ask questions.
* Hands-on activities – following experimental procedures, exploring material themselves or station-based rotations.
* Project-based learning – involve children in a deep dive into a given topic.
* Peer-led team learning – empowering students to impart knowledge to other students.
* Flipped learning – instructional content given to children prior to a unit of learning, with the intention that children can come to school with deeper questions for teacher clarification.
* Differentiation – ensuring that children of all abilities can be involved in the lesson.

**Remote Learning**

If there is a period of remote learning, the curriculum coverage will stay the same for children. Online teaching and learning resources will be offered to children unable to attend school in line with the cumulative curriculum and the remote education policy.

**Cross-Curricular Links**

The teaching of Science will provide opportunities for children to use skills from other subjects. Science contributes significantly to the teaching of English by actively promoting the skills of reading, writing, speaking and listening. Texts that are used in English are linked to Science topics allowing children to develop reading and writing skills. Children will develop oracy skills through discussing scientific questions or presenting their findings to the rest of the class. Children use mathematical skills to record and present data. Additionally, children enhance their computing skills as they are able to research information using the internet and present written work in a different way.

**Enrichment**

At Wibsey we aim to provide enrichment to enhance children’s learning experiences. In Science, we do this through:

* Educational visits
* Science-related visitors within school
* Engaging in STEM activities and opportunities

**Equal Opportunities and Inclusion**

School is committed to inclusion with all pupils having equal opportunity to access learning opportunities that enable them to achieve their personal potential. We recognise that we have children of differing ability in all of our classes, so we provide suitable learning opportunities for all children by matching the learning challenge to the ability of the child.

Being an inclusive school, teachers carefully consider children with special education needs and disabilities and provide meaningful, appropriately-challenging Science activities for them. Learning is scaffolded through careful resourcing to enable all pupils to access learning. In order to ensure equal opportunities for all children, pupils with physical barriers to learning will be given full support from an adult when using scientific equipment.

The SENDCo and Subject Co-ordinator jointly advise teachers on supporting individual children with particular physical, linguistic and educational needs, including more-able pupils.

**Impact**

The Wibsey Primary School cumulative curriculum allows for teachers to continually assess learning that has been taught. It identifies ‘End Points’ that the children should reach by the end of the academic year. These End Points ensure that appropriate skills and knowledge have been taught in preparation for the next year. At the end of a unit of work, children will be given the opportunity to complete Check Point Assessment tasks. These tasks are designed to support the assessment of Science and will identify key areas within the subject where there are gaps in learning.

**Monitoring and Evaluation**

The monitoring of the standards of children’s work and of the quality of teaching in Science is the responsibility of the Science Co-ordinator. This involves supporting colleagues in the teaching of Science and their knowledge and understanding, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The Science Co-ordinator evaluates the strengths and weaknesses in the subject, and indicates areas for further improvement and informs the subject action plan.

**Assessment, recording and reporting**

All children will be regularly assessed against the Assessment End Points on the Science Cumulative Curriculum. These identify the expectations in Science at the end of each academic year. Reporting to parents on attainment, standard of work and of the level of application is done twice yearly through their school report and parent’s evenings

Statutory assessment in Science is reported at the end of Key Stages 1 and 2.

**Other policies**

Other policies to which the Science Policy links are:

Inclusion Policy

Safeguarding Statement 2021

SEND Policy 2021

Remote Education Policy

Staff Development Policy

Health and Safety Policy