Wootton Bassett Infants' School

Science Policy

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Approval Level:	HT
Issue Date/Last Amended	September 2026
Review Date:	September 2027
Review Cycle:	Annually

Introduction

Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

Aims and Objectives

Science at Wootton Bassett Infants' aims to enable children to:

- Be observant, curious and caring about our environment.
- Work individually and cooperatively, listening to, and valuing, the opinions of others.
- Can observe, question, hypothesise, plan, measure, construct a fair test, evaluate and communicate conclusions.
- Begin to know and understand the life processes and living things.
- Begin to know and understand materials and their properties.
- Begin to know and understand physical processes.
- Communicate their knowledge and understanding in a variety of ways.
- Use the outdoors as a resource for scientific investigations and enquiry.

Science Curriculum Planning

Science is taught weekly and as appropriate to the age and needs of the children. This is ususally as a discrete lesson and sometimes as an integrated element of the on-going topic work. We start each lesson by discussing what is science and all children are encouraged to join in with this introduction.

"Science is learning about the world around us (make a world in front of you).
When we learn science, we become scientists (point to ourselves).
Scientists learn by looking closely (hands over eyes like binoculars), asking questions (pondering face), experimenting (action of pouring), describing (two fingers come away from mouth) and recording (writing action).
Today we are going to be scientists."

Children may also look at pictures to help them recognise that science is a wide range of topics and not just a stereotypical scientist in a white lab coat. Most lessons then start with a quick visual recap and discussion of previous learning using our four squares method. The teacher asks open ended questions such as 'what can you tell me?' this time is used to elicit current understanding and to address any misconceptions.

All children will be provided with a wide variety of opportunities and contexts in which to develop their science skills as well as extending their capabilities in other areas of the curriculum. They will be using and developing language, using mathematical skills such as measuring and data handling, and may involve

many other areas such as art, drama, music, technology and ICT. Opportunities for children to apply their learning outside the science lessons are encouraged and cross-curricular links are made wherever possible. Purposeful speaking and listening in science is encouraged. Relevant vocabulary for that term is noted on our science progression in curriculum and skills and referred to throughout the lesson.

In reception science is studied as part of UW within cross curricular topic work throughout the year. Children develop their skills of observation, prediction, investigation and discussion, which will come in useful not only in science, but in subjects such as geography, history and computing. Our long-term plan includes the strands of UW to cover in each term. The teachers are constantly adapting this plan to keep within the current children's interests and level of development. These plans can also be found on our curriculum map as well as reception medium term plan. The EYFS continuous provision is constantly being evaluated and improved to ensure UW is readily available for child-initiated learning.

Children will experience using materials to build, explore plants and how they grow, look at how animals and humans look like and change. They will engage in water and sand play to aid their understanding of scientific aspects. Teachers will also make sure scientific vocabulary is used and displayed when engaging in a science activity.

We aim to introduce a range of scientists from term 3 in EYFS and then every term throughout their time at WBI so our children build a foundation for long-term interest in STEM careers, challenge stereotypes about who can be a scientist, and helps them connect scientific concepts to real-world applications.

In KS1 the teachers will use their own skills and knowledge to ensure lessons are engaging and relevant to their current class. Teachers endeavour to link science learning within their topic for that term and may use 'Collins Connect', 'Hamilton Trust' or Oak Academy for ambitious and exploratory learning. Teachers will also make sure scientific vocabulary is used and displayed when engaging in science lessons and will continue to introduce the children to a range of well-known scientists for each strand of science. The skills they are learning in that lesson are displayed so they are made explicit to the children. Teachers will also make sure scientific vocabulary is introduced and referred to when engaging in a science lesson.

Teaching and Learning Style

We use a variety of teaching and learning styles in our science lessons. Our principal aim is to develop children's knowledge, skills and understanding. Sometimes we do this through whole class teaching, while at other times we engage children in an enquiry-based research activity which may be in partners, small groups or individually. We ask children to ask as well as answer scientific questions.
We recognise that there are children of widely different scientific abilities in all classes and we provide suitable learning opportunities for all children matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- Setting common tasks which are open-ended and can have a variety of responses.

- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks).
- Grouping children by ability and setting different tasks for each ability group.
- Providing different resources, matched to the ability of the child.
- Using adults in the class to support the work of individual children or groups of children who may scribe the children's thoughts and questions for them.

Assessment and Recording

We use formative assessment throughout the lesson to assess our children by talking to them and asking questions (open and closed). We look at their written recording, observe children carrying out practical tasks and record their relevant comments and questions. At the start of each science lesson, we use the four squares approach to revisit previous learning and discuss a relevant picture. We can use this time to question specific children or to reinforce previous teachings. At the end of each scientific strand, KS1 teachers will make a judgement using an assessment sheet which uses a 'best fit' approach to judge where the children are at. We use the vocabulary of 'Working Towards', 'Expected' and 'Greater Depth'. We recognise that there will not be written recorded work for each science lesson as we want science to be as practical as possible. However, we do expect there to be at least 3 or 4 pieces of recorded work or evidence for each term to support teachers to make reliable judgements on the children's attainment.

At the end of KS1, Year 2 teachers have to submit a teacher assessment. Even though there is no statutory guidance for greater depth in science, we feel that we do not want to limit what our children can learn and so have created what we want a greater depth child in science to look like. In EYFS, class teachers assess their children against Understanding the World early learning goal and record their attainment in the Foundation Stage Profile.

Resources and Equipment

Within our school resources and equipment are continuously being developed and extended. The resources for science are stored centrally in the new build. There are also a number of science topic books in the library to support research. All classrooms have science software installed and all laptops and classroom computers can access the internet for on-line resources.

Equal Opportunities in Science

Scientific work of an appropriate level will be made available to each child, without prejudice, whatever the age, ability, sex or ethnic origin and we celebrate these differences through our learning about different scientists.
Teaching methods and styles take account of the diversity of pupils.
Our multicultural policy ensures that the principles and practice of diversity and race equality are integrated into teaching and learning.

Health and Safety

Teachers are aware of risks involving:

- Handling glass
- Hot water and hot objects to be handled with care
- Knives and scissors handled with care
- Children with food allergies (in line with Benedict's Law)

For full details refer to the school's Health and Safety document