Verwood C of E First School & Nursery
Science Policy
13th November 2019

This policy outlines the purpose and management of the Science taught and learned at Verwood C of E First School and Nursery. The school policy reflects the consensus of opinion of the teaching staff. The implementation of this policy is the responsibility of all the teaching staff.

The importance of and entitlement to 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 (*National Curriculum).*

Science at Verwood First School aims to teach our children the skills, knowledge and understanding they need to question and understand concepts and phenomena that occur in the world around them and equips them with the motivation to seek explanations for these. Children learn the skills required for scientific enquiry and they will begin to appreciate the way science will affect their future on a personal, national and global level. In line with the statutory requirements of the school curriculum which must be balanced and broadly based, our school commits to ensuring that every pupil at every stage of learning has regular and appropriately challenging and engaging learning in Science which is informed by the National Curriculum. In addition we will ensure that what our pupils learn in Science and how they learn it not only inspires and stretches them intellectually but also contributes to their spiritual, moral, cultural and physical development and helps to prepare them for the opportunities, responsibilities and experiences of life in the 21st century.

Aims and Objectives

Through the framework of the National Curriculum 2014, science aims to:

- stimulate children's interest and enjoyment of science
- to build enthusiasm and sense of wonder about the world
- through practical learning, develop skills of observing, predicting, investigating, interpreting results and questioning.
- develop scientific knowledge and conceptual understanding through biology, chemistry and physics.
- To develop a scientific understanding through different types of scientific enquiries to help them answer questions about the world around them.
- To develop skills of co-operation by working with others.
- Encourage children to treat the living and non-living environment around them with respect and sensitivity.

- Make cross-curricular links with other subjects where possible

Inclusion, equality of opportunity and differentiation

Differentiation in science planning ensures that tasks are appropriate for all ability levels. Some children will require closer supervision and adult support to allow them to take an active part in scientific learning and practical activities. More able children will be extended through differentiated activities and higher level forms of questioning. All children will be given access to materials and equipment that will support them in their learning in order for them to make progress. All subjects covered will be free from stereotyping to ensure that all pupils are given an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.

Ensuring continuity and progression in learning

To ensure progression and continuity for all pupils, our science curriculum is planned using progression of skills documents for EYFS to Year 4. Our science progression of skills is split into two documents; one for the curriculum's knowledge based objectives; the other for the skills-based working scientifically aspect of the curriculum.

- In the Foundation Stage and at Key Stage 1 our subject expectations enable pupils to learn and consolidate the fundamental attributes of being a scientist. At this stage there is a particular focus therefore on ensuring that our pupils are able to observe changes over time, notice patterns, group and classify, carry out simple comparative tests, find things out using secondary sources of information and communicate ideas. The knowledge-based objectives are based upon animals including humans, basic needs of plants, seasonal changes and materials.

- During Lower Key Stage 2 our expectations increase proportionately as we help pupils to build upon the skills and knowledge learnt in Key Stage 1. Pupils are given the opportunity to carry out simple investigations and record findings with greater independence and begin interpreting and presenting these. By the end of Lower Key Stage 2, pupils will also be using their findings and conclusions to ask further questions and suggest further investigations.

Approach to learning and teaching

In the foundation stage, science is an integral part of 'understanding the world'. Science is taught through the school's 6 'umbrella topics' that each year group will experience at the same point during the year, enabling a clear pathway for pupils during their time with us. In order to meet the curriculum, we use a variety of approaches to teaching. In topics that lend themselves to science-based learning, science learning may take place in weekly topic lessons, guided reading activities, research and extended writing activities, as well as practical investigations. In topics that have fewer links to science objectives, science days may be used in order to continue building on the working scientifically objectives.

Wherever possible, science links to topic work and has cross-curricular links. Teachers have the professional flexibility to plan from a variety of resources to ensure that the National Curriculum objectives are met and to maximise learning opportunities for pupils. Our long term plans which can be found on the school website, outline how we have organised science learning opportunities across and within year groups.

In science, the pedagogy underpinning learning is a key question led enquiry approach, which encourages our pupils to take increasing responsibility for their learning, think independently and achieve challenging outcomes. Through this enquiry approach, pupils are encouraged to observe, predict, investigate, interpret, conclude and produce further questions about the world around them. We recognise that simply knowing more information in itself will not enable our pupils to progress as young scientists capable of making links, seeing things more conceptually and recognising the significance of attitudes and values in shaping the world in which they live. To this end we identify important topics, issues, places and themes informed by the guidance of the National Curriculum to ask important questions about and then plan enquiries which are carefully structured.

In science, teachers:

- Design activities which help children to develop their understanding of key scientific concepts
- Design activities which help children to develop skills of working scientifically, such as investigating, observing, predicting, questioning, planning, interpreting etc.
- Plan activities for children to use equipment and resources, and learn how to use these appropriately.
- Follow the school's progression of skills document to ensure that knowledge and skills are built upon within and across year groups.
- Determine the children's level of knowledge through the use of cold tasks
- Encourage discussion so pupils can clarify their thinking.
- provide pupils with regular feedback about their learning and about what they need to do next in order to improve;
- should determine the pupils' levels of knowledge and understanding, before, during and after units of learning;
- When possible, topic related visits are undertaken and outside agencies used to enrich pupils' geographical understanding.
- Encourage children to record their learning in a variety of ways including diagrams, posters, annotated drawings, reports, graphs and charts.
- Provide children with opportunities to learn independently, with a partner and in small groups.

Summative Assessment

Science comes under the 'Understanding the World' area of learning with focus on understanding people and community and people in the wider world. Children are assessed against the Early Years Foundation Stage profile. Opportunities are facilitated whereby children begin to make sense of their physical world and their community by exploring, observing and asking questions about people, places and the environment. At the end of the academic year, practitioners indicate whether children are meeting, exceeding or not yet reaching the expected level within this area of learning. The result of children's EYFS profile is shared with parents at the end of the year.

At the end of each term, assessments will be made and logged using the school's agreed format for assessment of subjects. We will also make and report to parents a summative judgement about a pupil's attainment in science at the end of each academic year, where pupils will be given a judgement of either Working Towards (WT), at Age Related Expectation (ARE) or working at Greater Depth (GD). This is shared with parents in their child's annual report.

Responsibilities of Subject Lead

The Science subject lead has the responsibility to take a lead in developing Science further across the school; monitoring the effectiveness of teaching and learning; and the use of resources. The Science subject leader is responsible for the monitoring of the Science curriculum; monitoring may be through a range of methods including:

- assessment of pupils' learning
- scrutiny of pupils' learning and teachers planning across the school for progression and to identify strengths and areas for development
- discussion amongst staff and staff feedback
- observations
- interviews with pupils

Policy Review

This policy will be reviewed in line with the school's policy review programme.