



Walmsley C.E. School

'Growing as a family to flourish in God's Love.'



Walmsley C of E Primary School

Science

Curriculum Statement

Date of Issue: January 2025

Next Review Date: January 2028



Curriculum Statement Cover Note

Title of the Policy	Science Curriculum Statement
Summary/Reason for bringing to Governing Board for Approval	Review
Statutory Requirement	No
Decisions to be made / recommendation on options	
Name of the author	A Catterall
Date written	January 2025
Date for Review	January 2028
Policy/Procedure to be published on the school website	No
Amendments/Updates	No substantive changes

Vision

Growing as a family to flourish in God's love.

Guided by God, we will provide rich, memorable learning experiences which will build character in each individual child.

We will ensure that all children are able to flourish and experience God's wonderful world in all its fullness.

Together as a family we aim to love, respect, aspire, trust, show compassion and be resilient.



Resilience



Trust



Aspiration



Hope



Respect



Love



"The Important thing is to never stop asking questions"
(Albert Einstein)

Intent

At Walmsley we wish for science to inspire children to ask questions about the world and beyond, and to give the children opportunities to then lead their own enquiries to find answers. Science at Walmsley will take children on a journey to developing their skills through 5 key lines of enquiry; Fair Testing, Observation over Time, Classification, Pattern Seeking and Second Hand Research. Children will continue to develop and extend their learning through hands-on, exciting and engaging opportunities both inside and outside of the classroom. With this, they will be able to explain their understanding with increased scientific language as they progress through their learning journey. With broad and wide ranging experiences we aspire to raise the science capital of our children so that they see the relevance of science in everyday life and take positive experiences forward with them into future education.

National Curriculum

The national curriculum aims to allow our pupils to develop a deeper understanding of a wide range of scientific ideas. In KS1 we aim to let our pupils experience and observe phenomena, looking more closely at the world around them. They will be encouraged to be curious and ask questions about what they notice. They will be helped to develop their understanding of scientific ideas by exploring the 5 lines of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They will begin to use simple scientific language to talk about what they have found.

When the children enter KS2 we aim to let our pupils broaden their scientific view of the world around them. They will do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They will ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They will draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. In years 5 and 6 they will encounter more abstract ideas and begin to recognise how these ideas help them to understand



and predict how the world operates. They will also begin to recognise that scientific ideas change and develop over time. They will select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils will draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

The science curriculum also allows children the chance to work scientifically through practical scientific methods, processes and skills taught through the teaching of the National Curriculum content.

The objectives of teaching science are to enable children to:

- Ask and answer scientific questions;
- Plan and carry out scientific investigations, using equipment (including ICT) correctly;
- Know and understand the life processes of living things, including plants and animals as well as understanding the importance of leading a healthy lifestyle;
- Know and understand the physical processes of materials, electricity, light, Sound, magnets and natural forces;
- Know about the nature of the solar system including the earth;
- Evaluate evidence and present their conclusions improving clarity of understanding and accuracy.

Foundation Stage

We teach science in the reception class as an integral part of the topic work covered during the year. We relate the scientific aspects of the children's work to the objectives set out in the section of the Early Learning Goals entitled Knowledge and Understanding of the World, which underpins the curriculum planning for children, aged three to five. Examples include floating and sinking activities, exploring magnets and seasonal observations.

Teaching and learning style

We use a variety of teaching and learning styles in science lessons and have a passion for the creative curriculum promoting excellence and enjoyment. Our principal aim



is to develop children's knowledge, skills and understanding. Sometimes this is done through whole class teaching, but priority is given to child led, enquiry-based/research activity. We encourage children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They use ICT in science lessons where it enhances their learning. They take part in speaking and listening activities when they present their findings to the rest of the class. They engage in a wide variety of problem solving and investigatory activities. Wherever possible we involve children in real scientific activities which are enhanced by utilising our school garden and through Woodland experiences for the KS1 children.

We recognise that in all classes children have a wide range of scientific abilities and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child.

We achieve this in a variety of ways by:

- Setting open ended tasks with a variety of responses.
- Setting tasks which challenge and push children out of 'their comfort zone'.
- Providing resources with differing complexity
- Encourage children to work in mixed ability groups and scaffold support where necessary.
- Using SNAs and TAs to support individuals or groups (taking into account IEPs and individual targets).

Science Curriculum Planning

The school uses the national scheme of work for science as the basis of its curriculum planning. Teachers use a rich variety of resources to supplement this planning.

We carry out curriculum planning in science in three phases (long term, medium term and short term). The long term maps the scientific topics for each term during the key stage.

Our medium term plans, which are based on the national scheme of work in science, give details and structure of each unit of work for each term. The science subject leader keeps and reviews these plans. Lessons have been carefully sequenced to ensure that the necessary scientific knowledge and skills are developed in each year group.

The class teacher is responsible for writing lesson plans for each lesson (short term plans). These plans list key learning objectives from the medium term frame and



activities are matched according to the individual teacher's assessment of each cohort and aim to promote the scientific principles of the school.

In order to promote the skills required for 'working scientifically' across all 5 lines of enquiry staff have been provided with skills progression maps. These to help inform planning and ensure children are developing the necessary scientific skills.

The contribution of science to other curriculum areas

English

Science contributes to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations through scientific experiments. They develop their writing skills through writing reports and projects and recording information.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weight and measures, they are learning to use and apply number. Through working on investigations they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many answers and conclusions involve numbers. Science also helps children to practise the art of reasoning which is a vital part of the new Maths curriculum.

Personal, Social and Health education

Science makes a significant contribution to the teaching of PSHE and citizenship. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example children study the way people recycle material and how environment changes for better or worse. Secondly, the subject gives children numerous opportunities to explain and discuss.

Science and ICT

ICT enhances the teaching of science in our school significantly and there are some tasks where it is particularly useful. It also offers ways of learning which are not possible with conventional methods. Software is used to animate and simulate scientific concepts and simulates process allowing children to investigate in a virtual reality. Data loggers enhance our ICT rich school in order to produce data in the form of tables and graphs. ICT is used to record, present and enables our children to



modify and evaluate their work, improving presentation. Children learn how to find, select and analyse information on the internet and on other media.

Assessment for Learning

Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it and uses this assessment to plan for future learning. Older children are encouraged to make judgements about how they may improve their work/expand their thinking. Each unit includes an assessment lesson from the TAPS assessment pyramid. Staff are encouraged to use this lesson as well as the exemplification materials and examples of children's work provided by TAPS to support their overall judgement at the end of each unit against the national curriculum outcomes.

Resources

We have sufficient resources for teaching all units in the school. We keep these in a central store which is clearly labelled and regularly audited. Reading areas within each class include non-fictional scientific texts for children to enjoy, which contain valuable science reading material to supplement the children's knowledge and develop their research skills. Our computer software, iPad apps and internet access supports our children's learning too. We make links with outside agencies where possible to give children a wider opportunity to interact with more advanced scientific equipment.

Monitoring and Review

It is the responsibility of the subject coordinator to monitor the standards of children's work and the quality of teaching in Science. The subject coordinator is also responsible for supporting colleagues in their teaching, being informed of current developments in the subject and providing the lead for science in school. The subject coordinator is allocated time for fulfilling the vital task of reviewing samples of children work, visiting classes and observing science teaching.