

Palace Wood Primary School

Science Policy



Palace Wood Primary School

Written by	Claire Vincett
Ratified by Governors	Autumn 2018
Date for Review	Autumn 2021

This policy has been impact assessed by Claire Vincett in order to ensure that it does not have an adverse effect on race, gender or disability equality

Vision

Science is a highly valued area of the curriculum at Palace Wood Primary school and is taught in line with the new National curriculum and in KS2 through a programme designed by Empiribox. Through Science we aim to develop curiosity, enjoyment, skills and a growing understanding of scientific knowledge in all of our pupils by allowing them to raise questions and investigate the world in which they live. As a result, children gain a solid scientific knowledge and understanding as well as developing the skills necessary for testing and investigating.

What is Science?

Through the study of: Physics, Biology and Chemistry, Science is understanding the world around us.' Science helps children to explain what is occurring, predict how things will behave, and analyse causes. 'Science has changed our lives and is vital to the world's future prosperity.'

Aims

The aims of teaching Science at Palace Wood are:

- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- To develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- To equip with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Working Scientifically

Working scientifically specifies the understanding of the nature, processes and methods of Science and underpins the teaching of Science at Palace Wood Primary school.

When working scientifically, skills are embedded into the curriculum through the following lines of enquiry:

- observing over time
- pattern seeking
- identifying
- classifying and grouping
- comparative and fair testing (controlled investigations)
- researching using secondary sources.

Curriculum and Cross curricular links

All national curriculum elements are taught through potential links with other subjects. Where possible, links with Science have been made. We also strive to look for opportunities for first hand experiences and plan these when the link is strong and enhances the curriculum and knowledge of the children involved.

In KS2 the programme of study is set out as follows:

YEAR	Autumn Term	Spring Term	Summer Term
	Skills Focus: Planning	Skills Focus: Recording Data	Skills Focus: Evaluation

First	Physics Forces and Magnetism	Chemistry The Particle Theory	Biology Plants and Photosynthesis
Second	Physics Energy and Sound	Chemistry Chemical Change	Biology Human Health and Fitness
Third	Physics Electricity	Chemistry Geology, Mixtures and Separation	Biology Environment, Ecology and Evolution
Fourth	Physics Light	Chemistry Acids and Alkalis	Biology Human Body and Senses

The Key Stage curriculum is taught across the key stage on a 4 year rolling programme.

At Palace Wood we believe that speaking and listening is a key factor in developing children's scientific vocabulary and articulation of clear and precise scientific concepts. Speaking and listening is encouraged and assisted in every lesson to encourage children to make their thinking clear, both to themselves and others. Teachers also ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Inclusion and equal opportunities

Teachers should aim to give every pupil the opportunity to experience success in learning and to achieve as high a standard as possible to fulfil their potential in the following ways:

- To use medium term plans to prepare classroom activities to challenge and involve all pupils
- To be aware about different learning styles and the need to allow pupils to be able to work in their preferred learning styles for some of the time
- To use materials for teaching which avoid stereo typing, and bias towards race, gender, role or disability
- To deal with such issues clearly and sensitively if they arise
- Provide learning opportunities for rapid graspers that not only extend their knowledge, but deepen their existing understanding
- Differentiate work, including lines of scientific enquiry appropriately so that SEND children are able to access the concepts and ideas covered, considering alternative methods of recording
- Differentiate work appropriately for EAL children so that they are able to access the concepts and ideas covered, considering alternative methods of recording or additional resources

Resources

All resources have been listed on Medium Term Plans and linked specifically to individual lessons. A generic stock of equipment (in particular equipment for lines of enquiry) is stored in the Science Cupboard and can be accessed when necessary.

If there are any questions or requests for additional resources, then this is done via the Science Leader.

In KS2 all resources are provided by the company Empiribox unless they are perishable then the school will source these. The resources are delivered in the first week of term and collect in the last.

Assessment

At Palace Wood in KS1 we use a tracking grid at the end of the unit to assess whether the children have achieved the expected learning for their age. This is shown using a scale of 1 to 3. 1 used to show emerging, 2 expected and 3 exceeding. This grid follows the cohort of children through the school and is then used to help pitch the starting point of the unit that follows and also provides supporting evidence when making an overall judgement of attainment at the end of each key stage.

In KS2 we use the tracker grids and assessment papers for each unit provided by Empiribox. A pre-test analysis tracker grid is completed and a post one is done for comparison.

Recording of work and marking

Children should record work in their Science books if it provides the best opportunity to capture the learning. It should focus on the correct use of Scientific vocabulary.

There should also be regular evidence of how the working scientifically skills are being embedded into the curriculum. This can and should be recorded through a variety of means such as:

- Written work
- Photographs
- Explanations of activities
- Presentations
- Project work
- Planning boards
- Investigational work
- Concept cartoons

Where appropriate this work should be marked, following the school's marking policy.

The role of the Science Leader is to:

- To co-ordinate the teaching of science within the school
- To monitor the use of the policy and medium term plans
- To liaise with Empiribox on the delivery and posting of resourcing and use of the scheme.
- To ensure continuity and progression of teaching and learning throughout the school
- To arrange in-service support, advice and assistance to staff
- To order and maintain resources for in use in each year group in KS1
- To provide an action plan, linked to the school's SDP to improve progress and attainment in the subjects
- To support staff and inform them of courses and developments in science
- To liaise with other leaders when necessary
- To support class teachers in the assessment of the subject.
- To analyse data provide by the tracker grids and look for trends and adapt training, planning or other items based on this analysis.

