



Wood End Park Academy
Science Policy

Introduction

This policy reflects the school's values and philosophy in relation to the teaching and learning of Science.

Science is a foundation subject within the National Curriculum. The aims of teaching Science are consistent with the academy's commitment that all pupils are entitled to an excellent full curriculum.

Wood End Park Academy will provide a high-quality Science education which will help pupils gain a coherent knowledge and understanding of Britain's past and that of the wider world. It should inspire pupils' curiosity to know more about the past. Teaching should equip pupils to ask perceptive questions, think critically, weigh evidence, sift arguments, and develop perspective and judgement. Science helps pupils to understand the complexity of people's lives, the process of change, the diversity of societies and relationships between different groups, as well as their own identity and the challenges of their time.

Subject Intent

In science, we are able to address our learners' curiosity because we explore and answer their questions about scientific processes and concepts. Children will also develop an awareness and understanding of how the world works around us. We embed a deep understanding of the impact science has had on our lives in the past, present and future. We will develop skills of debating as pupils have opportunities to discuss and value different viewpoints, allowing science to further develop pupil's vocabulary through our science vocabulary progression guide. Resilience is built through the offer of investigative and reflective work. We also use science to allow children to apply their learning through other subjects such as by using mathematical skills to record and present data. Depth of knowledge is instilled through the trips and visitors we provide children with. Last but not least, the value of the subject is clear through our named houses in our house point system which are named after significant scientists and are updated regularly to reflect different fields of science and culture. We understand that science helps children raise their aspirations and can inspire the choices they make in their life choices.'

Science in Our Curriculum

The aims of Science in our school are:

- to promote positive attitudes and enthusiasm for Science
- to ensure the progressive development of Science concepts, knowledge, skills and attitudes

Science at WEPA follows the Working Scientifically criteria from the National Curriculum (2014). Children are taught to follow practical scientific methods, processes and skills. These skills are embedded into the science units.

The national curriculum for Science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- 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
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. Science; between cultural, economic, military, political, religious and social Science; and between short- and long-term timescales.

Implementing Science

The minimum amount of Science undertaken should be one unit per half term.

We use a variety of teaching and learning styles in our Science lessons. We believe in whole-class teaching methods and we combine these with enquiry based research activities. We encourage children to ask as well as answer questions about the periods that they are studying. We offer them the opportunity to use a variety of primary and secondary sources such as photographs, reports, artefacts, written memoirs. Children take part in role-play and discussions, and they present their findings to the rest of the class.

We recognise the fact that in all classes there are children of widely-different abilities in Science and we seek to provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this by:

- setting common tasks which are open-ended and can have a variety of responses
- setting tasks of increasing difficulty - not all children complete all tasks
- grouping children by ability in the room and setting different tasks for each ability group
- providing resources of different complexity depending on the ability of the child
- using classroom assistants to support children individually or in groups.

Planning for Science

Teaching staff currently develop their own units of work for this subject. Co-working with a senior leader supports a set of lesson plans being improved from the previous year to achieve even higher outcomes.

Units of work are mapped across the year groups to ensure balance and progression- see our overview at the back of this policy.

Learning questions are planned and delivered to engage the children, drive the learning in the lesson and the work in the lesson builds towards an answer.

Relevant links with other curriculum areas (such as History, Maths) should be made in unit plans.

In planning a unit consideration should be made of the following;

- The aims in the National Curriculum programme of study
- Different scientific enquiry skills developed throughout the unit
- A deep scientific knowledge that can lead to asking and answering questions about different concepts
- Use of a range of scientific equipment
- Opportunities to carry out a range of experiments

Curriculum Coverage

During the Foundation Stage children will work towards the areas of learning set out in the Early Years Foundation Stage that underpin the curriculum planning for children from birth to five.

Science will be practised under the area of learning for 'Understanding of the World'. **Foundation Stage children** will be encouraged to:

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

(Statutory framework for the early year's foundation stage, 2020)

Key Stage One will build on and further develop these skills. *The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types 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 should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.* (National Curriculum, 2014)

During **Key Stage Two**, *the principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should 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 should 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 should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.* (National Curriculum, 2014)

Progression will be ensured by reference to the schemes of work and by each teacher knowing the content that they are required to teach. Continuity will be ensured by all staff conforming to the agreed mode of working as outlined in this policy.

Learning Outcomes

Children will have Science books to record their learning in. All work will be completed at a high standard and teachers will ensure children produce their best. Work in books will aid assessment and progression and good examples of work will be displayed in the classroom and around school.

Examples of work and relevant photographs will be made available to the subject co-ordinator as evidence of work completed and as an aid to monitoring progression and assessment.

Inclusion

In line with the school's Inclusion Policy, each child will have an equal entitlement to all aspects of the Science curriculum. We believe that it is important for all children to experience the range of Science skills and activities. We will use opportunities within Science to challenge stereotypes.

Throughout all Science work, care will be taken to differentiate tasks and teaching styles in order to take into account the whole spectrum of individual needs.

Assessment, recording and reporting

Teacher assessment should concentrate on the aspects of capability in order to inform future teaching and learning. Examples of work will be kept in Science books to demonstrate work completed and progression whenever possible. Each unit has an overview with intent and knowledge goals which describe what children might be expected to know and be able to do. This should help teachers to determine those who are performing to the age-related expectations and making sound progress and those who are performing at a different level. In cases where performance is different to the norm, the learning questions and particularly the learning outcomes should be analysed to inform future teaching to ensure the child is further extended or focused teaching is used where progress has not been made.

At the end of each term, a pupil from each class is awarded the 'Super Scientist' Curriculum Award.

Resources

At present, basic resources are stored in a central Science area with boxes for individual topics kept in each year group. It is the responsibility of the lead teacher in each year group to manage the resources required during their unit and advise the subject co-ordinator if additional resources are required.

In relation to everyday general resources, our aim is to organise classrooms in such a way to promote the development of independent learning. Resources and equipment should be clearly marked and labelled in order to allow visual access to the children.

Safe and tidy working practices are encouraged at all times.

Budget

Managing the funding for Science is the responsibility of the principal.

Each year financial consideration will be given to:

- New equipment investment
- Equipment renewal
- Any new units/ topics that may be taught
- Staff training needs

Review

This policy will be reviewed by the subject leader every four years. Amendments will be made where necessary after consultation with teaching staff and the governing body.

In reviewing teaching and learning that has taken place, we must look for progression in art and design skills, and ensure knowledge about processes and techniques is taught effectively.

A critical aspect of teaching is to review work by asking:

- What worked well in the unit?
- What was the children's reaction to the unit?
- Did it extend the most able?
- How did we help access for those with special needs?
- Did we have any resource problems with the unit?
- What would you change if doing it again?
- What advice would you give other teachers regarding this unit?

Wood End Park Academy's Science Subject Overview

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS						
1	Animals inc humans	Animals including humans/ Seasonal changes	Materials	Plants	Materials	Plants/ Seasonal changes
2	Materials	Animals inc humans	Humans - nutrition, exercise and hygiene	Plants (spaces and locations)	Plants (seed types)	Living things and their habitats
3	Rocks and Soils	Fossils	Plants	Animals inc humans (food groups & diet)	Light and shadows	Forces (magnets, friction and gravity)
4	Electricity - Circuits	Living things & habitats (classifications)	States of Matter	Sound	Animals Inc Humans (Digestion)	Animals Inc Humans (Teeth)
5	Materials	Forces	Living things and habitats	Animals inc humans	Earth, sun and space	
6	Evolution and inheritance	Living things and habitats	Light	Electricity	Animals inc humans	Famous Scientists