Science Policy
September 2023

This Policy was reviewed

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Folville Junior School Science Policy

Intent

We believe science includes the acquisition of knowledge, concepts, skills and positive attitudes. We believe that science promotes communication in a specific and precise language, along with mathematical and logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving.

As their knowledge and understanding increases, they will become more adept in selecting and using scientific equipment as well as collating and interpreting results. They will become increasingly confident in their growing ability to come to conclusions based on real evidence.

Children will learn about scientists who have made a difference in society and think about the role they play in the real world. Then they are more likely to continue to study science and use that learning for work, for family and to contribute as informed citizens.

Science fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. It allows children to develop original ideas and a questioning attitude. In science, pupils are encouraged to be open-minded and to try and make sense of what they see and find out. The main focus of our approach will be through open-ended activities where we encourage children to recognise the need for fair testing.

Aims

- To develop a love of science, to enthuse children and make learning fun.
- To build on children's curiosity and sense of awe in the natural world.
- To ensure children experience all five scientific enquiries; observation, testing, research, classifying and identifying and pattern seeking by becoming scientists in the classroom.
- To make learning purposeful, to make cross curricular links and for children to experience 'real life' concepts. (Maths, English, Computing in particular)
- To increase children's scientific vocabulary and the language of science.
- To ensure children use a range of equipment accurately and safely through hands on investigations and observations.
- To develop learning in the outdoors; to increase children's confidence and natural curiosity of the world around them.
- To give children varied opportunities, through active participation. All children are exploring and following their own lines of enquiry. At times investigations are child led.
- To make sense of the world they live in and understand the processes and reasons why things happen. To understand and make a difference to the world e.g. how to look after the environment, how to stay fit and healthy.
- To develop a range of skills through the working scientifically stand of the curriculum: measuring, analysing, presenting and reasoning.
- To introduce STEM (Science, Technology, Engineering and Maths) into the curriculum so that children can work on project based investigations which involve a range of skills across the curriculum.

Policy and statutory guidance

Working scientifically (Lower Key Stage 2)
Prior Learning (Key Stage 1) Asking simple questions and recognising that they can be answered in different ways Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.
During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.

Year 3	
Plants	Pupils should be taught to: • identify and describe the functions of different parts of plants • investigate the way in which water is transported within plants • life cycle of flowering plants
Living things and habitats	• Group living things in a variety of ways • Use classification keys • Understanding environments and how change can cause danger
Materials	• Rocks and Soils – “street beneath my feet” • Compare and group different rocks. • Describe how fossils are formed • Recognise that soils are made from rocks and organic matter
Magnets	• Compare how things move on different surfaces • Observe magnetic attraction and repulsion • Identify magnetic materials
Light and Sound	• Light • Light to see • Reflection • Danger of the sun • Shadows • Sound • Vibrations • Exploring the working ear • Volume and pitch

Year 4	
Living things and habitats	• Explore and use classification keys • Explore habitats and food chains
Animals including Humans	• Describe functions of parts of the digestive system in humans • Identify the different types of teeth in humans and animals
Materials	• Explore solids, liquids and gases • Describe how mixtures might be separated (including filtering, sieving and evaporating) • Explore reversible and irreversible changes
Electricity	• Identify common appliances that run on electricity • Construct simple series circuit • Naming basic parts (bulb, cell, wires, switches and buzzers) • Explore switches • Conductors and insulators
Light and Sound	• Identify how sounds are made • Associating sound with vibration • Recognise sound vibrations from sound travel through a medium to the ear • Find different patterns between pitch and features of the object that produced it • Find patterns between volume and strength of vibrations • Recognise that sounds get fainter as the distance from source increases

Working scientifically (Upper Key Stage 2)

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Using test results to make predictions to set up further comparative and fair tests
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Science Whole School Topics

	Year 3	Year 4	Year 5	Year 6
Topics	Rocks	Animals including humans	Forces	Animals including humans
	Light	Sound	Properties and materials	Evolution and inheritance
	Forces and magnets	States of matter	Space	Electricity
	Science week	Science week	Science week	Science week
	Animals including humans	Electricity	Living things	Light
	Plants	Living things	Animals including humans	Living things and habitats

Health and Safety

Certain topics of science involve safety issues that teachers will account for. In medium and short-term plans, these safety measures will be considered and details will be given for how to manage those risks.

When working with tools, equipment and materials in practical activities and in different environments, pupils will be taught to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others.
They will be encouraged to manage their environment to ensure the health and safety of themselves and others and to discuss or explain the steps they have taken.