

LKS2



Working Scientifically

‘Working scientifically’ is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study.

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
- finding things out using secondary sources of information

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Pupils should be taught to

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

Pupils should be taught to

- ↳ 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.

National Curriculum Notes

Pupils in years 3 and 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.

They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.

These opportunities for working scientifically should be provided across years 3 and 4 so that the expectations in the programme of study can be met by the end of year 4. Pupils are not expected to cover each aspect for every area of study.