

UKS2



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.

Pupils in UKS2 should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should 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
- finding things out using a wide range of secondary sources of information

Pupils should read, spell and pronounce scientific vocabulary correctly.

Pupils should be taught to

UKS2 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

National Curriculum Notes

Pupils in years 5 and 6 should use their science experiences to: explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

These opportunities for working scientifically should be provided across years 5 and 6 so that the expectations in the programme of study can be met by the end of year 6. Pupils are not expected to cover each aspect for every area of study.