



Science Enquiry

'I can statements'

Types of Scientific Enquiry

Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Skill Statements

Asking questions

Asking questions that can be answered using a scientific enquiry.



Making predictions

Using prior knowledge to suggest what will happen in an enquiry.



Setting up tests

Deciding on the method and equipment to use to carry out an enquiry.



Observing and measuring

Using senses and measuring equipment to make observations about the enquiry.



Recording data

Using tables, drawings and other means to note observations and measurements.



Interpreting and communicating results

Using information from the data to say what you found out.



Evaluating

Reflecting on the success of the enquiry approach and identifying further questions for enquiry.



Year 1

- ★ I can ask simple questions about the world.
- ★ I am beginning to recognise that questions can be answered in different ways.
- ★ I am beginning to make predictions based on my own ideas
- ★ I can perform simple tests with support.
- ★ I am beginning to discuss my ideas about how to find things out.
- ★ I am beginning to observe changes over time
- ★ I am beginning to notice patterns and relationships with support.
- ★ I can collect simple data.
- ★ I can record data in a table my teacher has provided.
- ★ I can show my results in a simple table that my teacher has provided.
- ★ I am beginning to say what I would change about my investigation.



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Year 2

- ★ I can ask questions about the world.
- ★ I can recognise that questions can be answered in different ways.
- ★ I am beginning to make predictions based on my own ideas and observations.
- ★ I can discuss my ideas about how to find things out
- ★ I can independently perform simple tests .
- ★ I can observe closely using simple equipment.
- ★ I can notice patterns and relationships.
- ★ I can gather and record data
- ★ I can use it to help me answer questions
- ★ I am beginning to communicate my findings in a variety of ways.
- ★ I can show my results in a simple table
- ★ I am beginning to discuss my results in relation to my prediction.
- ★ I am beginning to say what I would change about my investigation.



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Year 3

- ★ I can ask *relevant* questions about the world.
- ★ I am beginning to recognise that questions can be answered in different ways using the different types of Scientific Enquiry.
- ★ I can identify new questions arising from the data
- ★ I can make new predictions based on my results
- ★ I can (with some guidance) set up simple practical enquiries, comparative and fair tests
- ★ I can (with support) perform these enquiries & tests
- ★ I am beginning to make systematic and careful observations
- ★ I am beginning to take accurate measurements using standard units and a range of equipment
- ★ I can gather, record, classify and present data in a variety of ways to answer questions
- ★ I am beginning to decide how best to record my findings
- ★ I am beginning to communicate my findings in a variety of ways.
- ★ I am beginning to use scientific evidence from my enquiry to answer questions
- ★ I am beginning to discuss my results in relation to my prediction.
- ★ I am beginning to say what I would change about my investigation.



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Observing and measuring

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Year 4

- ★ I can ask *relevant* questions about the world.
- ★ I can recognise that questions can be answered in different ways using the different types of Scientific Enquiry.
- ★ I can identify new questions arising from the data
- ★ I can make new predictions based on my results
- ★ I can set up simple practical enquiries, comparative and fair tests
- ★ I can perform these enquiries & tests
- ★ I can make systematic and careful observations
- ★ I can take accurate measurements using standard units and a range of equipment
- ★ I can gather, record, classify and present data in a variety of ways to answer questions
- ★ I can decide how best to record my findings
- ★ I can communicate my findings in a variety of ways.
- ★ I can use scientific evidence from my enquiry to answer questions
- ★ I am beginning to discuss my results in relation to my prediction.
- ★ I am beginning to say what I would change about my investigation and pose further questions.



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Year 5

- ★ I can plan different types of scientific enquiry to answer questions
- ★ I can recognise and control variables where necessary.



- ★ I am beginning to use test results to make predictions to set up further comparatives and fair tests.
- ★ I am beginning to look for different causal relationships in my data



- ★ I can begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.
- ★ I can begin to suggest improvements to my method and give reasons.



- ★ I can take measurements, using a range of scientific equipment, with increasing levels accuracy and precision



- ★ I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.



- ★ I can report and present findings from enquiries, including conclusions, causal relationships and explanations of results
- ★ I can choose how best to present data.



- ★ I can identify scientific evidence that has been used to report or refute ideas and arguments
- ★ I can use my results to identify when further tests and observations are needed.



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Asking questions that can be answered using a scientific enquiry.



Making predictions

Using prior knowledge to suggest what will happen in an enquiry.



Setting up tests

Deciding on the method and equipment to use to carry out an enquiry.



Observing and measuring

Using senses and measuring equipment to make observations about the enquiry.



Recording data

Using tables, drawings and other means to note observations and measurements.



Interpreting and communicating results

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Evaluating

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Year 6

- ★ I can plan different types of scientific enquiry to answer questions
- ★ I can recognise and control variables where necessary
- ★ I can identify useful secondary sources
- ★ I can use test results to make predictions to set up further comparatives and fair tests.
- ★ I can look for different causal relationships in my data
- ★ I can recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.
- ★ I can suggest improvements to my method and give reasons.
- ★ I can take measurements, using a range of scientific equipment, with accuracy and precision
- ★ I can make decisions on which observations or measurements to take
- ★ I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.
- ★ I can decide how to record data from a choice of familiar approaches.
- ★ I can report and present findings from enquiries, including conclusions, causal relationships and explanations of results
- ★ I can choose how best to present data.
- ★ I can identify scientific evidence that has been used to report or refute ideas and arguments
- ★ I can use my results to identify when further tests and observations are needed.

