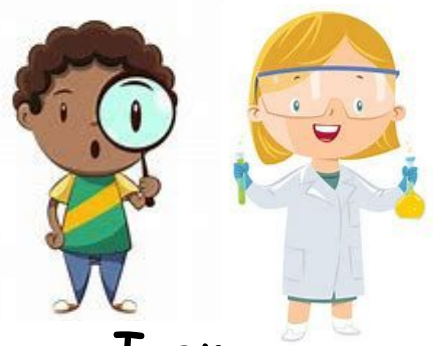
Working Scientifically Skills

Y3 & 4

Ask relevant scientific questions
- I consider my prior knowledge when asking scientific questions.
- I can answer questions posed by my teacher.
-Given a range of resources, I can decide for myself how to gather evidence to answer the question.
- I can identify the type of enquiry that I have chosen to answer my question.

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Sometimes I can decide how to record and present evidence.
- I can record my observations e.g. using photographs, videos, pictures, labelled diagrams or writing.
- I can record my measurements e.g. using tables, tally charts and bar charts .
- I can record classifications e.g. using tables, Venn diagrams, Carroll diagrams.



I am a SCIENTIST

Observe over time and make careful and appropriate measurements
-I can make systematic and careful observations.
-I can use a range of equipment for measuring length, time, temperature and capacity.
-I can use standard units for measurements (ml/l, g/kg/seconds/ hours).

Setting up simple practical enquiries, comparative and fair tests
-I can select from a range of practical resources to gather evidence to answer questions I have generated or my teacher has generated.
- I can follow my plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.

Working Scientifically Skills

Y3 & 4

Using scientific evidence to answer questions or to support findings

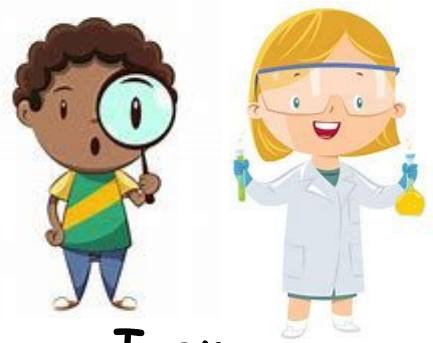
-I can answer my own and others' questions based on observations that I have made, measurements that I have taken or information that I have gained from secondary sources.

Identifying differences, similarities or changes related to simple scientific ideas and processes

-I can interpret my data to generate simple comparative statements based on my evidence.
- I will begin to identify naturally occurring patterns and causal relationships.

Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

- I can communicate my findings to an audience both orally and in writing, using appropriate scientific vocabulary.



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Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

-I can draw conclusions based on my evidence and current subject knowledge.
-I can identify ways in which I adapted my method as I progressed or how I would do it differently if I repeated the enquiry.
-I can use my evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface.
-Following a scientific experience, I can ask further questions which can be answered by extending the same enquiry.

Working Scientifically Skills

Y5 & 6

Planning different types of scientific enquiries to answer questions

- I can independently ask scientific questions to further my understanding
- After I have been given a wide range of resources, I can decide for myself how to gather evidence to answer a scientific question.
- I can choose which type of enquiry I will use to carry out my investigation.
- I can recognise how secondary sources can be used to answer questions that cannot be answered through practical work.
- I can select from a range of practical resources to gather evidence to answer my scientific questions.
- I can carry out fair tests, recognising and controlling variables.
- I can decide what observations or measurements to make over time and for how long.

I am a SCIENTIST

Identifying scientific evidence that has been used to support or refute ideas or arguments

- I can answer my own and others' questions based on observations I have made, measurements I have taken or information I have gained from secondary sources.
- I can talk about how my scientific ideas change due to new evidence that I have gathered.
- I can talk about how new discoveries change scientific understanding.

Taking measurements, using a range of scientific equipment

- I can select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale.
- During an enquiry, I can make decisions e.g. whether I need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further secondary sources (researching); in order to get accurate data (closer to the true value).

Working Scientifically Skills

Y5 & 6

Recording data and results of increasing complexity using scientific diagrams and labels

- I can decide how to record and present evidence.
- I can record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing.
- I can record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs.
- I can record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.
- I can present the same data in different ways in order to help with answering the question

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Reporting and presenting findings from enquiries

- In my conclusions, I can: identify causal relationships and patterns in the natural world from my evidence; identify results that do not fit the overall pattern; and explain my findings using my subject knowledge.
- I can evaluate my enquiry, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.
- I can identify any limitations that reduce the trust I have in my data.
- I can communicate my findings to an audience using relevant scientific language and illustrations.

Using test results to make predictions to set up further comparative and fair tests

- I can use the scientific knowledge gained from enquiry work to make predictions that I can investigate using comparative and fair tests