

By the end of...	Recognise the best type of enquiry to answer a question	Choose equipment, select tests, use secondary sources to decide how to obtain accurate observations and measurements	Obtain observations and measurements using equipment and/or secondary sources	Record observations and measurements	Present observations and measurements	Draw conclusions and make explanations	Evaluate the data collected	Evaluate the process used
KS1	I can ask simple questions and begin to recognise which types of enquiry will be the best to answer a question	I can decide with help, what to find out, observe or measure.  I can perform a simple test.	I can use simple equipment and non-standard units to find things out.  I can observe closely.	I can record what I have found out using e.g. words or simple prepared formats.		I can use my observations and ideas to suggest answers to my questions.		I can talk about how I found out what I found out.
Lower KS2	I can ask relevant questions and recognise which types of enquiry will be the best to answer a question	I can decide what observations and measurements to make and what equipment to use.  I can set up a single enquiry, comparative or fair test.	With help, I can select and use a range of equipment, standard units and information sources to find things out.  I can make systematic observations and accurate measurements.	I can record what I have found out in a variety of ways using e.g. simple scientific language, tables, and labelled diagrams and drawings.	I can present the information using e.g. Venn diagrams, bar charts and simple scatter graphs.	I can draw simple conclusions using what I have found out and make predictions for new values.		I can suggest improvements to the way I carried out the enquiry.  I can suggest further questions
Upper KS2	I can ask relevant questions and recognise which type of enquiry will be the best to answer a question	I can decide what observations and measurements to make (controlling variables where necessary) and what scientific equipment to use to make my measurements.	I can select and use a range of scientific equipment independently and accurately, and use relevant information sources to find things out.  I can take repeated readings when appropriate.	I can decide how to record results of increasing complexity (data and observations) using e.g. tables, and scientific diagrams with tables.	I can present the results (data and observations) in suitable formats e.g. line graphs, bar graphs, scatter graphs and keys.	From my data and observations, I can draw valid conclusions, including casual relationships  I use scientific evidence to support or refute the ideas or argument for my conclusion.	I can look at the results and decide if any observations or measurements are not to be trusted and need to be carried out again.	I can use what I have found out to make suggestions for further enquiries e.g. comparative and fair tests.
KS3	I can ask relevant questions and select and explain which type of enquiry to use, based on observation of the real world, prior knowledge and experience.  I can make predictions using scientific knowledge and understanding.	I can plan and design enquires, taking into account other factors (e.g. types of variables), to make observations and to test predictions.	I can select and use appropriate techniques (including sampling), apparatus and materials during field work, paying attention to health and safety.  I can make observation and measurements using a range of methods for different investigations.	I can select the appropriate method for recording observations for different types of enquiry.	I can present data and observations using appropriate methods, eg. Line graphs, with correctly selected scales and axes and lines of best fit, species distribution maps.	I can draw valid conclusions through applying mathematical concepts where appropriate interpreting observations and data and identifying patterns e.g. lines of best fit.  I can explain what I found out linking this to the prediction and hypothesis.	I can evaluate data showing awareness of potential sources of random and systematic error.	I can evaluate the reliability of methods and suggest possible improvements.  I can identify further questions arising from what I have found out.

