

Science MCA Steps

Steps	Use of data	Understanding of key knowledge	Experiment and investigation skills	Literacy	Numeracy
Step 9	To be able to design appropriate data gathering activities, linked to clear hypothesis and evaluate findings in a clear and concise way	To be able to make links between key concepts to develop a full understanding	To be able to suggest a suitable hypothesis, suggest an appropriate experiment to test the hypothesis and make evaluative conclusions	Be able to justify an opinion giving both sides of an argument in an articulate and extended response	Complete extended written questions through effective selection of data and recognition of correct equation and problem
Step 8	To be able to synthesise data from a range of sources	To be able to describe and explain more complex concepts and ideas linked to experiments or findings	To be able to identify any anomalous data from any practical/Be able to select appropriate apparatus	Understand and use the command words describe and explain providing answers which clearly show correct recognition of key command words	Manipulate data/Recognise trends/Standard form
Step 7	To be able to make predictions and assumptions based on data/Understand the difference between dependent and independent data and know which is represented by x/y axes	To be able to describe more complex concepts and ideas linked to experiments or findings	To be able to suggest a suitable hypothesis related to an experiment/Be able to design a method with limited support/Be able to make a sensible conclusion	Read for meaning, identifying key language/Be able to write extended text to successfully answer a '6' mark question	Correlation/Rearrange equations with confidence
Step 6	To be able to draw appropriate conclusions from data/to recognise anomalies/Understand the term variable	To be able to describe and explain simple concepts with a limited understanding of more complex ideas	To be able to identify patterns in experimental data and recognise values outside the pattern (anomalies)/Be able to select appropriate apparatus for a given method	Be able to write complex sentences and understand the command word 'explain'	Ratio/percentage/fraction/conversion. Rearrange simple equations
Step 5	To be able to read and understand data in a range of formats	To be able to describe simple concepts and knowledge in isolation	To be able to explain the step by step process to experiments and conduct the steps in a scientifically accurate way	Be able to describe observations and simple step experiments using correct vocabulary	BIDMAS, equations, substitution of numbers into equation
Step 4	To be able to read and produce data /Understand the concept of fair testing	To be able to explain key definitions of tier 3 vocabulary	To be able to follow all steps in an experiment safely and accurately	Be able to write simple observations in descriptive terms using capital letters and developing punctuation. Develop understanding of simple command words e.g. Describe	Multiply and divide with confidence
Step 3	To be able to plot basic data on suitable graphs/To understand axes	To be able to accurately label simple diagrams	To demonstrate safe behaviours when conducting experiments/To recognise basic lab equipment	To write simple sentences using capital letters and full stops	Add and subtract with confidence
Step 2	Be able to plot simple x/y variables on given axes	Be able to remember key facts	Can construct simple experiments with guidance and support	With support can identify tier 3 vocabulary	Know when to add/subtract
Step 1	Be able to recognise patterns and basic graphs to show increase and decrease in variables	Be able to state key facts	Can handle equipment safely	With support can read scientific text	Recognise numerical size, be able to demonstrate an understanding of size of number