

	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12
AO1 Remember	Realise simple or obvious effects of science on society.	Remember some basic facts.	Remember topic basic facts.	Use some key words for any topic studied.	Remember a range of basic facts and put them into structured sentences in a topic.	Remember a wide range of basic facts.	Remember key facts about most areas of Science.	Describe key facts about most areas of Science.	Use appropriate terminology in answers (key words, phrases and units)	Use appropriate scientific language when recalling scientific detail	Recall all key areas of Science through accurate scientific explanations.	Recall all key areas of Science
		Use a few scientific words.	Use some correct scientific key words.	State that scientific discoveries have risks and benefits.	Describe some of the risks and benefits of some scientific discoveries.	Use some key words and phrases for any topic studied.	Use appropriate terminology in answers (key words and phrases)	Use appropriate terminology in answers (key words, phrases and units)	Describe relationships between scientific advances, their ethical implications and the benefits and risks associated with them.	Use appropriate SI units on answers Explain the risks and benefits of scientific advances	Use accurate and appropriate scientific language and units	Always use appropriate and accurate scientific language and the correct SI units Explain the relationships between scientific advances, their ethical implications and the benefits and risks associated with them.
AO2 Application	Some knowledge is applied to basic situations	Knowledge is applied to different situations	Apply some knowledge in a range of contexts.	Use theories to make simple explanations of events.	Apply knowledge effectively in a range of contexts.	Use theories to make simple explanations of events.	Interpret data and use it to support evidence.	Apply knowledge effectively in a range of contexts.	Apply knowledge effectively in a range of contexts.	Always apply knowledge effectively in a wide range of contexts.	Apply knowledge effectively in a wide range of contexts.	Consistently apply knowledge effectively in a wide range of contexts.
	Data can be interpreted	Some theories are used to form simple explanations	Interpret data to support evidence. Use a given formula	Apply data to familiar situations	Sometimes use data to support evidence.	Consistently use and sometimes rearrange equations in calculations.	Rearrange equations in calculations.	Use theories to make detailed explanations of events.	Use theories to make detailed explanations of events.	Always use theories to make detailed explanations of events.	Use theories to make detailed explanations of events.	Use scientific theories to make detailed explanations of events.
				Use a given formula and apply the correct units	Consistently use equations in calculations.			Interpret data and use it to support evidence.	Interpret data and use it to support evidence.	Always make effective use of data to support evidence.	Make effective use of data to support evidence.	
								Rearrange equations in calculations.	Rearrange equations in calculations.	Consistently rearrange multi-step calculations	Consistently rearrange equations in complex calculations	
						Understand standard form		Use standard form	Use appropriate sig figs	Consistently rearrange equations in complex unseen calculations		

AO3 Analyse and Evaluate	Identify simple patterns and trends in data	Present data using a bar chart	Describe random and systematic errors	Explain random and systematic error, interpret observations and data to identify patterns	Evaluate basic information to develop simple arguments and explanations.	Write reasoned explanations of a conclusion based on the experimental data	Evaluate information to develop arguments and explanations.	Evaluate data with reference to potential sources of random and systematic error.	Evaluate the reliability of methods in detail	Evaluate information systematically to develop arguments and explanations.	Suggest detailed improvement to methods where reliability may be a concern	FOR ALL RPAs
	State simple conclusions	Describe trends in data State a valid conclusion	Present experimental data using a scatter graph	Draw conclusions consistent with the data	Recognise anomalous results and spot some causes of error in experimental procedures.	Consistently draw conclusions consistent with the available evidence.	Identify some causes of error and uncertainty in data or experimental procedures.	Evaluate the reliability of methods in detail.	Suggest further questions that may arise from results of investigations and data analysis and evaluation.	Draw detailed, evidence-based conclusions. Identify causes of error and uncertainty in data or experimental procedures.	Critically analyse qualitative and quantitative data to draw logical, well-evidenced conclusions	Critically analyse qualitative and quantitative data to draw logical, well-evidenced conclusions  Critically evaluate and refine methodologies, and judge the validity of scientific conclusions
AO3 Experimental Procedures	Ask questions based on the behaviour of the world	Conduct experiments to test prediction Identify some hazards	Make prediction using scientific language and understanding	Describe safety precautions and sampling technique	Identify variables in an investigation	Explain the importance of sampling technique and control variables	Correctly use an appropriate number of decimal places	Accurately make and record observations and measurements	Make more complex and quantitative predictions using scientific knowledge and understanding	Plan valid and reliable experimental methods to test a hypothesis.	Justify the choice of experimental methods and apparatus	Plan, justify, and carry out a safe, reliable and valid investigation to test a hypothesis
				Follow instructions to use apparatus correctly		Accurately make and record observations and measurements	Select and apply appropriate experimental techniques	Plan an experiment and explain the importance of repeat readings		Safely carry out practical investigations by creating a full risk assessment		Explain accuracy, precision, resolution and reliability