

| Blue Pathway | | | | | | | | |
|------------------------------------|---|---|--|--|--|--|--|---|
| Purple Pathway | | | | | | | | |
| Orange Pathway | | | | | | | | |
| | Step 5 | Step 6 | Step 7 | Step 8 | Step 9 | Step 10 | Step 11 | Step 12 |
| AO1 Remember | Remember a range of basic facts and put them into structured sentences in a topic. Describe some of the risks and benefits of some scientific discoveries. | Remember a wide range of basic facts. Use some key words and phrases for any topic studied. | Remember key facts about most areas of Science. Use appropriate terminology in answers (key words and phrases) | Describe key facts about most areas of Science. Use appropriate terminology in answers (key words, phrases and units) | 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 scientific language when recalling scientific detail Use appropriate SI units on answers Explain the risks and benefits of scientific advances | Recall all key areas of Science through accurate scientific explanations. Use accurate and appropriate scientific language and units | Recall all key areas of Science 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 | Apply knowledge effectively in a range of contexts. Sometimes use data to support evidence. Consistently use equations in calculations. | Use theories to make simple explanations of events. Consistently use and sometimes rearrange equations in calculations. | Interpret data and use it to support evidence. Rearrange equations in calculations. | Apply knowledge effectively in a range of contexts. Use theories to make detailed explanations of events. Interpret data and use it to support evidence. Rearrange equations in calculations. Understand standard form | Apply knowledge effectively in a range of contexts. Use theories to make detailed explanations of events. Interpret data and use it to support evidence. Rearrange equations in calculations. | Always apply knowledge effectively in a wide range of contexts. Always use theories to make detailed explanations of events. Always make effective use of data to support evidence. Consistently rearrange multi-step calculations Use standard form | Apply knowledge effectively in a wide range of contexts. Use theories to make detailed explanations of events. Make effective use of data to support evidence. Consistently rearrange equations in complex calculations Use appropriate sig figs | Consistently apply knowledge effectively in a wide range of contexts. Use scientific theories to make detailed explanations of events. Make effective use of data to support evidence. Consistently rearrange equations in complex unseen calculations |
| AO3 Analyse and Evaluate | Evaluate basic information to develop simple arguments and explanations. Recognise anomalous results and spot some causes of error in experimental procedures. | Write reasoned explanations of a conclusion based on the experimental data Consistently draw conclusions consistent with the available evidence. | Evaluate information to develop arguments and explanations. Identify some causes of error and uncertainty in data or experimental procedures. | Evaluate data with reference to potential sources of random and systematic error. Evaluate the reliability of methods in detail. | Evaluate the reliability of methods in detail Suggest further questions that may arise from results of investigations and data analysis and evaluation. | Evaluate information systematically to develop arguments and explanations. Draw detailed, evidence-based conclusions. Identify causes of error and uncertainty in data or experimental procedures. | Suggest detailed improvement to methods where reliability may be a concern Critically analyse qualitative and quantitative data to draw logical, well-evidenced conclusions | FOR ALL RPAs 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 | Identify variables in an investigation | Explain the importance of sampling technique and control variables Accurately make and record observations and measurements | Correctly use an appropriate number of decimal places Select and apply appropriate experimental techniques | Accurately make and record observations and measurements Plan an experiment and explain the importance of repeat readings | Make more complex and quantitative predictions using scientific knowledge and understanding | Plan valid and reliable experimental methods to test a hypothesis. Safely carry out practical investigations by creating a full risk assessment | Justify the choice of experimental methods and apparatus Explain accuracy, precision, resolution and reliability | Plan, justify, and carry out a safe, reliable and valid investigation to test a hypothesis Use all the correct scientific language throughout. |