

Blue Pathway								
Purple Pathway								
Orange Pathway								
	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12
AO1 Remember	Explain the properties of 3 states of matter with reference to the particle model	Describe conservation of mass in change of state	Explain temperature in changes of state	Recognise, give examples and describe the structure of fullerenes	Explain changes of state using energy & bonding	Explain chemical bonding using electrostatic forces	Explain how bonding and properties are linked	Explain the strength of covalent bonds
	Draw diagrams to represent bonds	Explain how electrons are involved in bonding	Identify polymers from their unit formula		Draw dot and cross diagrams for ionic compounds and small molecules	Explain when ionic compounds conduct electricity	Explain how metallic bonding is enabled by delocalised electrons	Explain properties of nanoparticles linking to surface area to volume ratio
	Describe giant structures	Explain the differences in properties of materials	Describe properties of different structures	Explain how properties of materials link to their structure and bonding		Explain the properties of graphene	Explain similarities of graphite to metals	
AO2 Application	Use word equations	Use word and symbol equations	Explain how metal atoms are held together	Use state symbols in equations (s), (l), (g) & (aq)	Describe the purpose of lead tin alloy	Explain why properties of diamond differ to graphite using structure & bonding	Work out charge on ions from their group number	Deduce molecular formula from models/diagrams
	Describe dissolving in terms of particles	Use data to predict the states of substances	Explain properties of metals & non-metals with reference to their structure				Calculate surface area :volume ratio	
	Sometimes use data to support evidence.	Link uses to properties	Define ions	Explain why alloys have different properties to elements	Relate intermolecular forces to properties of polymers			
AO3 Analyse and Evaluate	Evaluate basic information to develop simple arguments and explanations.	Interpret diagrams to determine structure types	Evaluate information to develop arguments and explanations.	Relate the melting points of ionic compounds to the forces between ions	Evaluate the reliability of methods in detail	Describe limitations of models to represent giant structures	Suggest detailed improvement to methods	Explain limitations of diagrams and models
	Recognise anomalous results		Identify some causes of error				Draw detailed, evidence-based conclusions.	Critically analyse data to draw logical, well-evidenced conclusions
AO3 Experimental Procedures	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	Safely carry out practical investigations by creating a full risk assessment	Justify the choice of experimental methods and apparatus	Use all the correct scientific language throughout.
		Accurately make and record observations and measurements		Plan an experiment and explain the importance of repeat readings			Explain accuracy, precision, resolution and reliability	