

AQA Trilogy Chemistry Paper 1		Covered in Lesson	Diagnosis			Revised		
C4.2 Bonding, structure, and the properties of matter			R	A	G	1	2	3
4.2.1 Chemical bonds, ionic, covalent and metallic	Describe how the ions produced by elements in some groups have the electronic structure of a noble gas and explain how the charge of an ion relates to its group number							
	Describe the structure of ionic compounds, including the electrostatic forces of attraction, and represent ionic compounds using dot and cross diagrams							
	Describe the limitations of using dot and cross, ball and stick, two and three-dimensional diagrams to represent a giant ionic structure							
	Work out the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure							
	Describe covalent bonds and identify different types of covalently bonded substances, such as small molecules, large molecules and substances with giant covalent structures							
	Represent covalent bonds between small molecules, repeating units of polymers and parts of giant covalent structures using diagrams							
	Draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane							
	Deduce the molecular formula of a substance from a given model or diagram in these forms showing the atoms and bonds in the molecule							
	Describe the arrangement of atoms and electrons in metallic bonds and draw diagrams the bonding in metals							
4.2.2 How bonding and structure are related to the properties of substances	Name the three States of matter, identify them from a simple model and state which changes of state happen at melting and boiling points							
	Explain changes of state using particle theory and describe factors that affect the melting and boiling point of a substance							
	<b>HT ONLY:</b> Discuss the limitations of particle theory							
	Recall what (s), (l), (g) and (aq) mean when used in chemical equations and be able to use them appropriately							
	Explain how the structure of ionic compounds affects their properties, including melting and boiling points and conduction of electricity (sodium chloride structure only)							
	Explain how the structure of small molecules affects their properties							
	Explain how the structure of polymers affects their properties							
	Explain how the structure of giant covalent structures affects their properties							
	Explain how the structure of metals and alloys affects their properties, including explaining why they are good conductors							
	Explain why alloys are harder than pure metals in terms of the layers of atoms							
	Explain the properties of graphite, diamond and graphene in terms of their structure and bonding							
	Describe the structure of fullerenes, and their uses, including Buckminsterfullerene and carbon nanotubes							