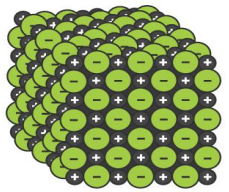
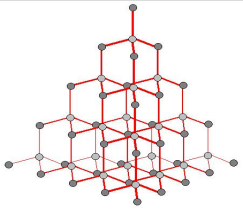
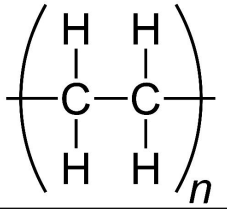
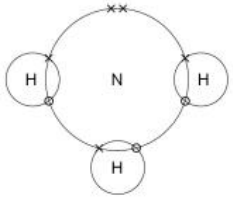
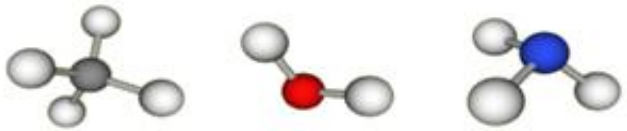
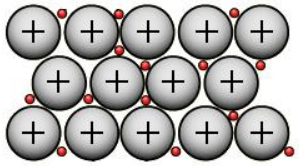
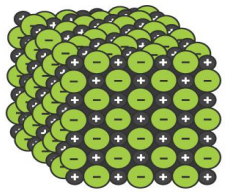
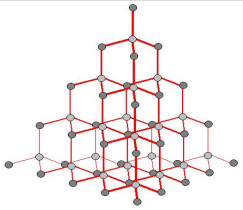
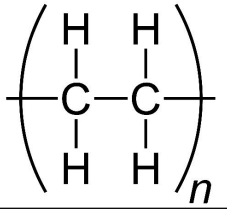
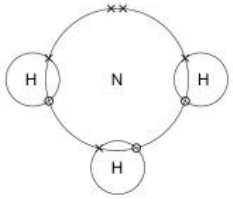
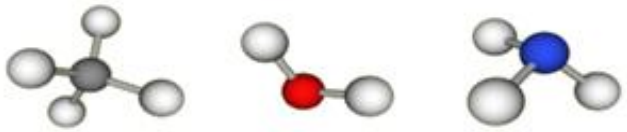
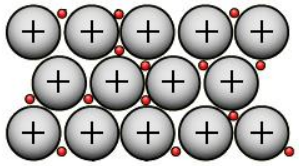
	1	2	3	4	5	6
1	ionic bonds	empirical formula	noble gas electronic structure	non-metal ions		non-metallic elements and compounds of non-metals
2	simple molecules	metals combined with non-metals	molecular formula			delocalised electrons
3	giant ionic lattice	diamond	covalent bonds		silicon dioxide	
4		dot-and-cross diagrams	limitations of dot-and-cross, ball-and-stick, 2D and 3D diagrams to represent molecules or giant structures			periodic table group number
5	shared electrons			electrostatic attraction	e.g. H_2O, NH_3, CH_4	alloy
6	positively charged ions	elements in groups 1 and 2	polymers	metal ions	metallic bonding	transfer of electrons

	1	2	3	4	5	6
1	ionic bonds	empirical formula	noble gas electronic	?		non-metallic elements and compounds of non-metals
2	?	metals combined with	molecular formula			delocalised electrons
3	giant ionic lattice	diamond	?		silicon dioxide	
4		dot-and-cross diagrams	limitations of dot-and-cross, ball-and-stick, 2D and 3D diagrams to represent molecules or giant structures			?
5	?			electrostatic attraction	e.g. H_2O, NH_3, CH_4	alloy
6	positively charged ions	elements in groups 1 and 2	polymers	?	metallic bonding	transfer of electrons

4.2.1 Chemical Bonds: Ionic, Covalent and Metallic Revision Checklist

Can you…	☹	😐	☺
a) state the three main types of chemical bond			
b) define each of the three main types of chemical bond			
c) explain chemical bonding in terms of electrostatic forces and the transfer or sharing of electrons			
d) draw dot and cross diagrams for ionic compounds formed by metals in Groups 1 and 2 with non-metals in Groups 6 and 7			
e) work out the charge on the ions of metals and non-metals from the group number of the element, limited to the metals in Groups 1 and 2, and non-metals in Groups 6 and 7			
f) deduce that a compound is ionic from a diagram of its structure in one of the specified forms			
g) describe the limitations of using dot and cross, ball and stick, two and three dimensional diagrams to represent a giant ionic structure			
h) work out the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure			
i) draw dot-and-cross diagrams for the molecules H_2, Cl_2, O_2, N_2, HCl, H_2O, NH_3 and CH_4			
j) represent the covalent bonds in small molecules, in the repeating units of polymers and in part of giant covalent structures, using a line to represent a single bond			
k) describe the limitations of using dot and cross, ball and stick, two and three dimensional diagrams to represent molecules or giant structures			
l) deduce the molecular formula of a substance from a given model or diagram in these forms showing the atoms and bonds in the molecule			
m) describe metallic bonding through the sharing of delocalised electrons			