

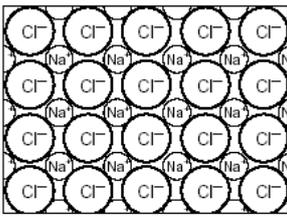
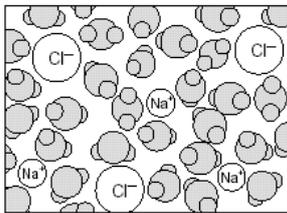


THE TRUTH ABOUT STRUCTURE & BONDING

SIMPLE MOLECULAR substances			<i>If false, what is wrong?</i>
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $O=C=O$ molecule of carbon dioxide, CO₂ </div> <div style="text-align: center;"> $\begin{array}{c} H \\ \\ H-C-H \\ \\ H \end{array}$ molecule of methane, CH₄ </div> <div style="text-align: center;"> $\begin{array}{c} H & H \\ & \\ H-C & -C-H \\ & \\ H & H \end{array}$ molecule of ethane, C₂H₆ </div> </div>			
1	T F	Methane is a gas at room temperature because the bonds between the atoms are weak.	
2	T F	Ethane has a higher boiling point than methane because there are more bonds to break.	
3	T F	Carbon dioxide has a higher boiling point than methane because its atoms are held together by double bonds rather than single bonds.	

GIANT COVALENT substances			<i>If false, what is wrong?</i>
4	T F	Diamond has a high melting point because there are strong covalent bonds between its molecules	
5	T F	Diamond has a high melting point because the atoms are all joined by covalent bonds in a lattice	

METALLIC structures			<i>If false, what is wrong?</i>
6	T F	Copper has a high melting point because there are strong forces of attraction between the nucleus of the copper atoms and the delocalised outer shell electrons	
7	T F	Copper has a high melting point because there are strong forces of attraction between the nucleus of each copper atom and its electrons	
8	T F	The metal conducts electricity because there is a delocalised electron	
9	T F	Copper has a high melting point because there are lots of strong covalent bonds to break	
10	T F	Copper can be bent because the layers of copper atoms can slide relative to each other	

IONIC structures			If false, what is wrong?
Ionic structures as a SOLID		 <p>Sodium chloride as a solid, NaCl(s)</p>	
11	T F	Each molecule of sodium chloride contains one sodium ion and one chloride ion.	
12	T F	Each sodium ion is attracted to one chloride ion.	
13	T F	The ions exist in pairs containing one sodium ion and one chloride ion.	
14	T F	Each sodium ion is bonded ionically to one chloride ion, and then to others by attractive forces.	
15	T F	There is a bond between the ions in each molecule, but no bonds between molecules.	
16	T F	There are no molecules shown in the diagram.	
17	T F	An ionic bond is when one atom donates an electron to another atom.	
18	T F	A sodium ion can only form one ionic bond because it only has one electron in its outer shell.	
19	T F	The sodium ions and chloride ions are not joined to each other, but are attracted to each other by electrostatic attraction.	
20	T F	Each sodium ion is attracted to all the chloride ions surrounding it.	
Ionic structures as a solution		 <p>Sodium chloride as a solution, NaCl(aq)</p>	
21	T F	The ions are separated	
22	T F	The sodium chloride molecules break apart when they dissolve	
23	T F	The sodium and chloride ions move around in Na ⁺ Cl ⁻ pairs.	
24	T F	The solution conducts electricity because electrons can pass through the solution	