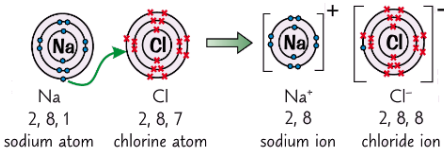
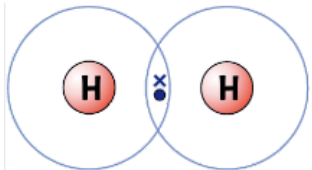


<p><b>C2 Bonding, structure and the properties of matter</b></p> <p><b>AQA Trilogy</b></p>	<p>Ionic bonding</p> <p>Describe ionic bonding</p> <p>What bonds together?</p>	<p>Covalent bonding</p> <p>Describe covalent bonding</p> <p>What bonds together?</p>	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{NI}_2</math></p>
<p>Define the following terms:</p> <p>Ion</p> <p>Electrostatic force</p> <p>Polymer</p> <p>Allotrope</p>	<p>Ionic bonding is represented with dot and cross diagrams</p> <p>Sodium chloride is shown below:</p>  <p>Na 2, 8, 1 sodium atom    Cl 2, 8, 7 chlorine atom    Na<sup>+</sup> 2, 8 sodium ion    Cl<sup>-</sup> 2, 8, 8 chloride ion</p>	<p>Covalent bonding is represented with dot and cross diagrams.</p> <p>The covalent bond between two hydrogen atoms is shown below:</p> 	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{H}_2\text{O}</math></p>
<p>Write the charge of the following atoms when they form ions:</p> <p>Na</p> <p>Mg</p> <p>Cl</p> <p>K</p> <p>O</p> <p>Br</p> <p>S</p> <p>Ca</p>	<p>Draw the dot and cross diagram for magnesium oxide (<math>\text{MgO}</math>)</p>	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{Cl}_2</math></p>	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{CH}_4</math></p>
<p>Give properties of ionic compounds</p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>	<p>Draw the dot and cross diagram for magnesium chloride (<math>\text{MgCl}_2</math>)</p>	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{O}_2</math></p>	<p>Draw the dot and cross diagram to show the covalent bonding in <math>\text{HCl}</math></p>

## C2 Bonding, structure and the properties of matter

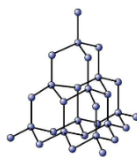
### AQA Trilogy

#### Diamond

Number of covalent bonds from each carbon

Melting point is low / high / very high

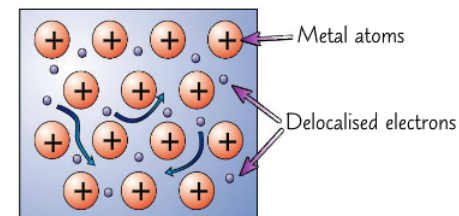
Why doesn't it conduct electricity?



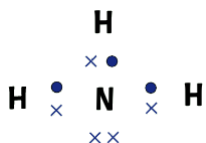
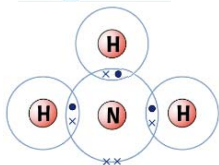
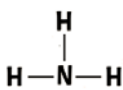
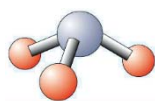
Metallic bonding  
Describe metallic bonding

What bonds together?

Metallic bonding



There are several ways to represent covalent bonds:

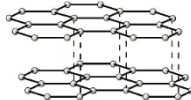


#### Graphite

Number of covalent bonds from each carbon

Melting point is low / high / very high

Why does it conduct electricity?

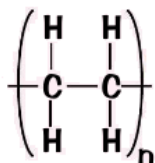


Why are most metals:  
solid at room temperature?

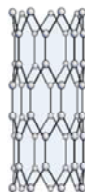
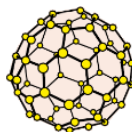
Good conductors of electricity and heat

Draw a diagram to show why alloys are harder than pure metals

The repeating unit of poly(ethene) is shown below. What is the molecular formula of poly(ethene)



Write about the uses of Fullerenes like Bucky balls and nanotubes



Draw a diagram to show why most metals are malleable

	melting point	boiling point
oxygen	-219 °C	-183 °C
nitrogen	-210 °C	-196 °C
bromine	-7 °C	59 °C

Predict the state of:

Bromine at room temperature (25°C)

Nitrogen at room temperature (25°C)

Oxygen at -220°C



The reason that most polymers are solid at room temperature is:

Name the process:  
Solid → liquid  
Liquid → gas  
Gas → liquid  
Liquid → solid

Draw particle diagrams to show a solid, liquid and a gas

solid	liquid	gas

Ethanol melts at -114°C and boils at 78°C. Predict the state at:

-150°C

0°C

25°C

100°C

