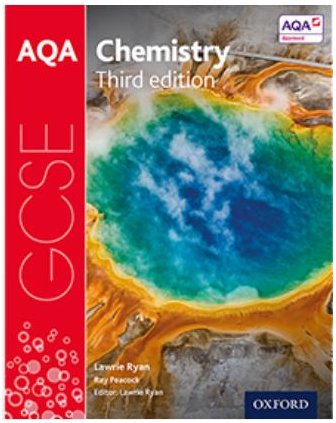
Extended Homework Task

Chemistry C3 Structure and bonding

Aiming for Grade 4

Name ……

Please hand in a completed printed version at the end of the topic



The online text book access to support this homework can be accessed through your Kerboodle account at www.kerboodle.com.

The username is your first initial and sir name (no gap).

If you have not accessed the book before the password will be the same as your username. If you have logged on before you will have changed the password to your own choice.

Click onto the science 9-1 tile and then onto the digital book.

Resources to support this homework can be found in the online student book

- **Structure and bonding pages 36 to 61**

Aims

This activity will give you practice in recognising and describing the three main types of bonding: covalent, ionic, and metallic.

Learning outcome

- After completing this activity, you should be able to complete a fact sheet about the three main types of bonding.

Task

- You will be answering the questions below to complete a fact sheet that could be given to other students on your course. It will name the three types of bonding, explain how each type of bond forms, and give the characteristics of each.

Questions

Choose from the following words to complete paragraphs **a**, **b**, and **c** about the different types of bonding:

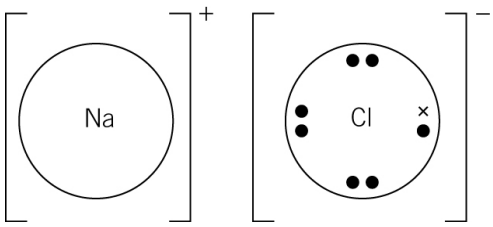
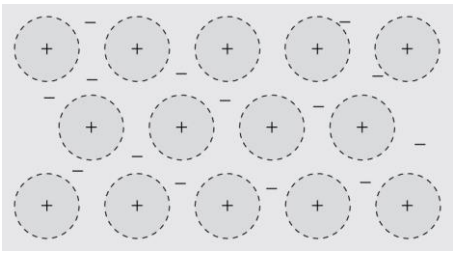
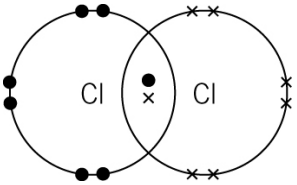
metallic non-metals delocalised atoms ionic attracted
electrons ions outer covalent gain negative

a A _____ bond is made when two atoms share a pair of _____. Usually, forming a covalent bond helps an atom to fill its _____ shell completely. When non-metals bond with other _____ they form covalent bonds. *(4 marks)*

b An _____ bond is formed when two ions are attracted to one another. Ions are formed when atoms lose or _____ electrons. Atoms that gain electrons become _____ ions. _____ that lose electrons become positive ions. *(4 marks)*

c Metal atoms are bonded together by _____ bonds. In metallic bonding all the metal atoms' outer electrons are able to move around all of the positive _____. They are called _____ electrons. All of the electrons are _____ to all of the positive ions. *(4 marks)*

d Link each diagram to the type of bonding it shows. *(2 marks)*

Covalent bonding	
Ionic bonding	
Metallic bonding	

Circle TRUE or FALSE for each of the following statements.
Give a reason for your answer.

e Metals cannot always conduct electricity. *(2 marks)*
TRUE/FALSE

Why? .....

f Diamond is made from carbon atoms covalently bonded together. *(1 mark)*
TRUE/FALSE

Why? .....

g All substances containing covalent bonds have high melting points. *(1 mark)*
TRUE/FALSE

Why?.....

h All substances containing ionic bonds have high melting points. *(1 mark)*
TRUE/FALSE

Why?.....