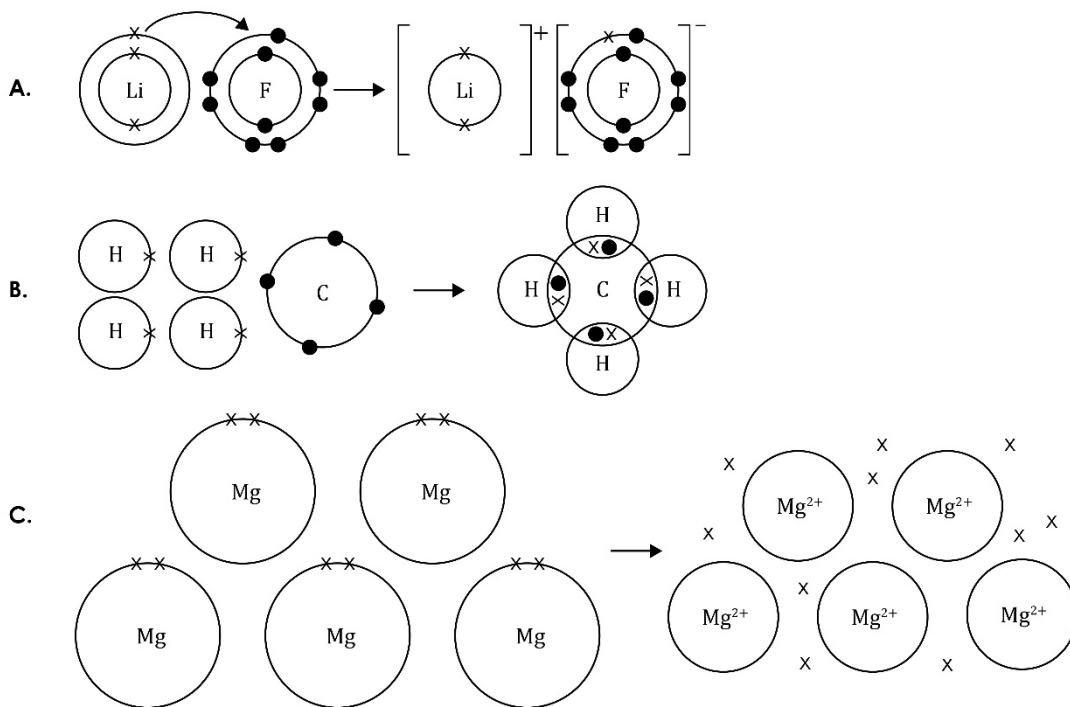




Bonding: knowledge check

1.1 Complete the sentences.



- (a) The type of bonding in figure A is _____.
- (b) The type of bonding in figure B is _____.
- (c) The type of bonding in figure C is _____.

**1.2** Complete the sentences.

_____ bonding – this bond is formed when electrons are _____ from a metal atom to a _____ atom, forming positively charged ions and _____ charged ions. Strong _____ attract the oppositely charged ions to each other.

1.3 Complete the sentences.

_____ bonding – this bonding occurs between _____ atoms. In a single covalent bond, a pair of _____ is shared between two atoms. These shared electrons are found in the _____ shells of the atoms. Each atom contributes one _____ to the shared pair of electrons.

1.4 Complete the sentences using suitable words.

_____ bonding – the electrons leave the outer shells of metal atoms, forming positive metal ions and a 'sea' of delocalised _____ that are free to move. This bond is the result of the strong _____ of attraction between the positive metal _____ and the negative delocalised _____.



Bonding: test myself

Complete the sentences using suitable words.

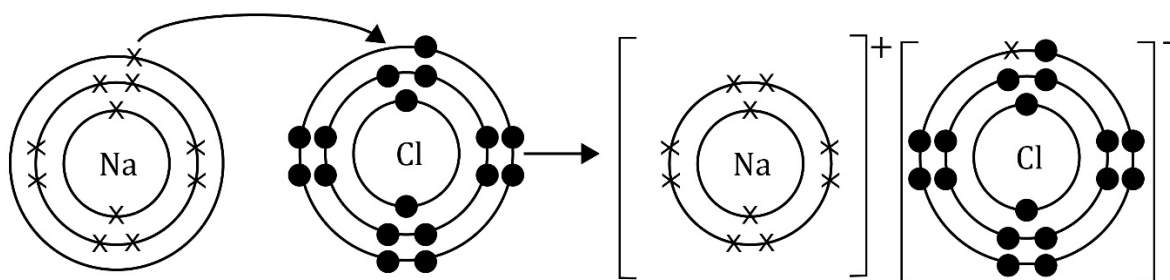
2.1 What types of elements are involved in:

- (a) ionic bonding? _____
- (b) covalent bonding? _____
- (c) metallic bonding? _____

2.2 In which type of bonding are electrons shared?

Electrons are shared in _____ bonding.

2.3 What does the curved arrow represent in the diagram?



The arrow represents an _____ being _____ from one atom to another.

2.4 What type of forces hold the particles together in an ionic bond?

_____ forces of attraction hold the particles together in an ionic bond.

2.5 What does 'delocalised' mean?

Delocalised means that the electrons are _____ to move around.



2.6 What are the charged particles called in an ionic compound?

The charged particles in an ionic compound are called

_____.

2.7 What type of bonds do you find in a compound?

The bonds in a compound can be either _____ or

_____.

2.8 Why are metals good conductors of electricity?

Metals are good conductors of electricity because they contain

_____ that are free to _____ and carry the charge.

2.9 How do ionic compounds conduct electricity when solid, liquid and in solution? Explain your answer.

Ionic compounds cannot conduct electricity when they are in the

_____ state because the ions are not free to move.

They can conduct electricity when they are in a

_____ or when they are

_____ because the _____ can

_____ and carry the charge.

2.10 Why are most covalent substances non-conductors of electricity?

Most covalent compounds do not conduct electricity because they do not

have _____ particles (_____ or

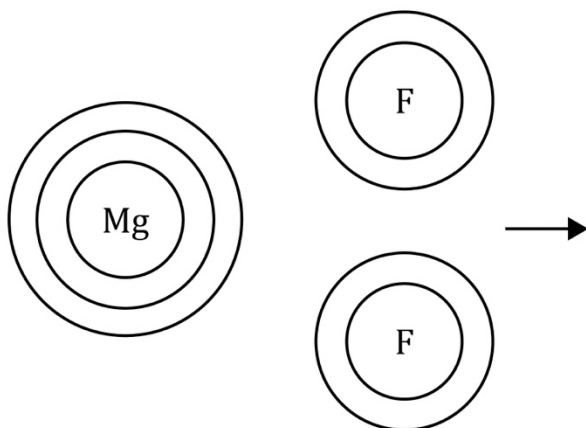
_____) that can move and carry the _____.



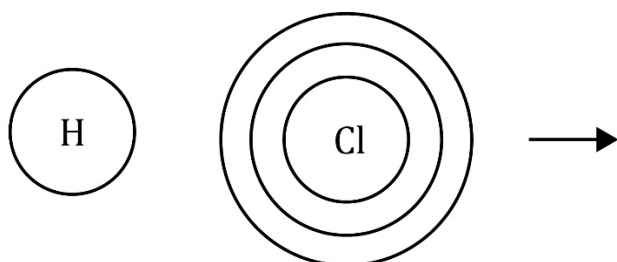
Bonding: feeling confident?

Complete the bonding diagrams.

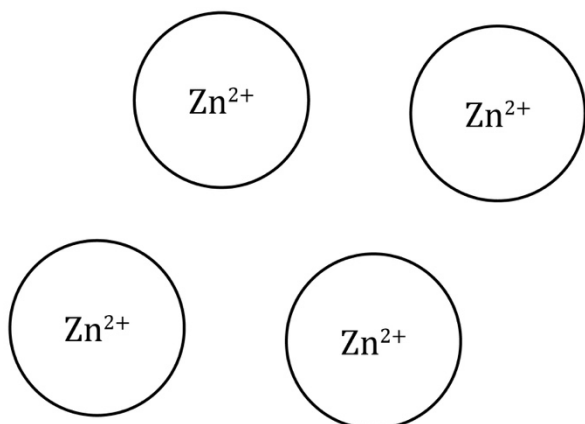
3.1 The reaction between magnesium and fluorine.



3.2 The reaction between hydrogen and chlorine.



3.3 The metallic bonding in zinc.





Bonding: what do I understand?

Think about your answers and confidence level for each mini-topic. Decide whether you understand it well, are unsure or need more help. Tick the appropriate column.

Mini-topic	I understand this well	I think I understand this	I need more help
I can identify ionic, covalent and metallic bonds from diagrams.			
I know that there are ions in ionic bonds.			
I know about electrostatic forces in ionic bonds.			
I know that electrons are shared in covalent bonds.			
I know that there are positive metal ions and negative delocalised electrons in metallic bonds.			
I know the types of elements involved in: <ul style="list-style-type: none"> • ionic bonds • covalent bonds • metallic bonds. 			
I can explain why metals conduct electricity.			
I can explain the conditions required for ionic compounds to conduct electricity.			
I can explain why covalent substances do not conduct electricity.			
Feeling confident? topics	I understand this well	I think I understand this	I need more help
I can draw diagrams to represent ionic and covalent bonds.			