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# Edexcel IGCSE Chemistry

## Topic 1: Principles of chemistry

### **Metallic bonding**

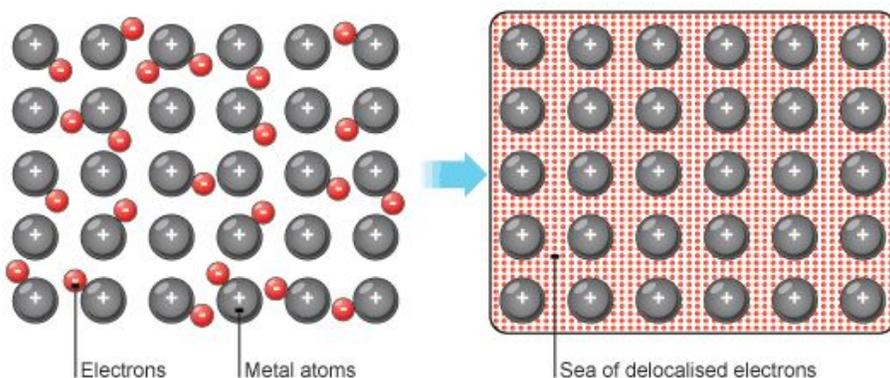
#### Notes





**1.52 (chemistry only) know how to represent a metallic lattice by a 2-D diagram**

- Metals consist of giant structures of atoms arranged in a regular pattern.
- The electrons in the outer shell of metal atoms are delocalised and so are free to move through the whole structure.
- The sharing of delocalised electrons gives rise to strong metallic bonds.



**1.53 (chemistry only) understand metallic bonding in terms of electrostatic attractions**

- Strong electrostatic attraction between negatively charged electrons and positive metal ions

**1.54 (chemistry only) explain typical physical properties of metals, including electrical conductivity and malleability**

- Metals have giant structures of atoms with strong metallic bonding.
  - Therefore, most metals have high melting and boiling points.
  - They can conduct heat and electricity because of the delocalised electrons in their structures.
  - The layers of atoms in metals are able to slide over each other, so metals can be bent and shaped.

