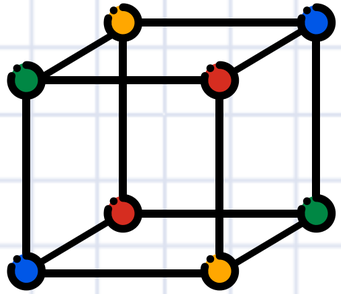
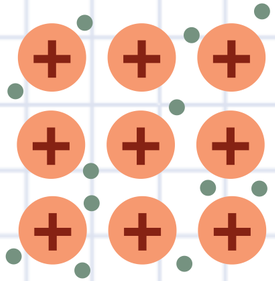
chemical bonding

THE SCIENCE ACADEMY



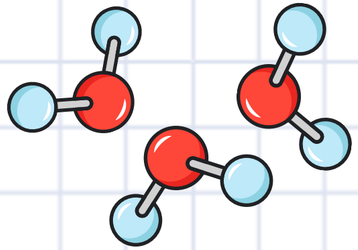
Ionic compound

- Oppositely charged ions held in a giant crystal lattice structure by strong electrostatic forces of attraction
- Conduct electricity in molten and aqueous states due to presence of free moving oppositely charged ions to act as mobile charged carriers
- High melting and boiling points as large amount of heat required to overcome strong electrostatic forces of attraction between oppositely charged ions



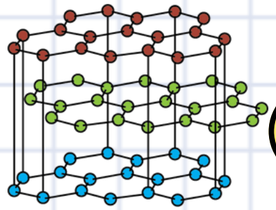
Metal

- Sea of mobile electrons held by strong electrostatic forces of attraction with metal cation layers
- Conduct electricity in solid and molten states due to presence of sea of mobile electrons to act as mobile charged carriers
- High melting and boiling points as large amount of heat required to overcome strong electrostatic forces of attraction between sea of mobile electrons and cation layers



Simple Covalent Compound

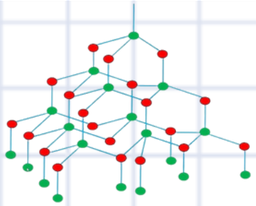
- Exist as molecules held by weak intermolecular forces of attraction. Strong covalent bond is found within molecule.
- Cannot conduct electricity
- Low melting and boiling points as small amount of heat required to overcome weak intermolecular forces of attraction



Graphite

- Conduct electricity in solid and molten states due to presence of delocalised electrons to act as mobile charged carriers
- High melting and boiling points as large amount of heat required to overcome strong covalent bonds

Diamond



- Cannot conduct electricity
- High melting and boiling points as large amount of heat required to overcome strong covalent bonds