**SUMMARY**

- **Metallic bond:**
  - Bond within metals
  - Positive atomic cores surrounded by a sea of delocalised electrons
  - Smallest particle is a positive core ion.

  Metallic bonds are when metal atoms of a metal bond through the attractive force between delocalised electrons and the crystal lattice of positively charged atom rests.

- **Valence electrons** are electrons that are found in the outermost energy level.

- **Dative covalent bonds** are covalent bonds between two atoms where one atom provides both electrons that are shared.

- **Octet rule:** All atoms, with the exception of hydrogen (H) and helium (He), try to have eight electrons, in four pairs of two, surrounding them to achieve noble gas structure.

- **VSEPR** is a model used to predict the shape of a molecule. According to this model, the structural electron pairs (shared pairs and lone pairs) are arranged around the atom so that the angle between them is as large as possible.

- The shape of a molecule depends on:
  - the type of bond;
  - the number of shared electron pairs around the central atom;
  - the lone pairs.

<table>
<thead>
<tr>
<th>Molecule</th>
<th>Shape</th>
<th>Examples</th>
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<th>Shape</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear AX₂</td>
<td></td>
<td>BeCl₂, BeF₂</td>
<td>Trigonal bipyramidal AX₅</td>
<td></td>
<td>PF₅, PCl₅</td>
</tr>
<tr>
<td>Trigonal planar AX₃</td>
<td></td>
<td>BF₃</td>
<td>Octahedral AX₆</td>
<td></td>
<td>SF₆, SCT₆</td>
</tr>
<tr>
<td>Tetrahedral AX₄</td>
<td></td>
<td>CCl₄, CH₄</td>
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</tbody>
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- Electronegativity of an atom is a measure of the tendency of an atom in a molecule to attract a bonding pair of electrons.

- **Non-polar bond:**
  - The atoms will attract the shared pair(s) of electrons equally.

- **Polar bond:**
  - One atom will attract the shared pair of electrons more than the other.
  - One atom becomes slightly negative (δ⁻) and the other atom slightly positive (δ⁺).