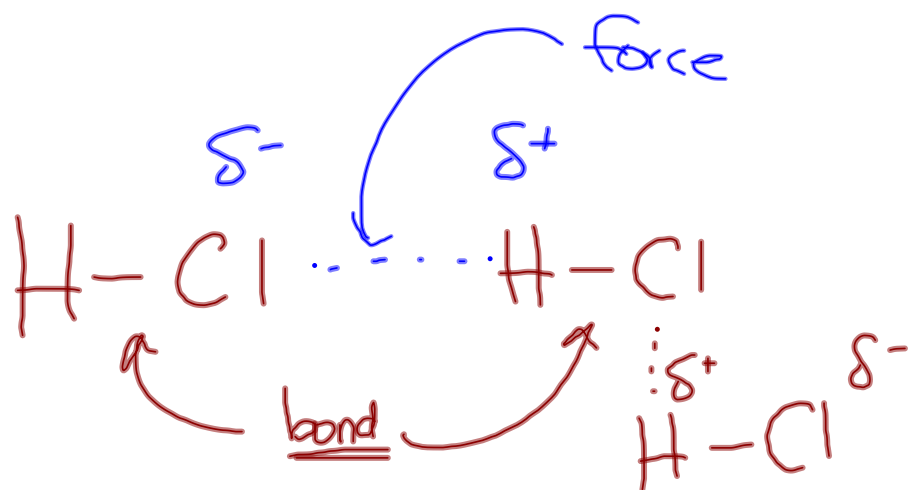


# Chemical Bonding Topics

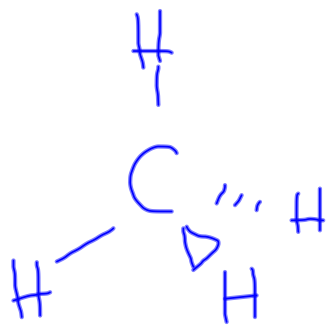
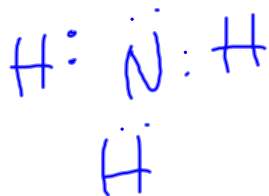
- Octet Rule
- Electron Dot Structure
- Metallic Bonding
- Covalent Bonding
- Coordinate Covalent Bonding
- VSEPR Theory
- Hybridization
- Polarity
- Intermolecular Forces
- Properties of Ionic Crystals, Covalent Compounds, Network Solids



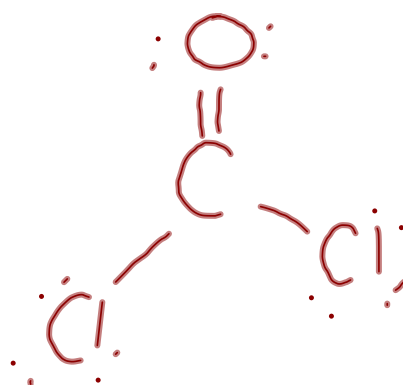
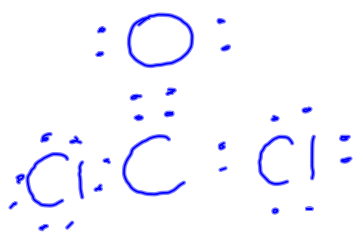


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LDF



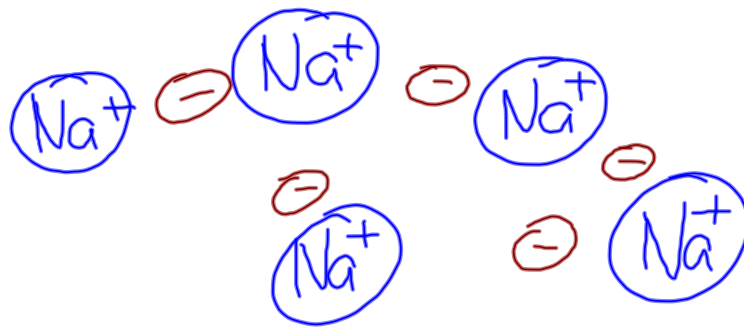
tetrahedral



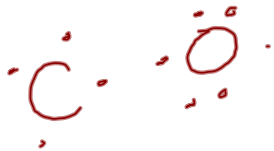
trigonal planar

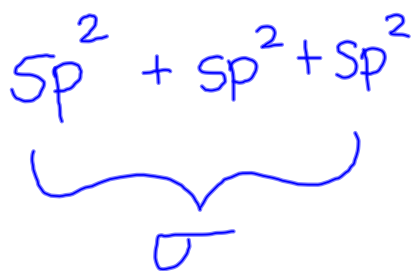
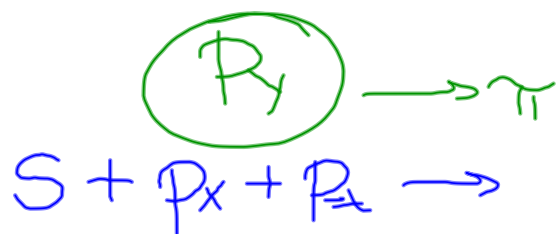
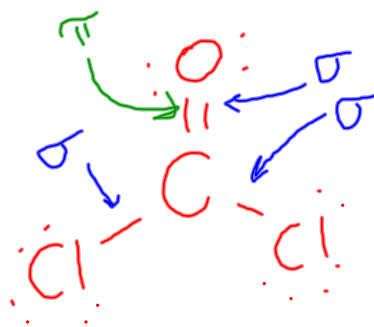


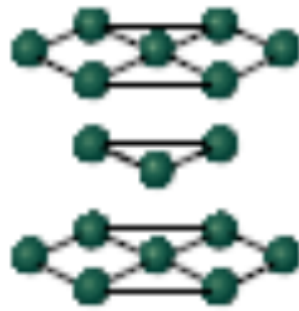
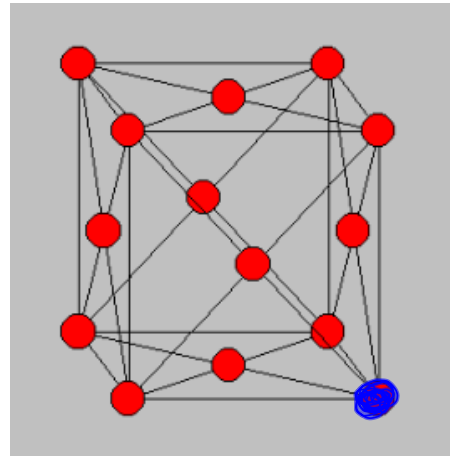
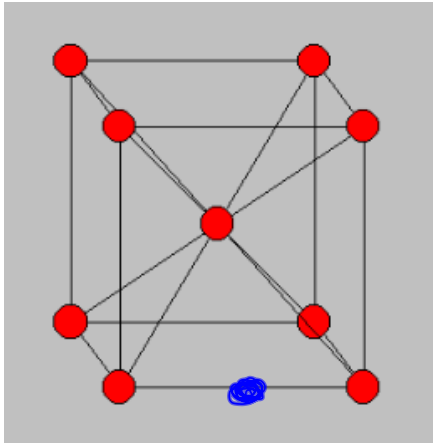
"Sea of electrons"



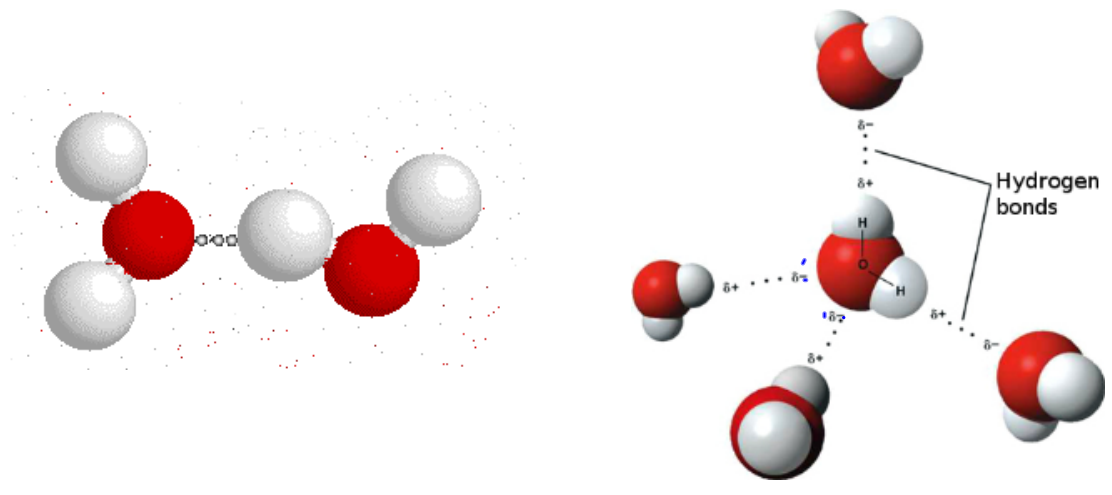
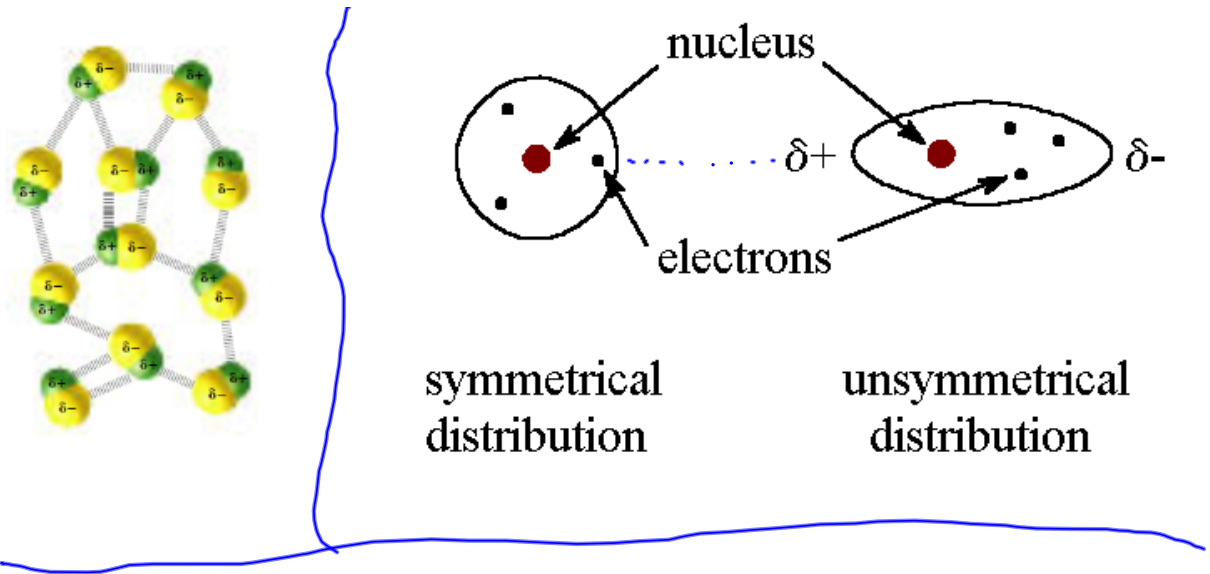
CO







Hexagonal close-packed





2.5 3.0

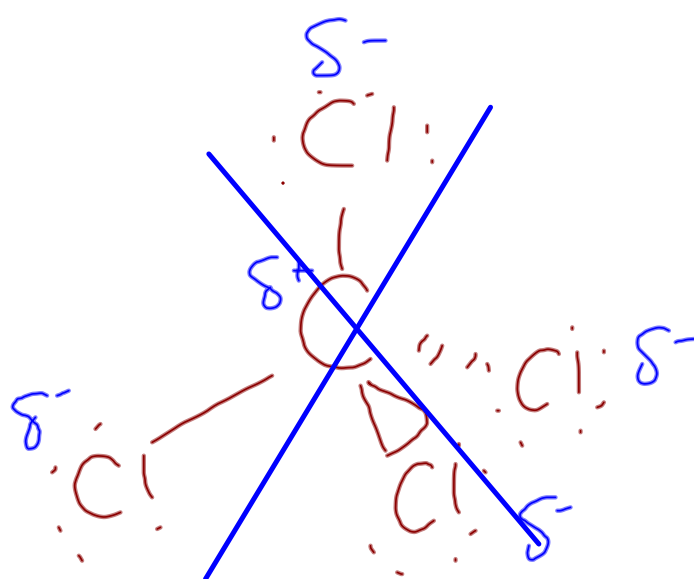
Table 6.3 Electronegativity Differences and Bond Types



Electronegativity difference range	Most probable type of bond	Example
0.0-0.4	Nonpolar covalent	H - H (0.0)
0.4-1.0	Moderately polar covalent	H - Cl (0.9)
1.0-2.0	Very polar covalent	H - F (1.9)
$\geq 2.0$	Ionic	$\text{Na}^+ \text{Cl}^-$ (2.1)

\* No sharp boundary between ionic and covalent

CCl<sub>4</sub>



**Table 6.2****Electronegativity Values for Selected Elements**

<b>H</b> 2.1						
<b>Li</b> 1.0	<b>Be</b> 1.5	<b>B</b> 2.0	<b>C</b> 2.5	<b>N</b> 3.0	<b>O</b> 3.5	<b>F</b> 4.0
<b>Na</b> 0.9	<b>Mg</b> 1.2	<b>Al</b> 1.5	<b>Si</b> 1.8	<b>P</b> 2.1	<b>S</b> 2.5	<b>Cl</b> 3.0
<b>K</b> 0.8	<b>Ca</b> 1.0	<b>Ga</b> 1.6	<b>Ge</b> 1.8	<b>As</b> 2.0	<b>Se</b> 2.4	<b>Br</b> 2.8
<b>Rb</b> 0.8	<b>Sr</b> 1.0	<b>In</b> 1.7	<b>Sn</b> 1.8	<b>Sb</b> 1.9	<b>Te</b> 2.1	<b>I</b> 2.5
<b>Cs</b> 0.7	<b>Ba</b> 0.9	<b>Tl</b> 1.8	<b>Pb</b> 1.9	<b>Bi</b> 1.9		

# Chapter 8 Review

**p. 207-209** #48, 49, 60, 63, 65, 75, 78

**p. 247-249** #39-61

#62-65, 72, 73, 75, 76