Covalent Bonding (sharing electrons)	
H	Single bonds only
F, Cl, Br, I	Single bonds only
B	Three Single bonds only
C	Four Single bonds Double bond + 2 single bonds Triple bond + single bond Two double bonds
N	Three single bonds or one Triple bond
O	Two Single bonds or Double bond
Si	Two double bonds
P, As	Three Single bonds only
S	2 Single bonds or 1 double bond
Se, Te	Two Single bonds

Oddities	
Boron maxes out with just 6 valence e^- Resonating Bonds in O_3, C_6H_6 (benzene) PCl_5 maxes out with 10 valence e^- CO and NH_4^{+1} also make coordinate covalent bonds	
Ionic Bonding (transferring of electrons) Metals lose e^- to form cations. These electrons transfer to nonmetals that form anions. The electron transfer must be perfect, in simple whole number ratios. Ion charges sum to zero. Must be metal and nonmetal, except NH_4^{+1}	
The Intermolecular Attractions or IMF, weak → strong	
Electron dispersion	Caused by temporary motion of electrons, creating positive + negative moments in cloud
Dipole attraction	Caused by near constant + and - poles created by differences in electronegativity between bonding atoms in polar molecules
Hydrogen bonding	Caused by near constant + and - poles created by differences in electronegativity of bonding atoms in polar molecules with H atoms.