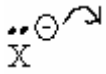
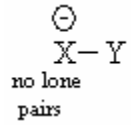
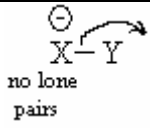
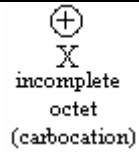
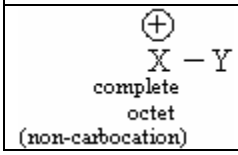
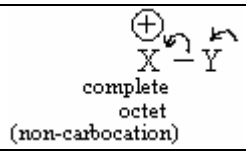
effect of full or formal charges on reactivity

location of charge	reactivity	arrow-pushing
	X is nucleophilic or basic	
	Y is nucleophilic or basic	
	X is electrophilic	
	Y is electrophilic or an acidic hydrogen and X is a good leaving group	

Metals with positive charges are spectator ions, not electrophiles or leaving groups.

Watch out for resonance, for two reasons: (1) Resonance-stabilized charges are less reactive than without resonance-stabilization. (2) Drawing alternative resonance structures will indicate alternative reactive atoms by shifting the charges.

reactivity without full or formal charges

nucleophile or base	electrophile or acidic hydrogen
nonhalogen with lone pair(s)	atom with δ^+ *and* … good leaving group
carbon with δ^- (tail on sigma bond)	… or pi bond
carbon-carbon pi bonds	… or incomplete octet
	Cl_2 or Br_2 reacting with carbon-carbon pi bond

Atoms that satisfy these conditions are *candidates* for reactivity. They may still not be reactive enough, or may not be appropriate in some other way, for particular reactions.

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when to form or break covalent bonds

break a covalent bond when…	…it's at the tail of an electron-pushing arrow. *Do NOT break any covalent bond that is not at the tail of an arrow.*
form a σ bond when…	…the arrow head is pointing to an atom which is not already sharing the electrons represented by the arrow
form a π bond when…	…the arrow head is pointing to a bond

when to form or break ionic bonds

break the ionic bond between two atoms when…	…one of the atoms has lost its charge
form an ionic bond between…	…a spectator ion and an atom that has gained a charge

Ionic bonds are represented simply by drawing two charged atoms close to each other.