3 Li^{1+} Lithium Ion

Atomic Number (number of protons)
Ion Formula (the charge on this ion is 1+ because lithium lost 1 electron to become the stable ion)
Ion Name (identifies the ion: a positve monatomic ion keeps its element name, **ion is named lithium ion)**

9 F^{1-} Fluoride Ion

Atomic Number (number of protons)
Ion Formula (the charge on this ion is 1- because fluorine gained 1 electron to become the stable ion)
Ion Name (identifies the ion: a negative monatomic ion changes the ending to –ide, **ion is named fluoride ion)**

Common Polyatomic Ions

ammonium	**NH_4^{1+}**	hydronium	H_3O^{1+}

1-		**2-**		**3-**	
acetate	**$C_2H_3O_2^{1-}$**	**carbonate**	**CO_3^{2-}**	**phosphate**	**PO_4^{3-}**
chlorate	**ClO_3^{1-}**	**sulfate**	**SO_4^{2-}**	borate	BO_3^{3-}
nitrate	**NO_3^{1-}**	oxalate	$C_2O_4^{2-}$	arsenate	AsO_4^{3-}
hydroxide	**OH^{1-}**	silicate	SiO_3^{2-}		
hydrogen carbonate (bicarbonate)	**HCO_3^{1-}**	chromate	CrO_4^{2-}		
cyanide	CN^{1-}	dichromate	$Cr_2O_7^{2-}$		
bromate	BrO_3^{1-}	peroxide	O_2^{2-}		
permanganate	MnO_4^{1-}				
thiocyanate	SCN^{1-}				

Rules for changing polyatomic ion names when #oxygens change

1. If 1 more oxygen than the root, add the prefix "per" to the name: ex) ClO_4^{1-} is perchlorate from the root chlorate ClO_3^{1-}
2. If 1 less oxygen than the root, change ending to "ite": ex) ClO_2^{-1} is chlorite
3. If 2 less oxygens than the root, change ending to "ite" and add prefix "hypo": ex) ClO^{1-} is hypochlorite

Monatomic Ions: Names and Formulas

	1 1A	**2 2A**	**3 3B**	**4 4B**	**5 5B**	**6 6B**	**7 7B**	**8 8B**	**9 8B**	**10 8B**	**11 1B**	**12 2B**	**13 3A**	**14 4A**	**15 5A**	**16 6A**	**17 7A**	**18 8A**
1	1 **H^{1+}** Hydrogen ion																1 **H^{1-}** Hydride ion	
2	3 **Li^{1+}** Lithium ion	4 **Be^{2+}** Beryllium ion													7 **N^{3-}** Nitride Ion	8 **O^{2-}** Oxide ion	9 **F^{1-}** Fluoride ion	
3	11 **Na^{1+}** Sodium ion	12 **Mg^{2+}** Magnesium ion											13 **Al^{3+}** Aluminum ion		15 **P^{3-}** Phosphide ion	16 **S^{2-}** Sulfide ion	17 **Cl^{1-}** Chloride ion	
4	19 **K^{1+}** Potassium ion	20 **Ca^{2+}** Calcium ion			23 **V^{2+}** Vanadium (II) ion **V^{4+}** Vanadium (IV) ion	24 **Cr^{2+}** Chromium (II) ion **Cr^{3+}** Chromium (III) ion	25 **Mn^{2+}** Manganese (II) ion **Mn^{3+}** Manganese (III) ion	26 **Fe^{2+}** Iron (II) ion **Fe^{3+}** Iron (III) ion	27 **Co^{2+}** Cobalt (II) ion **Co^{3+}** Cobalt (III) ion	28 **Ni^{2+}** Nickel (II) ion **Ni^{3+}** Nickel (III) ion	29 **Cu^{+}** Copper (I) ion **Cu^{2+}** Copper (II) ion	30 **Zn^{2+}** Zinc Ion			33 **As^{3-}** Arsenide Ion	34 **Se^{2-}** Selenide Ion	35 **Br^{1-}** Bromide Ion	
5	37 **Rb^{1+}** Rubidium ion	38 **Sr^{2+}** Strontium ion									47 **Ag^{1+}** Silver Ion	48 **Cd^{2+}** Cadmium Ion		50 **Sn^{2+}** Tin (II) ion **Sn^{4+}** Tin (IV) ion			53 **I^{1-}** Iodide Ion	
6	55 **Cs^{1+}** Cesium ion	56 **Ba^{2+}** Barium ion										80 **Hg_2^{2+}** Mercury (I) ion **Hg^{2+}** Mercury (II) ion		82 **Pb^{2+}** Lead (II) ion **Pb^{4+}** Lead (IV) ion				
7	87 **Fr^{1+}** Francium ion	88 **Ra^{2+}** Radium ion																

- Most Transition Metals have multiple charges
- A roman numeral is used when naming the metal to represent the metal's charge