

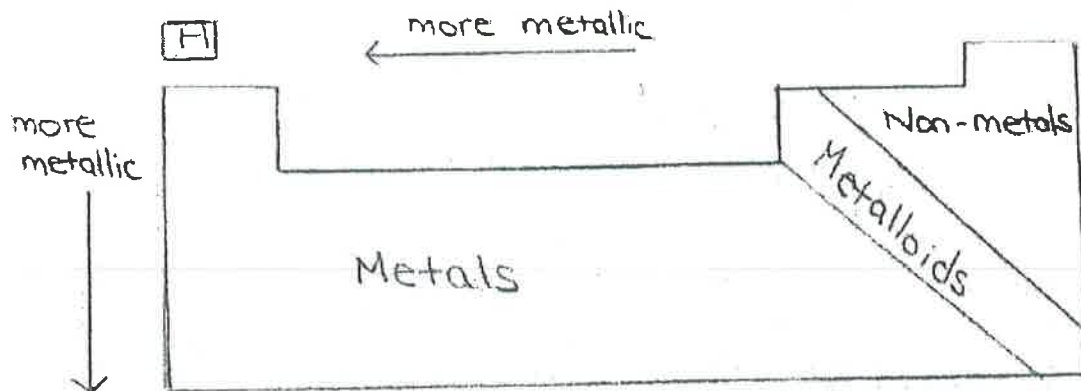
Name: Key

Date: _____

Block: _____

Naming Test Review

- Different types of elements are located in specific areas of the periodic table.



- Properties of metals:

- Shiny
- Bendable
- Ductile (can be stretched into wires)
- Malleable (can be hammered into a thin sheet)
- Good conductors of heat and electricity

Naming and Formula Writing

A) Ionic Compounds → metal + non-metal / metal + polyatomic ion / + polyatomic ion ^{(NH₄⁺) polyatomic ion}

- Write the name of the metal first, then the stem of non metal with an "ide" ending.
- Use a Roman numeral in brackets to show the charge of the multivalent metal.

e.g., CuCl copper (I) chloride

CuCl₂ copper (II) chloride

- Some metals are not multivalent and do not require Roman numerals to indicate charges.

e.g. alkali metals: always +1

alkaline earth metals: always +2

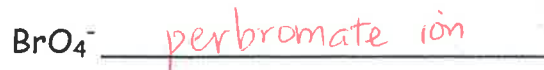
➤ For naming of Polyatomic Compounds, refer to your data booklet for the list of polyatomic ions.

**The one with the greater number of oxygen atoms takes an "-ate" suffix, while the one with the lesser number of oxygen atoms takes an "-ite" suffix.



One additional oxygen more than an "-ate" ion is per_____ate ion.

One less oxygen than an "-ite" ion is hypo_____ite ion.



• Examples



B) Covalent Compound → non-metal + non-metal

- Use Greek prefixes

1= <i>mono</i>	(omit for 1 st element)	6= <i>hexa</i>
2= <i>di</i>		7= <i>hepta</i>
3= <i>tri</i>		8= <i>octa</i>
4= <i>tetra</i>		9= <i>nona</i>
5= <i>penta</i>		10= <i>deca</i>

- Examples

- 1) SO_3 *sulphur trioxide*
- 2) N_2O_5 *dinitrogen pentoxide*
- 3) Dinitrogen triphosphide *N_2P_3*
- 4) Carbon tetrachloride *CCl_4*

C) Acids → _____(aq)

Binary Acids

- Consist of hydrogen and one other element (No oxygen).
- Named hydro _____ic acid
- Examples:

$\text{HI}_{(aq)}$ *hydroiodic acid*

$\text{H}_2\text{S}_{(aq)}$ *hydrosulphuric acid*

Ternary Acids

- Consist of hydrogen and a negative polyatomic ion
- Name depends on the ion used.
- "-ate" ions become "-ic" acids
- "-ite" ions become "ous" acids

• Examples:

1) $\text{HClO}_4(\text{aq})$ perchloric acid

2) $\text{HNO}_2(\text{aq})$ nitrous acid

3) $\text{H}_3\text{PO}_4(\text{aq})$ phosphoric acid

4) $\text{H}_3\text{PO}_3(\text{aq})$ phosphorous acid

5) Sulphurous acid $\text{H}_2\text{SO}_3(\text{aq})$

6) Sulphuric acid $\text{H}_2\text{SO}_4(\text{aq})$

7) Chlorous acid $\text{HClO}_2(\text{aq})$

8) Oxalic acid $\text{H}_2\text{C}_2\text{O}_4(\text{aq})$

D) Determination of Oxidation States

- Oxidation numbers of metal or non-metal ions in polyatomic ions containing oxygen can be determined

• Examples:

ClO_3^- chlorate ion, has $\text{Cl}^{+5} \text{O}^{2-}$
 $3 \times (-2) = -6$
overall = -1
" Cl " + (-6) = -1
so $\text{Cl} = +5$

PO_4^{3-} phosphate ion, has $\text{P}^{+5} \text{O}^{2-}$
 $4 \times (-2) = -8$
overall = -3
" P " + (-8) = -3
 $\text{P} = +5$