

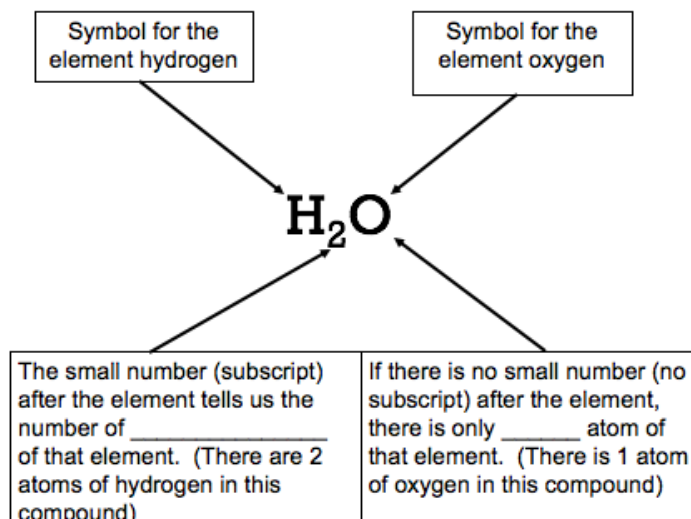
## Lesson 5: Periodic Table

### Dmitri Mendeleev

- Developed the table in 1869 with only 63 known elements
- Grouped by similar chemical and physical properties hence irregular shape of table
- Left empty spaces, predicting future elements to be discovered
  - With the empty spaces you could also predict the properties of these elements

### Element and Compound Notation

- Periodic table organizes the 118 elements
- Each element is noted by an
  - 1 or 2 letters, the first one is always Capitalized
  - Examples:  
H \_\_\_\_\_  
Na \_\_\_\_\_  
Cl \_\_\_\_\_
- Compound Notation uses element notation but in a different way



### Families and Periods

- Family: the \_\_\_\_\_ of a periodic table
  - Labelled 1-18
  - Examples: Alkali metals, Alkaline Earth Metals, Halogens, Noble Gases
- Period: the \_\_\_\_\_ of a periodic table
  - Increasing atomic number
  - Same period, similar chemical properties

### Periodic Table of the Elements

### Metals

- Mostly \_\_\_\_\_ side of the table
- Three categories: \_\_\_\_\_ Metals, \_\_\_\_\_ Earth Metals and Transition Metals
- Solid
  - Except \_\_\_\_\_ is liquid (Hg)
- Metallic lustre, malleable, ductile, conducts electricity



## Metal Families

- Alkali Metals
  - Group 1 Elements
  - Shiny, Silvery, Soft
  - Highly \_\_\_\_\_
  - Examples: Li, Na, K...
- Alkaline Earth Metals
  - Group 2 Elements
  - Less soft and less reactive
  - Examples: Be, Mg, Ca

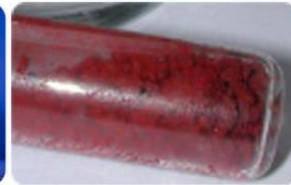
## Non-Metals

- Mostly \_\_\_\_\_ side of the table
- Three categories: \_\_\_\_\_ Gases, \_\_\_\_\_, and Other Non-Metals
- Gases or Powdery Solids
  - Except \_\_\_\_\_ is liquid (Br)
- Brittle, Dull, Poor Conductors
- Halogens
  - Group 17 Elements
  - Very \_\_\_\_\_
  - Examples: F, Cl, Br...
- Noble Gases
  - Group 18 Elements
  - UNREACTIVE
  - He, Ne, Ar

Carbon



Phosphorus



Sulfur

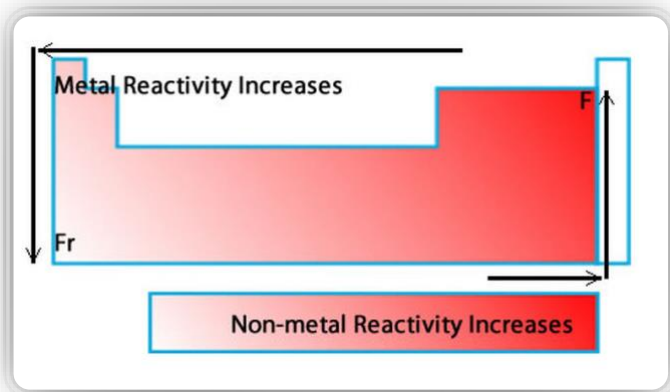


	5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00
	13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.07	17 Cl Chlorine 35.45
12 2B			metalloids		
30	31 Zn Zinc 65.39	32 Ga Gallium 69.72	33 Ge Germanium 72.61	34 As Arsenic 74.92	35 Se Selenium 78.96
48	49 Cd Cadmium 112.41	50 In Indium 114.82	51 Sn Tin 118.71	52 Sb Antimony 121.76	53 Te Tellurium 127.60
80	81 Hg Mercury 200.59	82 Tl Thallium 204.38	83 Pb Lead 207.2	84 Bi Bismuth 208.98	85 Po Polonium (209)
				86 At Astatine (210)	

## Metalloids

- Fall along the staircase
  - Except \_\_\_\_\_
- Properties of metals and non-metals

## Reactivity



# Colour the Table

- 1) Colour Group 1 Elements RED
- 2) Colour Group 2 Elements ORANGE
- 3) Colour the transition elements YELLOW
- 4) Draw a distinct "staircase" down the table starting at Boron
- 5) Colour Group 17 BLUE
- 6) Colour Group 18 PURPLE
- 7) Number each PERIOD on the table
- 8) Trace the ELEMENT SYMBOL of the elements that are liquid at room temperature in RED

Family	Elements	Physical Properties	Chemical Properties	Uses
Alkali metals (Group ____)				
Alkaline Earth metals (Group ____)				
Halogens (Group ____)				
Noble Gases (Group ____)				

Bonus: Try to spell your name with the Element Symbols

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