

# Metals, Nonmetals and Metalloids

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## NOTES

# Classification

Most elements are metals

- Located on left side

Non metals are located on right side

Metalloids separate metals and non-metals

- They touch the “zig-zag” line

1A 2A 3A 4A 5A 6A 7A 8A

1 H He

2 Li Be B C N O F Ne

3 Na Mg Al Si P S Cl Ar

4 K Ca Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga Ge As Se Br Kr

5 Rb Sr Y Zr Nb Mo Tc Ru Rh Pd Ag Cd In Sn Sb Te I Xe

6 Cs Ba Hf Ta W Re Os Ir Pt Au Hg Tl Pb Bi Po At Rn

7 Fr Ra Unq Unp Unh Uns Uno Une

6 La Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu

7 Ac Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr

Metals

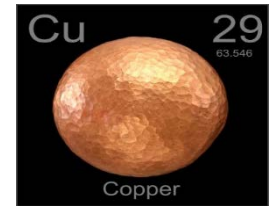
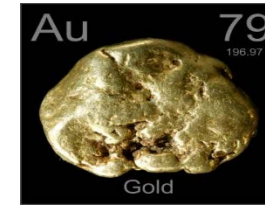
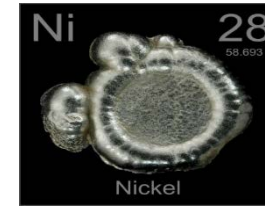
Nonmetals and Noble gases

dual properties

# Metals

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- Shiny 'metallic' appearance (luster)
- High melting points
- Solids at room temperature (except mercury)
- High densities
- Typically lose electrons when bonding due to Low ionization energies and Low electronegativities
- Malleable
- Ductile
- Good thermal and electrical conductors
- Monatomic (one atom)



# Nonmetals

- Dull appearance (luster)
- Low melting points
- Most are gases at room temperature
- Low densities
- Typically gain electrons when bonding due to high ionization energies and high electronegativities
- Brittle
- Poor thermal and electrical conductors
- 7 are diatomic (two atom)
  - Hydrogen (H<sub>2</sub>)    Nitrogen (N<sub>2</sub>)    Oxygen (O<sub>2</sub>)    Fluorine (F<sub>2</sub>)    Chlorine (Cl<sub>2</sub>)    Iodine (I<sub>2</sub>)    Bromine (Br<sub>2</sub>)

