Grouping The Elements
Group 1 – Alkali Metals

- Most reactive – 1 outer electron
- Often stored in oil
- Only found in nature combined with other elements.
- Soft, silver, shiny, low density
- Example:
  - NaCl – Table Salt
  - KBr – Photography
- Color brown
Group 2 – Alkaline Earth Metals

- Less reactive than G1
- 2 Outer electrons
- Silver, Higher density than G1
- Example:
  - Mg – Airplane Manufacturing
  - Ca – Found in chalk and cement
- Color light green
Groups 3-12 – Transition Metals

- 1 or 2 outer electrons – do not let go as easily as G1 and G2
- Less reactive than G1 and G2
- Shiny
- Good Conductors
- Higher Density and Melting Point than G1 and G2
- Color light blue
Lanthanide and Actinide Series

- **Rare-Earth Metals**
  - Not found in concentrated deposits
- **Lanthanide:**
  - Steel
  - Shiny
  - Reactive
- **Actinide:**
  - Radioactive/Unstable
  - After #94 – made in labs

Color both purple
### Group 13 – Boron Group

- 1 metalloid and 5 metals
- 3 outer electrons
- Solids at room temperature
- Most Common – Al
- Reactive
- Color red

<table>
<thead>
<tr>
<th>Element</th>
<th>Atomic Number</th>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>Boron</td>
<td>5</td>
<td>B</td>
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<td>113</td>
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</tbody>
</table>
Group 14 – Carbon Group

- 1 nonmetal
- 2 metalloids
- 3 metals
- 4 outer electrons
- Varying reactivity
- Solids at room temperature
- Si and Ge used for computer chips
- Color yellow
Group 15 – Nitrogen Group

- 2 nonmetals
- 2 metalloids
- 2 metals
- 5 outer electrons
- N – 80% of the gas we breathe
- P – extremely reactive
- Color dark green
Group 16 – Oxygen Group

- 3 nonmetals
- 1 metalloid
- 1 metal
- 6 outer electrons
- O – 20% of the air we breathe
- Color dark blue
Group 17 - Halogens

- All nonmetals
- Very reactive
- 7 outer electrons
- Need to gain only one outer electron
- Form compounds with metals very easily
- Chemical properties similar
- Physical properties quite different
- Color light orange
Group 18 – Noble Gases

- All nonmetals
- Un-reactive
- Stable – full outer electron level
- Color dark red
- Highlight the zig zag line in black
Hydrogen

- Reactive
- 1 outer electron
- Set a part because the properties do not match any other group
- Is placed above the G1 because its number of outer electrons matches G1
- Most abundant element
- Fuel for the birth of stars
- Color dark orange