Chemical Formulas and Equations

Chapter 2 Section 2 Pages 32-37
Chemical Equations

- Use symbols and **formulas** to describe a chemical reaction.
- Starting materials = **Reactants**
- Ending materials = **Products**
Accuracy is Key!

<table>
<thead>
<tr>
<th></th>
<th>CO₂</th>
<th>CO</th>
<th>Co</th>
</tr>
</thead>
<tbody>
<tr>
<td>C = 1</td>
<td></td>
<td>C = 1</td>
<td>Co = 1</td>
</tr>
<tr>
<td>O = 2</td>
<td></td>
<td>O = 1</td>
<td></td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>colorless, odorless gas that you exhale</td>
<td>Carbon monoxide – colorless, odorless gas, and is poisonous</td>
<td>Cobalt – a hard, bluish, gray metal</td>
</tr>
</tbody>
</table>
Equations MUST BE Balanced!

- Atoms are never *lost* or gained in a chemical reaction, just *rearranged*.
- The # of reactants = # of *products*
- Based on the work on Antoine Lavoisier – Law of Conservation of *Mass*
Steps to balance a chemical equations.

1. Write the symbols and **formulas** correctly.
2. Make two lists of **elements** – write it the **same** on both sides of the arrow.
3. Count
4. Use **Coefficients** to balance
5. Recount/**Redo** – If necessary.