Parts of a Chemical Equation

- Reactants are what you start with.
  - They are always on the left.
- Then an arrow pointing to the right.
  - → by default, read it "yields"
  - ⇄ means reversible (equilibrium)
  - Do not use ↔ or ⇒ or ←
    (they mean other things)
- Products are what you end up with.
  - They are always on the right.
- Put a "+" between substances
- Order doesn't matter.
- Over the arrow is optional:
  - Δ means add heat
  - hν means add light
  - chemical formula is solvent
  - temperature means temperature
  - ⇅ means reflux (boil)

$$H_2\,(g) + O_2\,(g) \rightarrow H_2O\,(l)$$

$$C_2H_4 + Br_2 \overset{h\nu}{\rightleftarrows} C_2H_4Br_2$$

$$C_3H_8\,(g) + O_2\,(g) \overset{\Delta}{\rightarrow} CO_2\,(g) + H_2O\,(g)$$

$$Na_2CO_3 + HCl\,(aq) \overset{H_2O}{\rightarrow} NaCl + H_2O\,(l) + CO_2\,(g)\uparrow$$

$$KI\,(aq) + Pb(NO_3)_2\,(aq) \overset{\Uparrow\Downarrow}{\rightarrow} PbI_2\,(s)\downarrow + KNO_3\,(aq)$$

- After the substance (can be written subscript):
  - (aq) means in water
  - (s), (l), (g) means solid, liquid, gas state
  - ↑ means gas evolved (escaped)
  - ↓ means precipitate (solid fell out)