**3 Ways to Classify Acids and Bases**

**http://www.chemguide.co.uk/physical/acidbaseeqia/theories.html**

Please remember that whenever there is water present the following equilibrium exists:

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**Arrhenius** Acid

* a substance that dissociates in water to form hydrogen ions (H +)

e.g.

**Arrhenius** Base

* a substance that dissociates in water to form hydroxide (OH -) ions
* increases the concentration of OH - ions in an aqueous solution

e.g.

**Bronsted-Lowry** Acid

* a proton (hydrogen ion) donor

**Bohr Diagram** of a Hydrogen Atom:

Reaction between Water and HCl:

**Bronsted-Lowry** Base

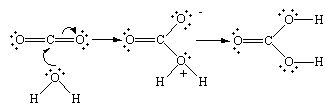
* a proton (hydrogen ion) acceptor

Reaction between Water and Ammonia:

**Lewis** Acid

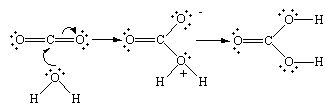
* a species that accepts an electron pair

e.g. carbon dioxide dissolving in water to form carbonic acid



**Lewis** Base

* a species that donates an electron pair



**Water is amphoteric** -- it can go both ways -- it can act as an acid or a base!