Acids & Bases

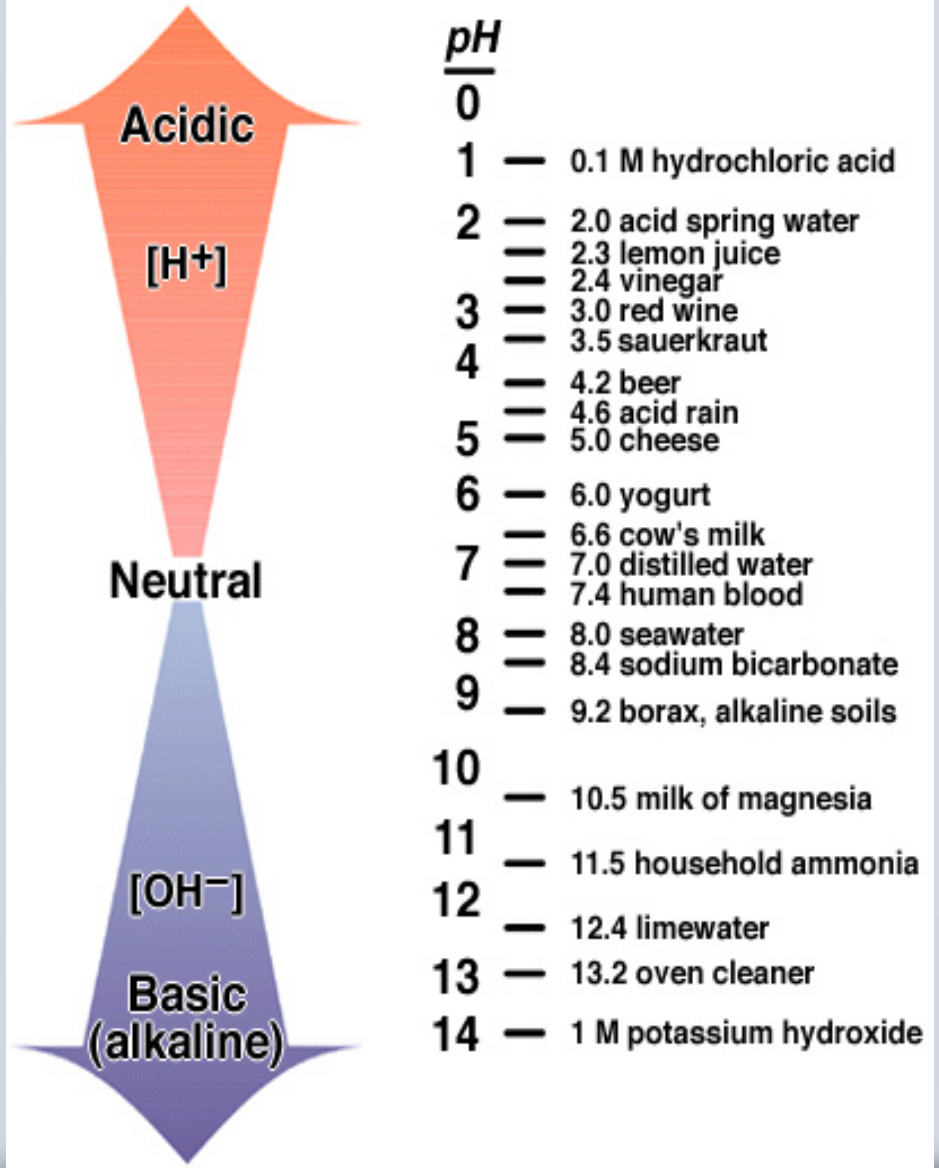
By Robert McGee

Our Goals for today

- To determine the difference between Acids & Bases
- Discuss the importance of studying Acids & Bases
- Perform an experiment dealing with Acids & Bases

What is the pH scale?

- The pH scale measures how *acidic* or *basic* a solution is.



The pH scale

- The pH scale is the concentration of hydrogen ions in a given substance.

$$pH = -\log\left[H^+\right]$$

Identifying Acids and Bases

- *Acids* have a ph from 0-7
- Lower pH value indicates a stronger acid.

- *Bases* have a pH from 7-14
- Higher pH value indicates a stronger base.

Definitions of Acids and Bases

- An acid is a substance that breaks into $[H^+]$ ions in an aqueous solution.

- A Base (alkaline) is a substance that breaks into $[OH^-]$ ions in an aqueous solution.
- Note: aqueous solution is any solution where H_2O is the solvent.

Did we Miss something??

- What happens when the pH of a substance is 7?

- Ans: A pH level of 7 indicates a Neutral Substance i.e: Water!

Test Your Knowledge

- What is the range of an ACID on the pH scale?

Ans: 0-7

- What is the range of a BASE and what is another name for a BASE?

Ans: 7-14, Alkaline

Characteristics Of Acids

Acids can be characterized by:

1. A sour taste.
2. It turns blue litmus paper red
3. It tastes sour. Try drinking lemon juice (citric acid)

Characteristics of Bases

A Base is characterized by:

1. A bitter taste. (Milk of Magnesia)
2. It feels slippery. (Soapy Water)
3. It turns Red Litmus Blue.

Why Learn about Acids & Bases?

- What do you think is the pH level of NYC tap water?
- The pH of a swimming pool must be checked periodically. Why?
- Is it important for Lakes & Rivers to maintain a certain pH?

Today's Experiment

- Test the pH of Pepsi, tap water, and drain cleaner

- GOOD LUCK!!!