Vocabulary: pH Analysis: Quad Color Indicator

Vocabulary

- Acid – a water-soluble compound that donates protons (H^+ ions) to a base.
  - Acids are often sour in taste, can burn the skin and eyes, and react with a base to produce a salt and water.
  - Concentrated acids are corrosive to metals.
  - The chemical formulae of acids usually begin with H. Examples are HCl (hydrochloric acid, found in your stomach), H_2SO_4 (sulfuric acid, found in car batteries) and H_2CO_3 (carbonic acid, found in soft drinks).
- Acidic – being or containing an acid.
  - Acidic substances have a pH value less than 7.
- Alkaline – being or containing a base.
  - Alkaline substances have a pH value greater than 7.
- Base – a water-soluble chemical compound that accepts protons from an acid.
  - Bases are often bitter in taste, have a slippery texture, and react with acids to product a salt and water.
  - Concentrated bases are corrosive to organic matter.
  - The chemical formulae of bases usually end with OH. Examples are NaOH (sodium hydroxide, found in drain cleaners), KOH (potassium hydroxide, used to make soap) and $Ca(OH)_2$ (calcium hydroxide, found in plaster).
- Indicator – a substance that changes color when in contact with an acid or base.
  - Examples of indicators include litmus, bromthymol blue, methyl yellow, phenol red, red cabbage juice, curry powder, and many others.
- Neutral – neither *acidic* nor *basic*.
  - Neutral substances do not yield excess H^+ or OH^- ions when dissolved in water.
  - Pure water is neutral and has a pH value of 7.0.
- pH – a measure of how many hydrogen ions there are in a solution. The greater the number of hydrogen ions, the more acidic the solution.
  - The symbol “pH” stands for “potential of hydrogen” or “power of hydrogen.”
  - The pH scale is a *negative logarithmic* scale:
    - The lower the pH, the greater the concentration of hydrogen ions, and the more acidic the solution.
    - Because the scale is logarithmic, a substance with a pH of 4 is 10 times more acidic than a substance with a pH of 5.