Water

All acids and bases are aqueous (dissolved in water)
Water can self ionize to form ions

The amount of H^+ ions = the amount of OH^- ions, therefore we call the solution neutral

The amount of H+ ions = **1×10^{-7}** units

The pH of the solution = 7

THe pH is actually the exponent of the scientific notation

All acids and bases will have a small amount of OH^- or H^+ ions

Acids produce H^+ ions but a small amount of OH^- ions will be present

Bases produce OH^- ions but a small amount of H^+ ions will be present

pH scale

- The pH scale measures the amount of H^+ ions in the solution
- When H+ > OH- then we will have an acid
- When OH- > H+ then we will have a base

- The pH scale ranges from 0 - 14 and measures how acidic or basic the chemical is.

- Water has a pH of 7
- Water is halfway between an acid and a base
- A strong acid has a pH of 0, A weak acid has a pH of 6
- A strong base has a pH of 14, A weak base has a pH of 8
- For every one step decrease in pH there is a 10 times increase in the acidity of the solution
- A pH of 5 is 10 times more acidic than a pH of 6
- pH of 4 is 100 times more acidic than a pH of 6

- When an acid combines with a base they neutralize each other
    - The acid increases its pH
    - The base decreases in pH
    - After the reaction the pH is 7

- Acids and bases react to form water

Neutralization reactions look very much like double displacement reactions

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