

Short Lesson 1: Acids and Bases – Let the base drop!

Anticipatory Set – Attention getter:

Statement of Objectives:

- ❖ I can describe the process of dissociation as it results in ion formation.
- ❖ I can define acids and bases based on how they behave in water.
- ❖ I can list the known acids and bases.
- ❖ I can describe the differences between strong acids/bases and weak acids/bases.
- ❖ I can confirm the acidity of a substance based on using its pH value.
- ❖ I can label the acid, base, and conjugates in a reaction.

Background Information:

- We must look back and remember that individual atoms join to become various compounds. Some of these compounds are categorized as acids or bases. Today we are going to discuss what it means to be an acid or a base and the details associated with each.

Direct Instruction:

- Acids V.S. Bases – Who's who?
 - Acid – a substance that can release a proton or hydrogen ion
 - Base – a substance that can donate a hydroxide ion
 - Examples of each...
- Dissociation:
 - Dissociation occurs when a molecule is split into smaller molecules through a reversible process.
 - HCl when placed into a water will dissociate into H_3O^+ ions and Cl^- leaving no HCl leftover. The HCl molecules were completing split into H^+ and Cl^- . The hydrogen ions are very reactive and will immediately latch on to the water molecules to develop hydronium ions.
- Strong V.S. Weak – A test of strengths!
 - Determining the strength of an acid or base is all about dissociation.
 - Strong acids and bases – dissociate completely in water; every molecule added to water results in a hydronium or hydroxide ion; there are very few strong acids and bases found in nature
 - Weak acids and bases – only partially react with water and will only partially dissociate; the majority of acids and bases will be weak
- Strong Acids and Bases – The top dogs!
 - Acids:
 - HClO_4 , perchloric acid
 - HNO_3 , nitric acid
 - H_2SO_4 , sulfuric acid
 - HCl, hydrochloric acid
 - HBr, hydrobromic acid

- HI, hydroiodic acid
- Bases:
 - LiOH, lithium hydroxide
 - NaOH, sodium hydroxide
 - KOH, potassium hydroxide
 - RbOH, rubidium hydroxide
 - CsOH, cesium hydroxide
 - TlOH, thallium(I) hydroxide
 - Ca(OH)₂, calcium hydroxide
 - Sr(OH)₂, strontium hydroxide
 - Ba(OH)₂, barium hydroxide
- Acidity and pH –
- Conjugate Acids and Bases – Conjugation junction, what's your function?

Guided Practice:

Closure: