

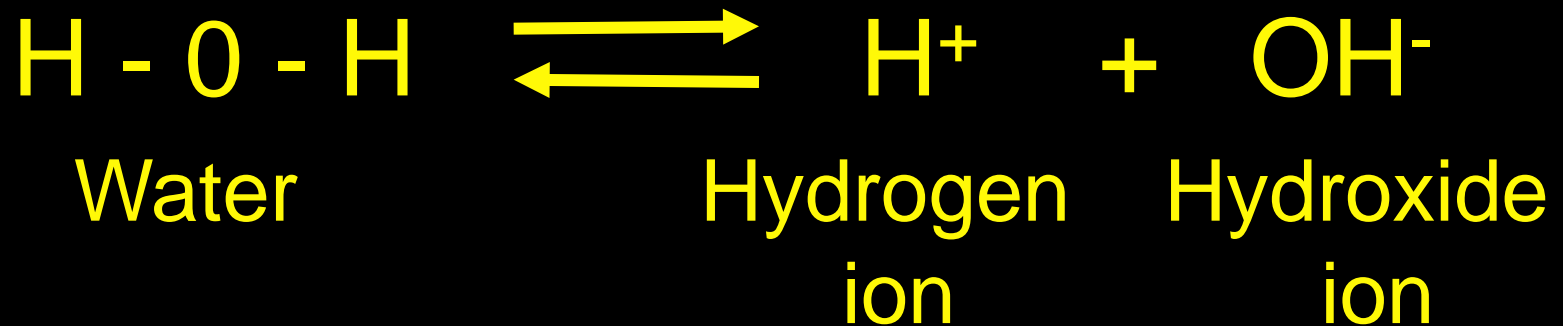
Acids, Bases and pH



Learning Objectives

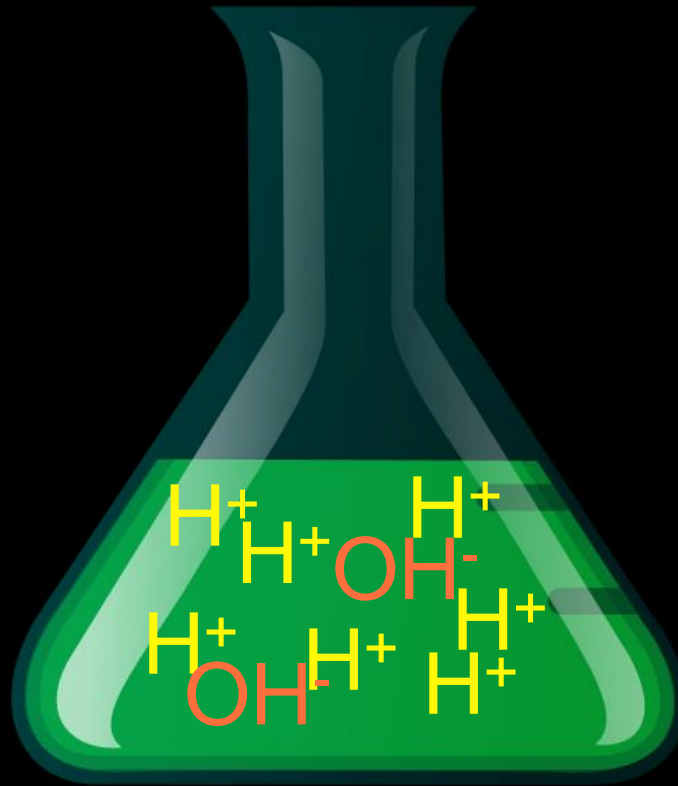
- Define the terms pH, acid, base and buffer.
- Describe the pH scale and how an indicator can be used to determine the pH of a solution.

Water Forms ions



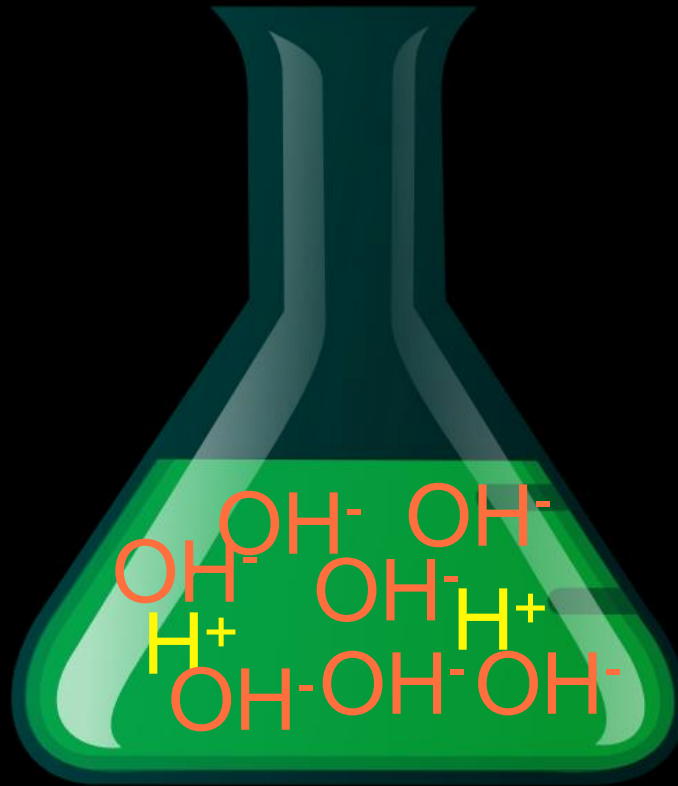
Acid

An **acid** is any compound that releases hydrogen (H^+) ions in solution.



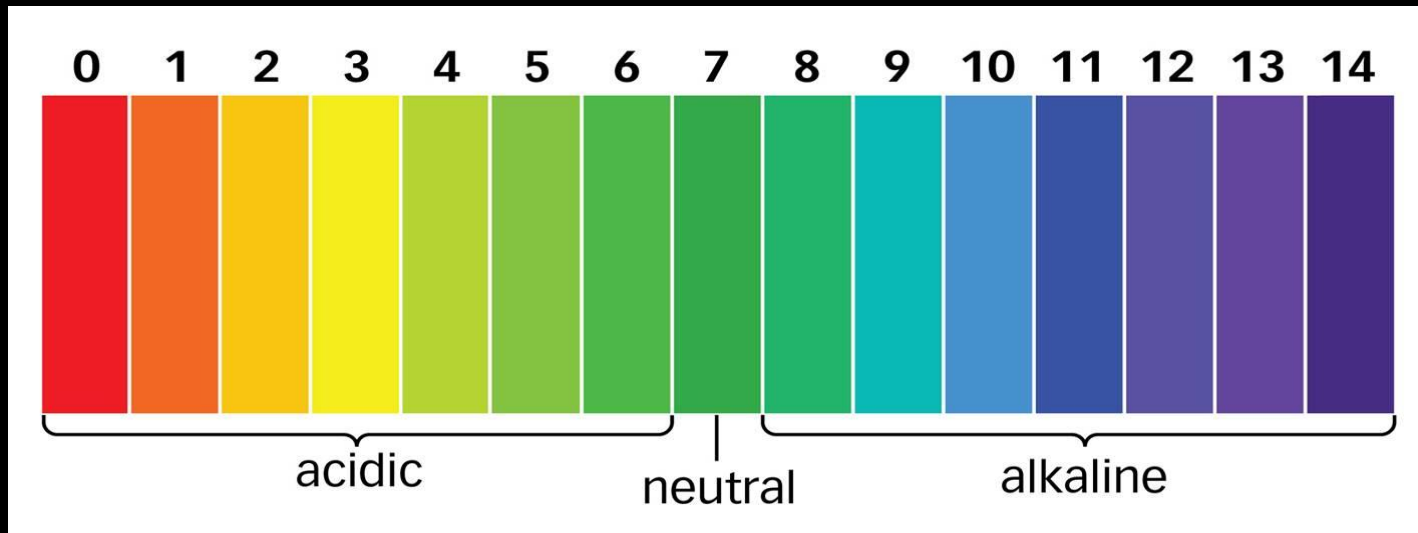
Base

A **base** is any compound that releases hydroxide (OH^-) ions in solution.



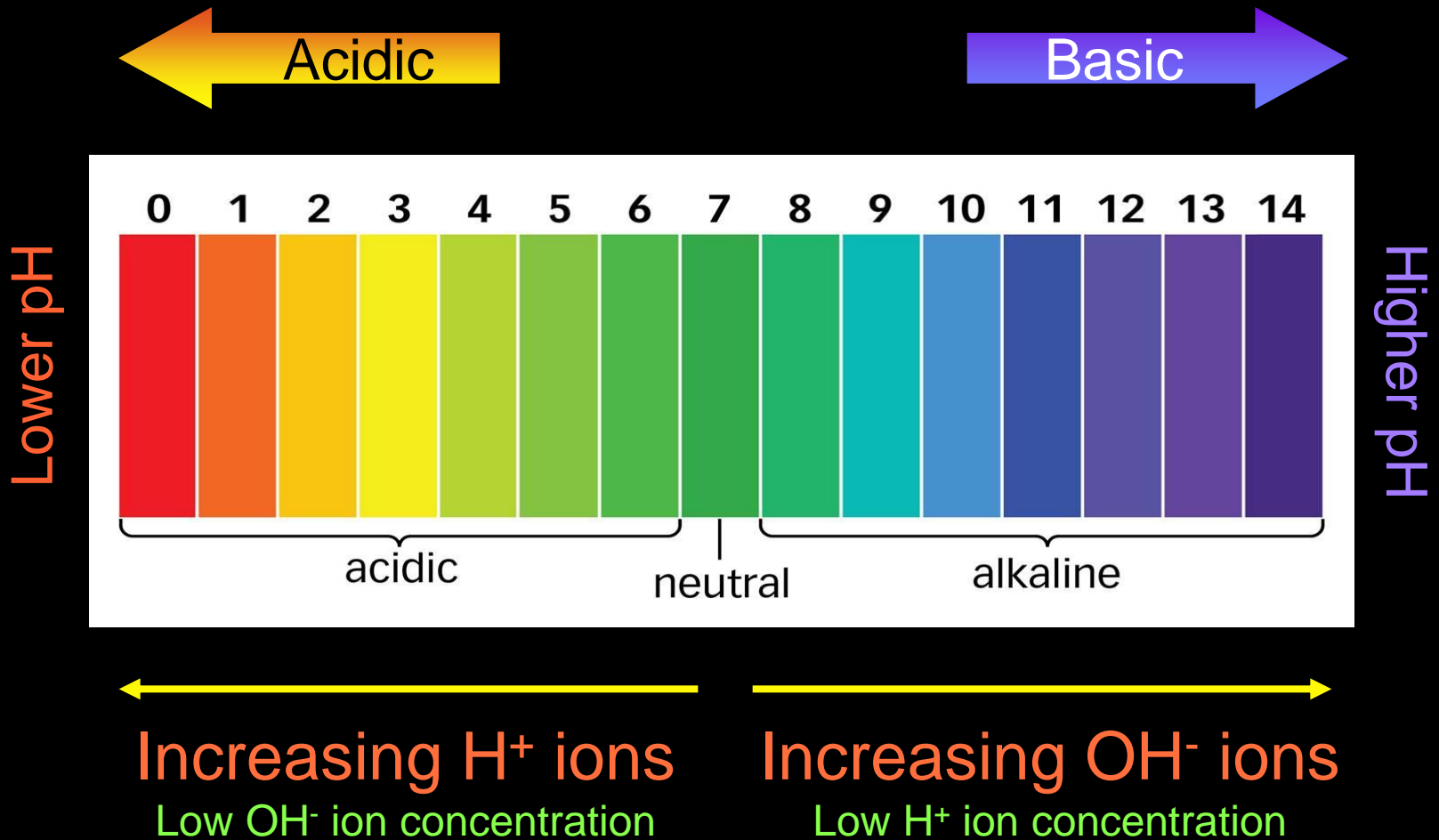
The pH Scale

The **pH scale** indicates the concentration of H^+ ions in solution.



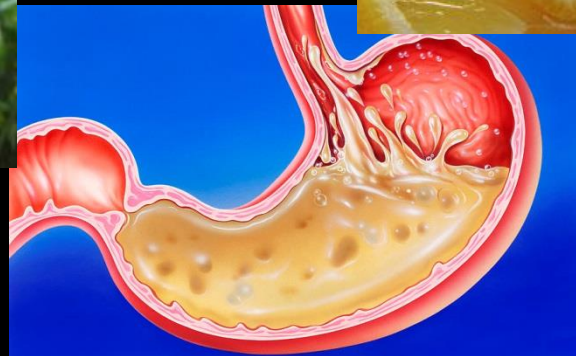
The pH scale ranges from 0-14. At pH 7, the concentration of H^+ ions and OH^- ions are equal.

The pH Scale



Examples of Acids

Acidic solutions contain higher concentrations of H^+ ions than pure water and have pH values below 7.



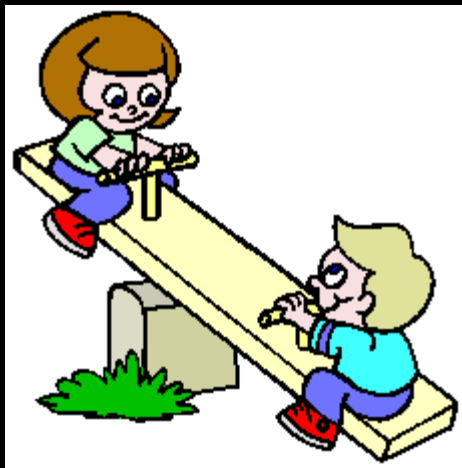
Examples of Bases

Basic solutions contain lower concentrations of H^+ ions than pure water and have pH values above 7.



What is a buffer?

A **buffer** is a weak acid or weak base that reacts with strong acids or bases to prevent sharp, sudden changes in pH.



Buffers keep the fluids in the human body between 6.5-7.5 and help maintain homeostasis.

Why is pH important?

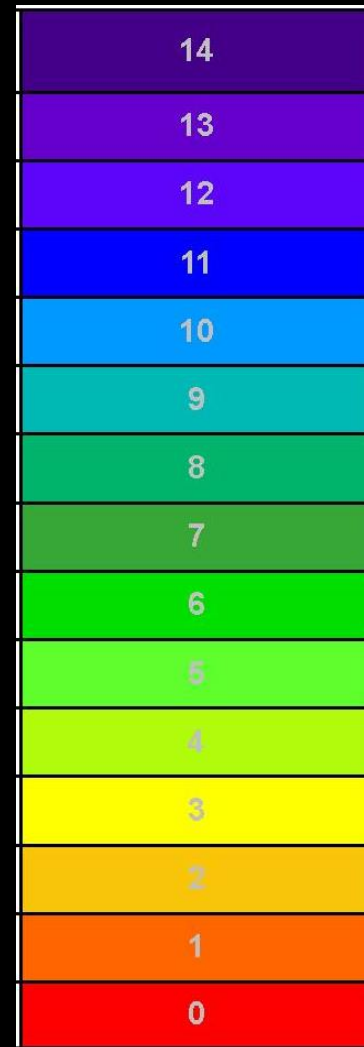


The pH of a cell's interior helps regulate the cell's chemical rxns.

YouTube
Acids, Bases and pH

Predict where these common items will land on the pH scale

Hydrochloric Acid
Lemon Juice
Baking Soda
Gatorade
Sodium Hydroxide
Hair Conditioner
Bleach
Pure Water
Tums Antacid
Vinegar
Juice Box
Club Soda



More Basic

More Acidic

Stop Here



Actual pH of Common Household Solutions

Hydrochloric Acid	1
Lemon Juice	2
Baking Soda	8.3
Gatorade	2.9 - 3.2
Sodium Hydroxide	14
Hair Conditioner	4.0 - 7.8
Bleach	12
Pure Water	7
Tums Antacid	10.5
Vinegar	2.2
Juice Box	5.5
Club Soda	7

pH of Common Household Items

