

21.1: Acids Donate and Bases Accept Hydrogen IonsDefine an **Acid**:Define a **Base**:*List some of the properties of acids & bases and some examples of each:*

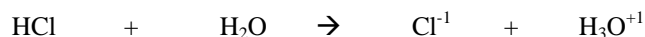
ACIDS	BASES
<ul style="list-style-type: none"> • • • 	<ul style="list-style-type: none"> • • • •
What are the properties of acids caused by?	What are the properties of bases caused by?
What is the other name for this ion?	What is the other name for this ion?
<u>Names and Uses of Common Acids:</u>	<u>Names and Uses of Common Bases:</u>
1.)	1.)
2.)	2.)
3.)	3.)
4.)	

Bronsted-Lowry Theory: Made by Johannes Bronsted and Thomas Lowry in 1923.

- Define a **Bronsted-Lowry acid**:
- Define a **Bronsted-Lowry base**:

* What acronym can we use to remember the above?

Label the Bronsted-Lowry acid & base in the following chemical equation:



In the following chemical equations, label which is behaving as the acid (A) and the base (B) in both the forward & reverse directions:

Define a **Neutralization Reaction**:

Ex:

Define a **Salt**:

Describe the chemical dangers, if any, of salts when compared to acids and bases:

* How do we determine the formula for the salt?

Label the following Acid-Base reactions and the salts that are formed:

Acid	Base		Salt	Water
		→		
		→		
		→		
		→		

21.3: Solutions Can Be Acidic, Basic, or Neutral

What is pH?

What does a **low pH** mean? High amounts of _____ and low amounts of _____.

What does a **high pH** mean? Low amounts of _____ and high amounts of _____.

What is **neutral**? Equal amounts of _____ and _____.

Draw and label the pH scale:

What is a good way to test the pH of a solution?

Where do we see this in real life?

What is typically the cause of an “upset stomach”?

How does this affect the pH inside our stomach?

What are the ingredients in an antacid?

How does an **Actacid** work?

Why do we have acid in our stomachs anyways??

What could cause extra acid in our stomachs?

21.4: Rainwater Is Acidic and Ocean Water is Basic

Define **Acid Rain:**

What is the pH of unpolluted rain? _____

Why is unpolluted rain slightly acidic, and not neutral?

What are some of the **causes** of acid rain?

What are some of the **effects** of acid rain?

Define **Ocean Acidification:**

What was the pH of ocean water in the 1700's (pre-industrial)? _____ What was pH of ocean water in 1990's? _____

What are the main causes for ocean acidification?

What are some of the harmful effects of such acidification?

1.) According to the Bronsted-Lowry theory, bases are _____.

2.) According to the Bronsted-Lowry theory, acids are _____.

According to the Bronsted-Lowry theory, an acid-base reaction always involves a proton (H^+) transfer.

3.) **In the following reactions, identify the acid (A) and base (B) of the forward reaction and the acid (A) and base (B) of the reverse reaction.**



Neutralization Reactions – HW

Name: _____

The products of a neutralization reaction are always _____ and _____.

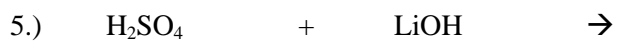
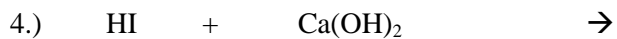
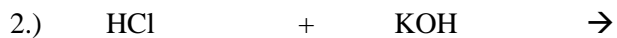
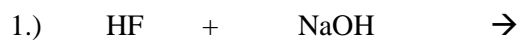
Directions: Complete and balance the following neutralization reactions. Then, give the names and formulas of the salt that will form.

Guided Practice:

Let's use the neutralization of stomach acid (HCl) by milk of magnesia (Mg(OH)₂) as an example.



Homework Problems:



*SO₄⁻² is called sulfate