

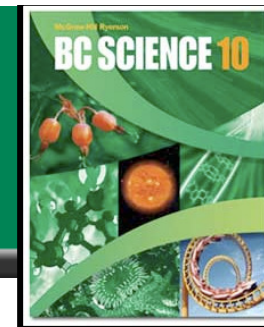
These notes are posted on my site for the following reasons:

- for students to copy in their own hand-writing
  - ◆ in order to complete their class notes
  - ◆ if student did not have enough time in class
  - ◆ if student was away and missed this section
- for assistants and tutors to follow progress of the concepts taught

Photocopied/printed notes can not be used during the Unit Notebook Check in class.

**[ndupuis@sd61.bc.ca](mailto:ndupuis@sd61.bc.ca)    [dupuis.shawbiz.ca](http://dupuis.shawbiz.ca)**

## 5.2 Salts



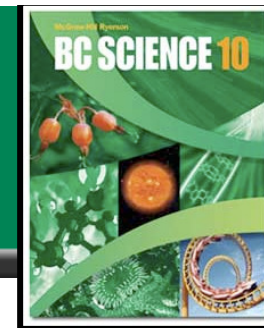
- **Salts are ionic compounds formed when acids and bases react.**
  - ◆ Salts are also produced when oxides or carbonates react with acids, or when metals react with acids.
- **Table salt, NaCl, is found in seawater, salt lakes or rock deposits.**
  - ◆ Salt was once very valuable as a commodity.
  - ◆ Iodine is now added to salt to minimize goiter (a disease of the thyroid)
- **NaCl is only one kind of salt**
  - ◆ A salt is made up of a positive ion from a base and negative ion from an acid.
  - ◆ Salts are found in many things
    - In batteries, explosives and fertilizers
    - In multivitamins
    - In many living cells

Salt crystals in Death Valley

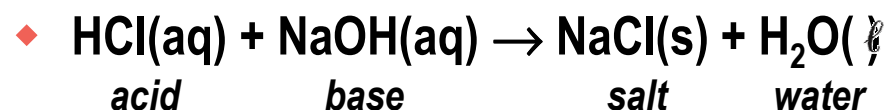


See pages 234 - 235

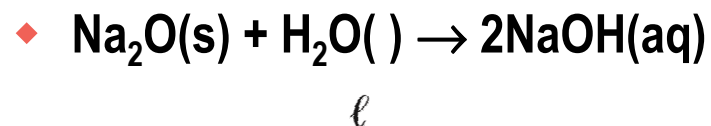
# Acid-Base Neutralization, and Metal Oxides and Non-Metal Oxides



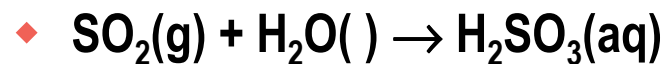
- Neutralization reactions occur when an acid and a base react to produce a salt and water.



- Metal oxides react with water to form bases.



- Non-metal oxides react with water to form acids



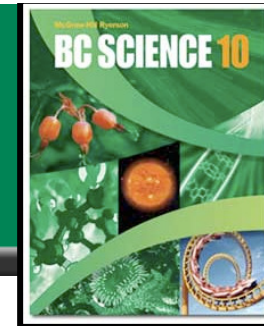
- Non-metal oxides are formed from the burning of fossil fuels
  - Add water in the atmosphere = acid precipitation



The effects of acid rain on a forest

See pages 236 - 237

# Acids and Metals, and Acids and Carbonates



- **Acids and Metals**

- ◆ The most reactive metals, at the bottom of groups 1 and 2, react vigorously with water and acids.
- ◆ All other metals are less reactive than those in groups 1 and 2.
- ◆ When metals do react with acids, H<sub>2</sub> gas is usually released
- ◆  $2\text{HCl}(\text{aq}) + \text{Mg}(\text{s}) \rightarrow \text{MgCl}_2(\text{s}) + \text{H}_2(\text{g})$

- **Acids and Carbonates**

- ◆ Carbonates (-CO<sub>3</sub>) neutralize acids, protecting locations with natural carbonate supplies from acid precipitation.
- ◆  $\text{H}_2\text{SO}_4(\text{aq}) + \text{CaCO}_3(\text{s}) \rightarrow \text{CaSO}_4(\text{s}) + \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$   
*sulphuric          calcium          calcium          water          carbon*  
*acid              carbonate      carbonate      dioxide*

See pages 238 - 239

[Take the Section 5.2 Quiz](#)

(c) McGraw Hill Ryerson 2007