

## 2a

# ACIDS, BASES, AND SALTS from the *Elements of Chemistry Series*

## Vocabulary Definitions

The following words and terms used in the program may be unfamiliar to you. Try to listen for these terms while viewing the program, pay close attention so you can later include them in your scientific descriptions, observations, and creative writing assignment activities.

**acid** - According to the Brønsted-Lowry definition, an acid is any substance that can donate a hydrogen ion.

**acid rain** - Rainfall that is acidic, below 5.6 on the pH scale.

**anion** - Negatively charged ion.

**Arrhenius, Svante (1859-1927)** - Swedish chemist.

**atom** - The fundamental unit of matter in the universe, made up of a nucleus of protons and neutrons and orbiting electrons.

**atomic number** - The number of an element determined by the number of protons in its nucleus.

**base** - According to the Brønsted-Lowry definition, a base is any substance that can accept a hydrogen ion.

**Boyle, Robert (1627-1691)** - English chemist. Boyle is often called the father of modern chemistry.

**Brønsted, Johannes (1879-1947)** - Danish chemist.

**cation** - Positively charged ion.

**chemical reaction** - A change in the chemical composition of a substance.

**conjugate acid-base pair** - An acid and a base that differ by only one  $H^+$  ion.

**compounds** - When valence electrons of elements are lost, gained, or shared between different atoms to create substances with unique chemical properties.

**electrolytes** - Substances that are good conductors of electricity.

**electrons** - Negatively charged particles that orbit the nucleus of atoms.

**element** - An atom with a unique number of protons.

**hydrogen** - Element with the atomic number 1. Hydrogen is the most common element in the universe.

**$H^+$  ion** - A positive hydrogen ion composed of one proton.

**indicator paper** - Paper that indicates whether a substance is an acid or a base. Litmus paper is a common type of indicator paper.

**ion** - Atoms with more electrons than protons or less electrons than protons.

**ionic bonds** - Two or more ions held together by the electrical attractions between them.

**litmus paper** - A special type of paper that can determine if a solution is an acid or a base. An acid turns litmus paper red and a base turns it blue.

**Lowry, Thomas (1847-1936)** - English chemist.

**matter** - Material that makes up objects. Matter cannot be created or destroyed.

**molecules** - When electrons are shared between atoms. Molecules are covalent bonds.

**negative ion** - An ion that has more electrons than protons.

**neutral atom** - When an atom has an equal number of protons and electrons, its electrical charges are balanced and the atom has a neutral electrical charge.

**neutral acid or base** - A solution that has a pH of 7 and is both an acid and a base. Pure water,  $H_2O$ , has a pH of exactly 7.

**neutralization** - A process where acids and bases react so that the properties of both are lost to form water and a salt.

**$OH^-$  ion** - A hydroxide ion composed of an oxygen atom and a negative hydrogen ion.

**periodic table** - The arrangements of elements according to their atomic number.

**pH scale** - the potential hydrogen scale is a measurement of the concentration of  $H_3O^+$  ions in solutions to indicate whether the solution is an acid or a base.

**positive ion** - An ion that has fewer electrons than protons.

**proton** - Positively charged part of the nucleus of atoms.

**Sørensen, Søren (1868-1939)** - Danish chemist.

**strong acid** - An acid with a pH of between 0 and 4.

**strong base** - A base with a pH of between 10 and 14.

**weak acid** - An acid with a pH of between 4 and 6.

**weak base** - A base with a pH of between 8 and 10.