

Science/pH Experiment

Name: _____ Date: _____

pH Scale

Scientists use a **pH scale** to measure the strength of an acid or a base. The term pH stands for "potential for hydrogen". The amount of hydrogen in a substance determines its **acidity** or **alkalinity**. Alkaline is another term for base. A number on the pH scale is used to describe the strength of **acidity** or **alkalinity**. The most commonly used pH scale goes from 1 (very acidic) to 14 (very alkaline). The number 7 on a pH scale means neutral – neither acid nor base.

All living things, from cells to plants and animals, depend on **pH balance** to survive. The term pH balance refers to the ideal level of acidity or alkalinity for an organism. Every living organism has different needs, but they all need their own specific pH balance, internally and externally. For example, fish need pH balance both in their bodies and in the water in which they live. Our own cells, blood and other internal organs need pH balance, as does the air we breathe and the water we drink. If the pH levels in an organism or its environment get out of balance, it can get sick and even die.

Nature has a special way of maintaining pH balance. **Buffers** are substances that help to balance pH levels. Our bodies have natural buffers to keep levels balanced. However, if a large amount of an outside acid or base is introduced to the system, the system is thrown off its balance and is not restored quickly. Pollution causes the pH level of air and water to change. So, clean air and water are very important for all living organisms.

