How Do We Measure Acidity?

We can divide all chemicals into three categories: acid, base, or neutral. You already know some acids, such as vinegar and lemon juice. They have a sour, biting taste.

The chemical opposite of an acid is a **base.** Some bases you might know are baking soda, liquid bleach, and milk of magnesia (for acid indigestion!).

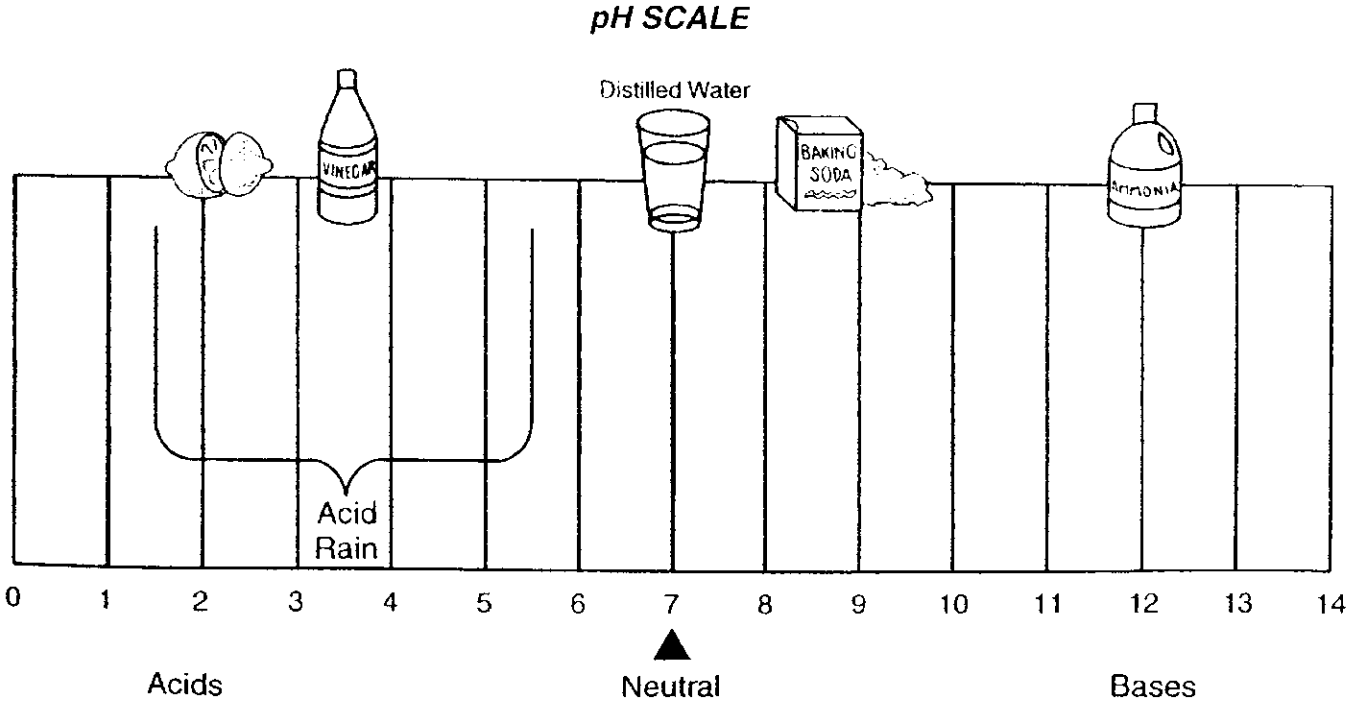
What happens when you mix an acid with a base? You make a **neutral** substance that is neither acid nor base. In other words, you have neutralized the acid with a base.

You already know there are degrees of temperature. Well, there are also degrees of acid and base. We use a special scale to measure acids and bases. It's called the **pH scale.**

The pH scale ranges from 0 (extremely acidic) to 14 (extremely basic). In between is 7, or neutral. Remember that the lower the number, the more acidic something is.

Use the pH scale below to answer these questions:

- Look at the pH scale and find pure distilled water. What is its pH? Is it an acid, base, or neutral?
- Locate the section labeled acid rain. What is the range of pH for acid rain? What are some other things that fall into the same range?
- Normal, uncontaminated rain is slightly acidic. Put your finger on the scale to show where normal rain might fall.

Why Are We Worried about Acid Rain?

A little acid in rain is normal. But a lot of acid rain disturbs many ecosystems, especially aquatic ones. For example, some kinds of animals are more sensitive to acid than others. While an adult wood frog can live in water with a pH level of 4, certain fish (like the rainbow trout and the smallmouth bass) cannot survive below pH 5.