Acids, bases, and pH.

Acids are defined many ways. One way of classifying acids and bases is by their ability to donate or accept protons. Acids are proton donors; this means they have acidic protons to donate. They liberate H+ or hydronium [H_3O^+] ion into solution, which raises the hydronium ion concentration in solution. An acid can also be defined as a compound that raises the concentration of hydronium ion in solution.

The H+ concentration has a wide range of values in aqueous solutions. It can be very large, and therefore concentrated, or very small, or dilute. The values of these concentrations are often represented with a special scale, called the pH scale. It is a practical way to handle values that have large negative exponents. Mathematically we define the pH as the negative logarithm of the hydronium ion concentration. (pH = -log[H+]). The letter p has been chosen to mean "negative logarithm of". It comes from the German word *potenz,* which means power, like power of 10. Acidic solutions have very low pH values because they have very high H+, concentrations. The more basic a solution, the higher the pH. The scale attached is taken from Timberlake. It is a pretty standard for most general chemistry texts, but it gives you an idea of where common items can be listed be their pH.[1]

Limes—1.8-2.0;	Apples—2.9-3.3;
Grapefruit—3.0-3.3;	Strawberries—3.0-3.5
Peaches—3.4-3.6	Pears—3.6-4.0
Tomatoes—4.0-4.4 Tomato juice-4	Carrots—4.9-5.3
Peas—5.8-6.4	Butter—6.1-6.4
Eggs, fresh white (I assume this means the whites?] —7.6-8.0	Vinegar—2.8
Coffee—5.5	Soda—3.2
Drain cleaner—11.2, depending on brand	Shampoo—5.7
Laundry detergent—9.4	Milk of magnesia—10.5
Rain—5.8	Wine—3.5
THE NORMAL pH RANGE OF SELECTED BODY FLUIDS.	These ranges depend on health and food intake of the patient.
Bile—6.8-8.0	Urine—5.9 but can be 7.8-8.4
Bleach—12.0	Blood—7.38
Blood plasma—7.3-7.5	Human milk—6.6-6.7
Spinal fluid—7.3-7.5	Gastric juices—1.0-3.0
Saliva—6.5-7.5	Pancreatic juice—8.0

[1] Information gathered from various general chemistry books.