## The pH Scale.

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The concentration of hydrogen ions in a solution is very important for living things. This is because, since the hydrogen ions are positively charged they alter the charge environment of other molecules in solution. By putting different forces on the molecules, the molecules change shape from their normal shape. This is particularly important for proteins in solution because the shape of a protein is related to its function.

The concentration of hydrogen ions is commonly expressed in terms of the pH scale. Low pH corresponds to high hydrogen ion concentration and vice versa. A substance that when added to water increases the concentration of hydrogen ions(lowers the pH) is called an acid. A substance that reduces the concentration of hydrogen ions(raises the pH) is called a base. Finally some substances enable solutions to resist pH changes when an acid or base is added. Such substances are called buffers. Buffers are very important in helping organisms maintain a relatively constant pH.

Study the pH chart given below carefully. Note that each decrease in pH by one pH unit means a tenfold increase in the concentration of hydrogen ions.



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