pH and Acidosis

* Balloon
* Pop or Water bottle, rinsed out
* Baking Soda
* Funnel that will fit the neck of the bottle and balloon
* Vinegar (any kind will work)
* Water

Measure out about 2 tablespoons of baking soda and fill balloon. Pour ½ cup of vinegar into bottle. Fit the neck of the balloon over the neck of the bottle trying not to spill the soda into the bottle yet.

Tip the balloon full of baking soda into the bottle of vinegar and hang on to the neck of the balloon and the bottle. The balloon will fill up with carbon dioxide that is produced when an acid in neutralized by a base. This is exactly what happens in your bloodstream when you give sodium bicarbonate.

Concept: Carbon Dioxide enters the bloodstream and when mixed with water, becomes carbonic acid. This acid is relatively weak, like vinegar is. When a patient is hypercarbic (not blowing off enough ETC02) they develop respiratory acidosis. In the past, an acidotic state was treated with IV Sodium Bicarb. Giving sodium bicarb IV caused more side effects that benefits. When the sodium bicarb came in contact with the carbonic acid, it neutralized it, causing MORE carbon dioxide which mixed with the water in the bloodstream making MORE carbonic acid.