Rainbow Colors pH Experiment

Label and fill clear plastic cups as follows: Cabbage Juice, Baking Soda, Isopropyl Alcohol, Ammonia, and Vinegar. Pour a small amount of the cabbage juice into each of the other cups. Observe the color changes.

Class Demo: Place 4 sheets of white printer paper on lab table. Place a plastic cup on each sheet. When the students aren't looking or can't see what you're doing, pour about an inch of liquid into each cup. Discuss how all the cups look the same, even though each liquid is different. Discuss ways of possible chemical analysis. Talk about using your senses: sight, sound, taste, smell, touch. Ask for volunteers to whoft and not whiff. Talk about pH indicators. Now squirt some cabbage juice into each cup and talk about the reason for each color change.

How did it do that?!

Cabbage juice is an acid/base indicator. An **indicator** is a chemical that changes one color in when mixed with an acid and a different color when mixed with a base. In this experiment, the cabbage juice turned red when mixed with vinegar (an acid), but it turned green when mixed with ammonia (a base). So why did the isopropyl alcohol stay purple and the baking soda solution turn blue? Well, alcohol is neither an acid nor a base, so there was no color change. And baking soda is a much weaker base than ammonia, so it wasn't able to turn completely green.

http://www.stevespanglerscience.com/experiment/red-cabbage-chemistry