Lemon—Life Saver

Poison control centers used to recommend lemon juice or vinegar as an antidote for some poisons. This experiment shows why. You will need "litmus" paper. But that's no problem. You can use the liquid of red cabbage to make your own.

**What to do:** Apply a few drops of lemon juice to one strip of litmus" paper. Add a few drops of ammonia to a second strip. Then apply a few drops of lemon juice to the spot made by the ammonia.

**What happens:** The strip with the lemon juice on it turns pink. The strip with the ammonia added turns green. When you add lemon to the green ammonia spot, it returns to its original reddish purple color.

**Why:** The pink color indicates the presence of acid because lemon is a mild acid, a nonmetal combined with hydrogen. The green color indicates the presence of alkali because ammonia is an alkali (otherwise known as a base), a metal combined with hydroxide. The "litmus" paper returns it to its original color when the ammonia is acted against—neutralized—by the lemon, its chemical opposite.

What does all this have to do with poison? Ammonia is poisonous if someone drinks it. Since lemon neutralizes ammonia, it was once recommended as a temporary antidote, just enough to last until the person could get to a doctor. The current emergency treatment for accidentally drinking a poison, like ammonia, is to dilute it in the stomach by drinking large amounts of water or milk.

**YOU NEED**
- Lemon juice
- Red cabbage
- "Litmus" paper
- Ammonia