

## Acid rain in a bottle (NO<sub>x</sub> version)

This is a way to model acid rain in a container for students to see. For this demonstration what you need is

- 1) large beaker to contain everything
- 2) small beaker to react the Cu with Nitric Acid
- 3) Aluminum foil to cap the beaker
- 4) indicator of some type
- 5) Cu and Conc. Nitric Acid
- 6) a Squirt bottle of water
- 7) **A HOOD of some sort**

Setup: (everything inside a hood setup)

Add water to the larger beaker and add indicator (making sure not to mix this with the Nitric acid) should be neutral pH

Place Conc Nitric acid (~1 mL) in the small beaker and place it inside the larger beaker

Ready the aluminum foil with holes poked in the simulate rain

When ready:

Add the Cu metal to the nitric acid releasing NO<sub>x</sub> inside the larger beaker. After gas has filled larger beaker squirt a little water onto Al foil to drop through the holes absorbing the NO<sub>x</sub> gas. As the acidic liquid drops into the water with the indicator, it will change the neutral solution to an acid. This is visualized by the change in the indicator color.