NOx in a beaker

****only do this demonstration with proper ventilation.*******

This demonstration utilizes the basic reaction of copper and nitric acid to form the NO2 inside the beaker system.

 $Cu(s) + 4HNO_3(aq) \rightarrow Cu(NO_3)_2(aq) + 2NO_2(g) + 2H_2O(I)$

This gas then diffuses through the system and reacts with the neutral water surrounding the inner beaker making it more acidic and changes the color of the indicator.

 $2NO_2(g) + H_2O(I) \rightarrow 2HNO_3(aq) + NO(g)$

This then makes the surrounding water more acidic and will lower the pH of the newly formed solution.