

**Strength vs Concentration**

**Chemicals available:**

0.05M HCl (strong acid)

0.05M Acetic Acid (weak acid)

**Materials for demonstration provided in kit:**

pH paper

Scintillation vials for water (for dilution purposes).

Gloves, napkins, marker to mark scintillation vials as used.

Plastic wrap to protect document camera (napkins affect pH paper)

**Materials used for multiple demos to add in**: None

**Materials you must grab immediately before:** None

**Procedure for in class demo**:

*Generally I have a student do most of the work for this while I talk. Bring extra ppe if so desired.*

Lay plastic wrap on document camera. Please be very very careful not to get anything on the document camera. Suggested: lay plastic wrap on napkins first in case of drips.

*Suggested: One of the slides included has spaces for the pH paper: Print it out and lay the strips next to the appropriate labels (use the plastic wrap over the paper).*

Use pH paper to demonstrate that the strong 0.05M solution has a low pH (around 1),

Use pH paper to demonstrate that the weak 0.05M solution has a higher, but still acidic pH (around 4),

Have students guess what happens if a couple drops of strong acid is diluted in water

Dilute 1-2 drops in water vial and use pH paper to demonstrate that the pH is actually higher (around 5-6) than the weak acid. *I’ve found this works better if I dilute it in front of them, rather than showing up with a predetermined concentration in hand*.

Have students explain why.

**Waste:**

pH paper can be disposed of in the trash, cap vials, mark as used and return to stock room.