

# Natural Science Practical

## Acids and base practical

- Very important !! Make sure that your parents or an adult know what you will be doing, so that you and your family remain safe at all times!

Today we will be looking at acids and bases. We will be conducting an experiment with household items.

When we deal with acids and bases it is very important to know the difference between the two.

To find out if something is acidic or basic, we use an indicator (not the one on your mom's car)

That will be the first thing we do today... we will make an indicator.

Below are some examples of household indicators (use what you have at home)

What you will need:

- Baking soda,  $\text{NaHCO}_3$ , fizzes when added to an acidic solution, but no change occurs in a basic solution.
- Beetroot changes from red to purplish in very basic solution.
- Curry powder and turmeric are spices that contain a bright yellow pigment called curcumin. It turns from yellow at pH 7 (also known as natural) to red at pH 8.6 (in the presence of a base)
- Onion is an olfactory indicator. The onion odor isn't detectable in strongly basic solutions. Red onion can act as a visual indicator at the same time. It changes from pale red in acid solution to green in basic solution.
- Vanilla extract, like onion, is an olfactory indicator. The vanilla odor isn't detectable in strongly basic solution because vanillin exists in ionic form at high a pH. When you put vanilla extract in a strong basic solution you will not be able to smell the vanilla extract.

Once you have identified which indicators you will be using you will need to make a table of at least 4 different bases and 4 different acids.

Start off by putting all the household items you want to test in a table. Then start testing them using your indicator and write down your findings.

Once you have identified 4 bases and 4 acids you will need to put them into a table. Your table needs to be in order from strongest base to weakest base, and the same for your acids.

You will need to use your years of experience to determine the strength of the acids and the bases.

- Hint – you may ask your classmates or your parents, and in an emergency, you may consult doctor google.

Below is an example of what your table should look like:



<u>Name of household item</u>	<u>Acid or base</u>	<u>Weak</u>	<u>Mild</u>	<u>Strong</u>
Drain cleaner	Acid			Very strong

- Remember to take photos and send it to Miss Buchanan and send your completed tables back to me.
- Lastly remember that this experiment is meant to be fun... if you're not enjoying it then you are doing it wrong.