Science Department

KNOWLEDGE & VOCABULARY ORGANISER

Year 7 Acids

Keyword	Definition
Acid	Corrosive substance which has a pH lower than 7. Acidity is caused by a high concentration of hydrogen ions.
Acidic	Having a pH lower than 7.
Alkali	A base which is soluble in water.
Alkaline	Having a pH greater than 7.
Base	A substance that reacts with an acid to neutralize it and produce a salt.
Neutralise	To be make neutral by removing any acidic or alkaline nature.
Neutral	When a substance is neither acidic nor alkaline, and has a pH of 7.
Litmus Paper	An indicator that can be red or blue. Red litmus paper turns blue in alkalis, while blue litmus turns red in acids.
pH	A scale of acidity or alkalinity. A pH value below 7 is acidic, a pH value above 7 is alkaline.
Universal Indicator Paper	Paper stained with universal indicator, a chemical solution that produces many different colour changes corresponding to different pH levels.

Lemon Juice
Citric Acid

Fizzy Drink
Carbonic Acid

Acids
If you look around your kitchen, you may find some acids to eat or drink.

Vitamin C – Ascorbic Acid
Lemons – Citric Acid
Vinegar – Ethanoic Acid

Fizzy Drink – Carbonic Acid

Some acids are more dangerous. Hydrochloric Acid (HCl), Sulfuric Acid (H_2SO_4) and Nitric Acid (HNO_3) are acids which we use in the Science Lab. These acids can come as dilute or more concentrated.

Dilute acids are not as dangerous as concentrated acids. This is because there are fewer acid particles in the same volume.

Irritant hazard sign, used for substances that are not corrosive but are irritants. Usually found on more dilute acids and alkali.

Corrosive hazard sign. Usually found on more concentrated acids and alkali.

Further reading
https://www.bbc.co.uk/bitesize/guides/zyn3b9q/revision/1

Dilute acids are irritants.

Concentrated acids are corrosive

Alkalis are bases that dissolve in water. Some like soap and washing up liquid are harmless.

Bases
A base is a substance that can react with acids and neutralise them.
Metal oxides, metal hydroxides and metal carbonates are examples of bases.
Many bases are insoluble – they don't dissolve in water. However, if a base does dissolve in water, we also call it an alkali.

Some alkalis are harmful. However, many are harmless and useful.
Many cleaning products such as bleach, washing powder and oven cleaner contain alkalis.
The most dangerous alkalis in our homes are oven cleaners and caustic soda (used to unblock drains).

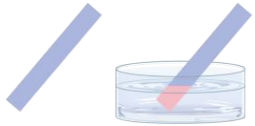
Soap and washing up liquid are safe alkalis.

Oven cleaner is a very strong alkali which is very corrosive.

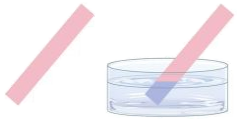
Other alkalis like oven cleaner are very corrosive.

Indicators are used to tell if something is acid or alkaline

Blue litmus paper turns red when it is put into an acid.
If the substance was an alkali or neutral, the blue litmus paper would stay blue.
Red litmus paper turns blue when it is put into an alkali.
If the substance was an acid or neutral the red litmus paper would stay red.



Blue Litmus turns red in Acids



Red Litmus turns blue in Alkalis

Universal Indicator and the pH Scale

Universal Indicator is used to measure the pH of a substance.
pH7 is Neutral, Below 7 is Acid and lower the number stronger the acid.
Above pH 7 is Alkali and larger the number stronger the alkali.