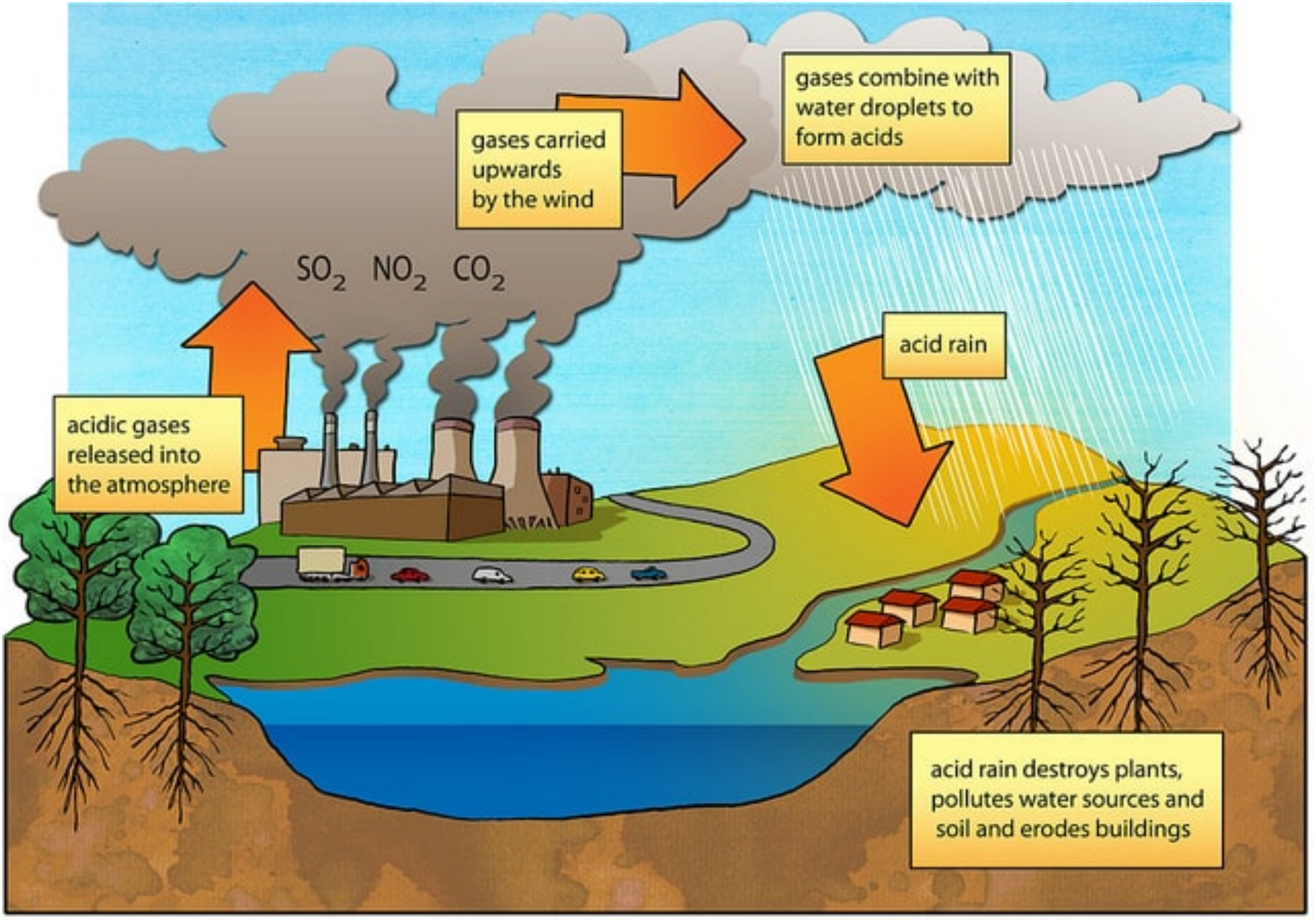
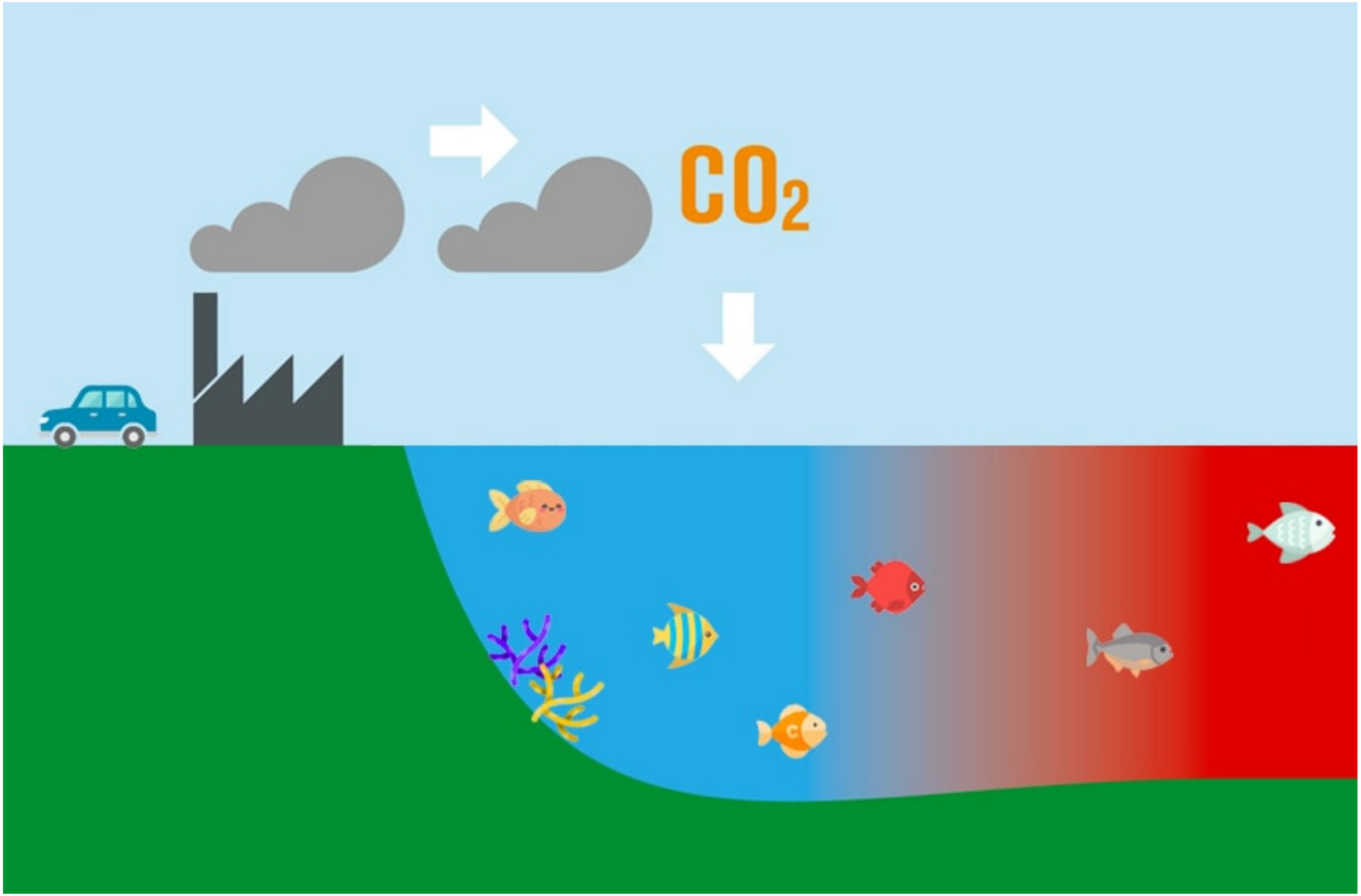
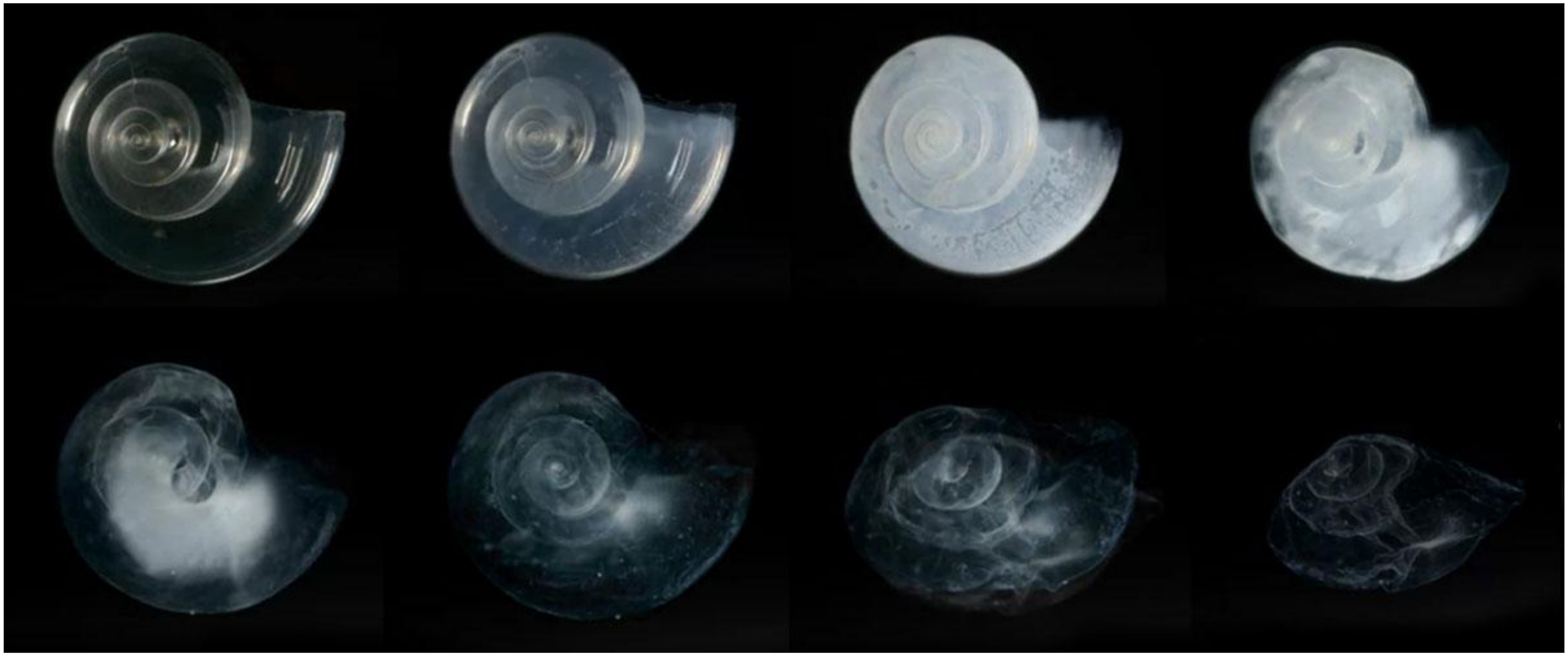
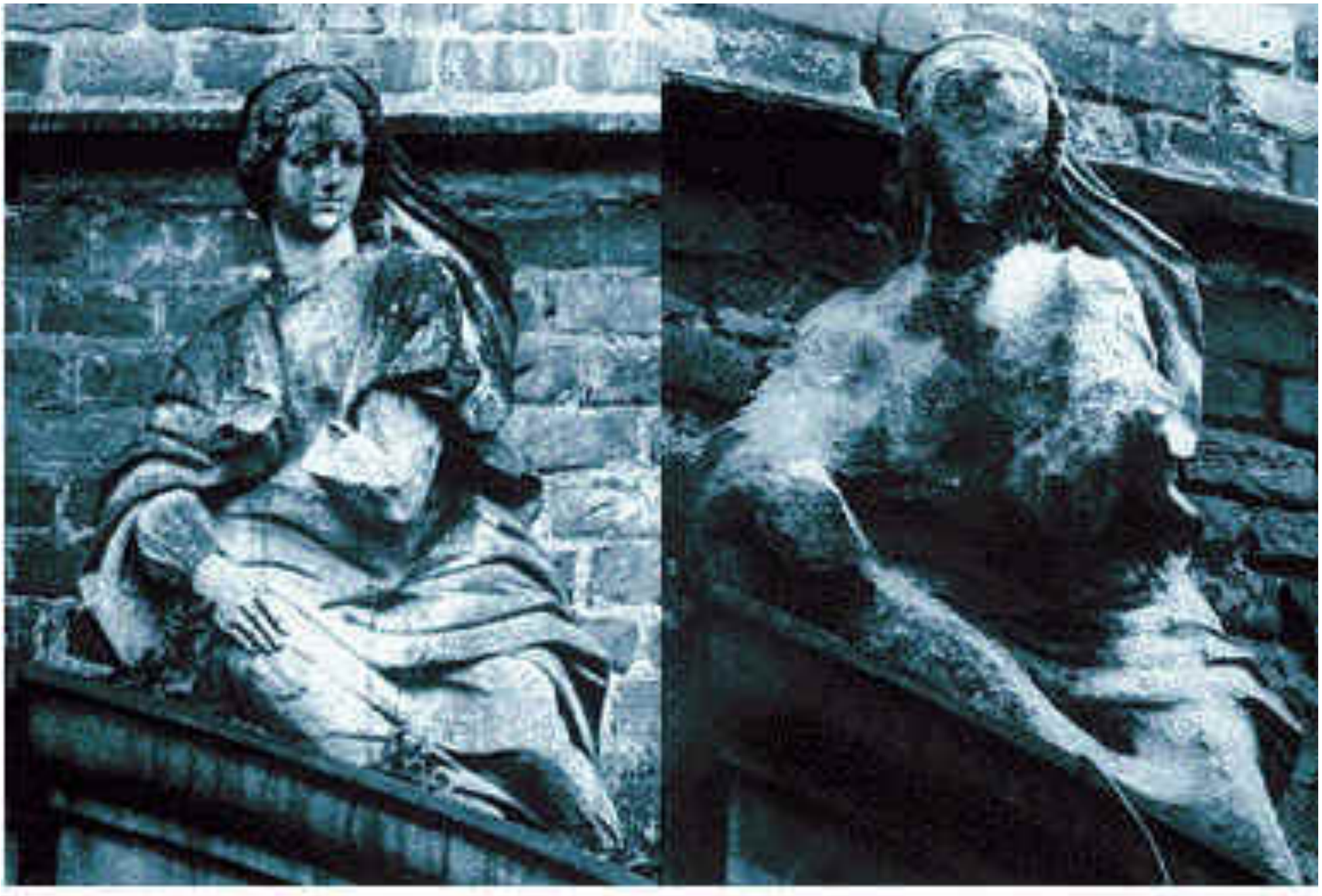
Acids in the Environment


gases carried upwards by the wind
gases combine with water droplets to form acids
SO_2 NO_2 CO_2
acidic gases released into the atmosphere
acid rain
acid rain destroys plants, pollutes water sources and soil and erodes buildings


CO_2



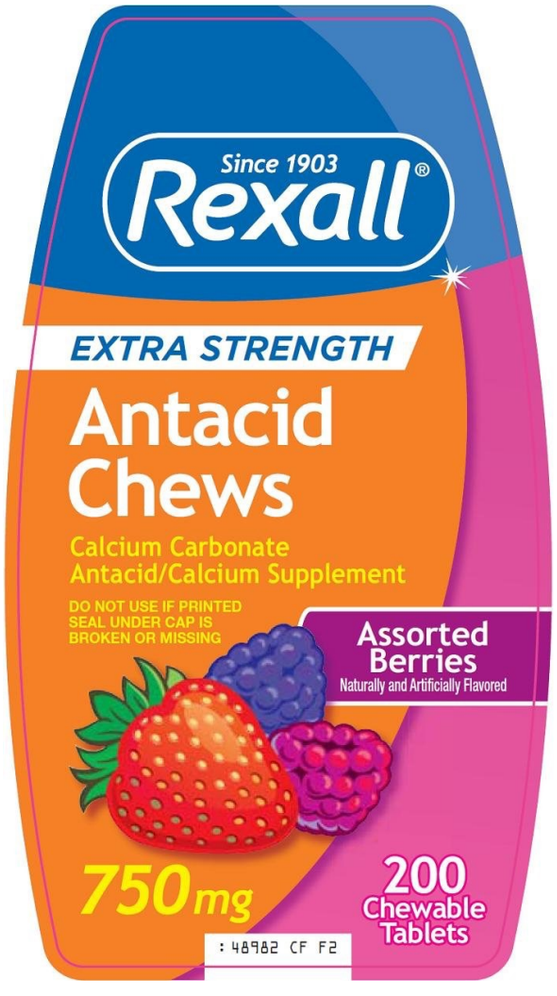


How acid rain affects stonework.
The picture on the left was taken in 1908.
The picture on the right was taken in 1968


1886
2018

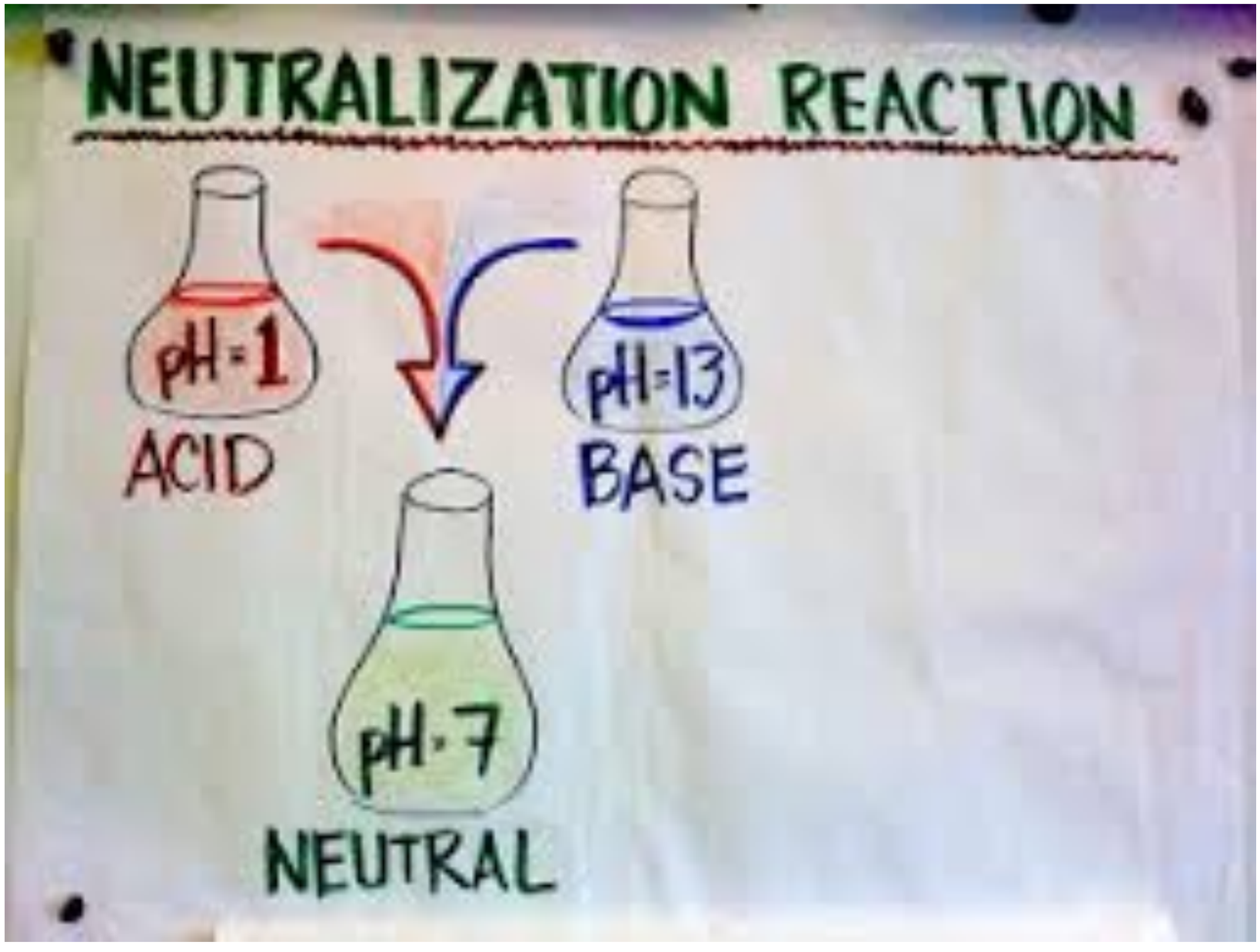
Neutralization Reactions

Why are stomach remedies called antacids?



Why is a gas produced when baking soda is added to vinegar?

- These are acid-base reactions or neutralization reactions.



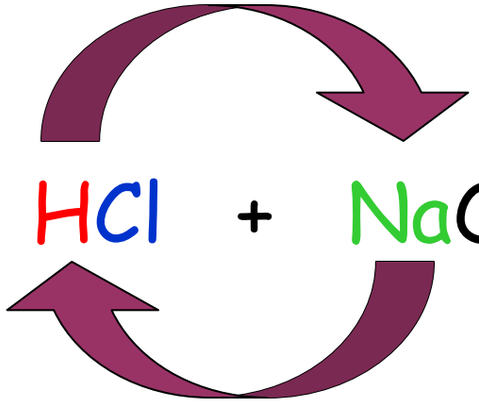
Neutralization Reactions

Neutralization reactions are *double displacement* reactions which occurs between acids and bases.

The products are usually **water** and a some kind of **salt**.

A **salt** is defined as an *ionic compound* which can be derived from an **acid-base reaction**.

Examples:



HCl + NaOH → NaCl + HOH

2 HCl + $Mg(OH)_2$ → $MgCl_2$ + HOH

During a neutralization reaction, the *hydrogen ion* from the acid reacts with the *hydroxide ion* from the base:

$H^+ + OH^- \rightarrow HOH$ or H_2O

(which is neutral)


13
HD
abc


Curlformers
by Hairdair

Uses of Neutralization Reactions

- Hairdressers use acids and bases to make permanent waves or curls.

- The hair-curling solution is a base that softens the hair and breaks chemical bonds so that it can take the shape of the curlers.

- After soaking the hair in the base solution for the required time, hairdresser squirt on a “neutralizer” solution (an acid).

- The hair stiffen up by forming the bonds back that were broken.