## DIFFERENT REACTIONS with ACIDS

## NEUTRALISATION REACTIONS

- This is when an acid reacts with a base to produce a neutral salt, and water.
- So the acid is neutralised by the base.

Acid + Base $\rightarrow$ Salt + Water



- The $\mathbf{H}$ from the acid reacts with the $\mathbf{O H}$ from the base. This is where the $\mathrm{H}_{2} \mathrm{O}$ comes from.

$$
\mathrm{HCl}+\mathrm{NaOH} \rightarrow \mathrm{NaCl}+\mathrm{H}_{2} \mathrm{O}
$$

HydroChloric Acid + Sodium HydrOxide $\rightarrow$ Table Salt + Water See other examples of Neutralisation Reactions on Page 39.

ACID + METAL $\rightarrow$ SALT + HYDROGEN

$$
2 \mathrm{HCl}+\mathrm{Mg} \rightarrow \mathrm{MgCl}_{2}+\mathrm{H}_{2}
$$

## ACID + METAL-HYDROXIDE $\rightarrow$ SALT + WATER

 $\mathrm{HCl}+\mathrm{NaOH} \rightarrow \mathrm{NaCl}+\mathrm{H}_{2} \mathrm{O}$ACID + METAL-OXIDE $\rightarrow$ SALT + WATER $\mathrm{HCl}+\mathrm{MgO} \rightarrow \mathrm{MgCl}_{2}+\mathrm{H}_{2} \mathrm{O}$
ACID + METAL-CARBONATE $\rightarrow$ SALT + $\mathrm{CO}_{2}+$ WATER

$$
\begin{gathered}
\mathrm{HCl}+\mathrm{CaCO}_{3} \rightarrow \mathrm{CaCl}_{2}+\mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O} \\
\underline{\text { ACID RAIN }}
\end{gathered}
$$

$\mathrm{O}_{2}, \mathrm{CO}_{2}$ and N -Oxides $+\mathrm{H}_{2} \mathrm{O} \rightarrow$ Acid Rair (See details of Acid Rain on Page 41.)

