

Types of Chemical Reactions - Quick Reference with Examples

A companion download to the Cogniks blog post: "Class 10 Science: Chemical Reactions and Equations Explained with Real-Life Examples" - cogniks.com

Type	General Pattern	Example Equation	Real-Life Example
Combination	$A + B \rightarrow AB$	$\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$	Quicklime + water in whitewashing; respiration
Decomposition	$AB \rightarrow A + B$	$\text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2$	Limestone heated to make cement; baking soda when heated
Displacement	$A + BC \rightarrow AC + B$	$\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$	An iron nail displacing copper in copper sulphate solution
Double Displacement	$AB + CD \rightarrow AD + CB$	$\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 \downarrow + 2\text{NaCl}$	Precipitation reactions; antacids neutralising stomach acid
Oxidation-Reduction (Redox)	Oxidation = gain O / loss H Reduction = loss O / gain H	$\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$	Rusting of iron; respiration; batteries discharging

The Three Kinds of Decomposition

Kind	Trigger	Example
Thermal decomposition	Heat	$\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$ (limestone heated)
Electrolytic decomposition	Electricity	$2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$ (electrolysis of water)
Photolytic decomposition	Light	$2\text{AgCl} \xrightarrow{\text{sunlight}} 2\text{Ag} + \text{Cl}_2$ (used in black-and-white photography)

Based on the CBSE Class 10 Science syllabus (2026-27). Always cross-check against your current NCERT textbook. © Cogniks - cogniks.com