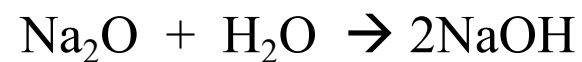


Arrhenius concept – acids produce hydrogen ions ( $\text{H}^+$ ) in aqueous solutions, while bases produce hydroxide ions ( $\text{OH}^-$ ).

The Bronsted-Lowery definition – an acid is a proton donor; a base is a proton acceptor.

6 Strong Acids		6 Strong Bases	
HClO <sub>4</sub>	perchloric acid	LiOH	lithium hydroxide
HCl	hydrochloric acid	NaOH	sodium hydroxide
HBr	hydrobromic acid	KOH	potassium hydroxide
HI	hydroiodic acid	Ca(OH) <sub>2</sub>	calcium hydroxide
HNO <sub>3</sub>	nitric acid	Sr(OH) <sub>2</sub>	strontium hydroxide
H <sub>2</sub> SO <sub>4</sub>	sulfuric acid	Ba(OH) <sub>2</sub>	barium hydroxide

**Alkalis** are solutions obtained when a metal hydroxide (e.g. NaOH) dissolves in water or then basic oxides can react with water





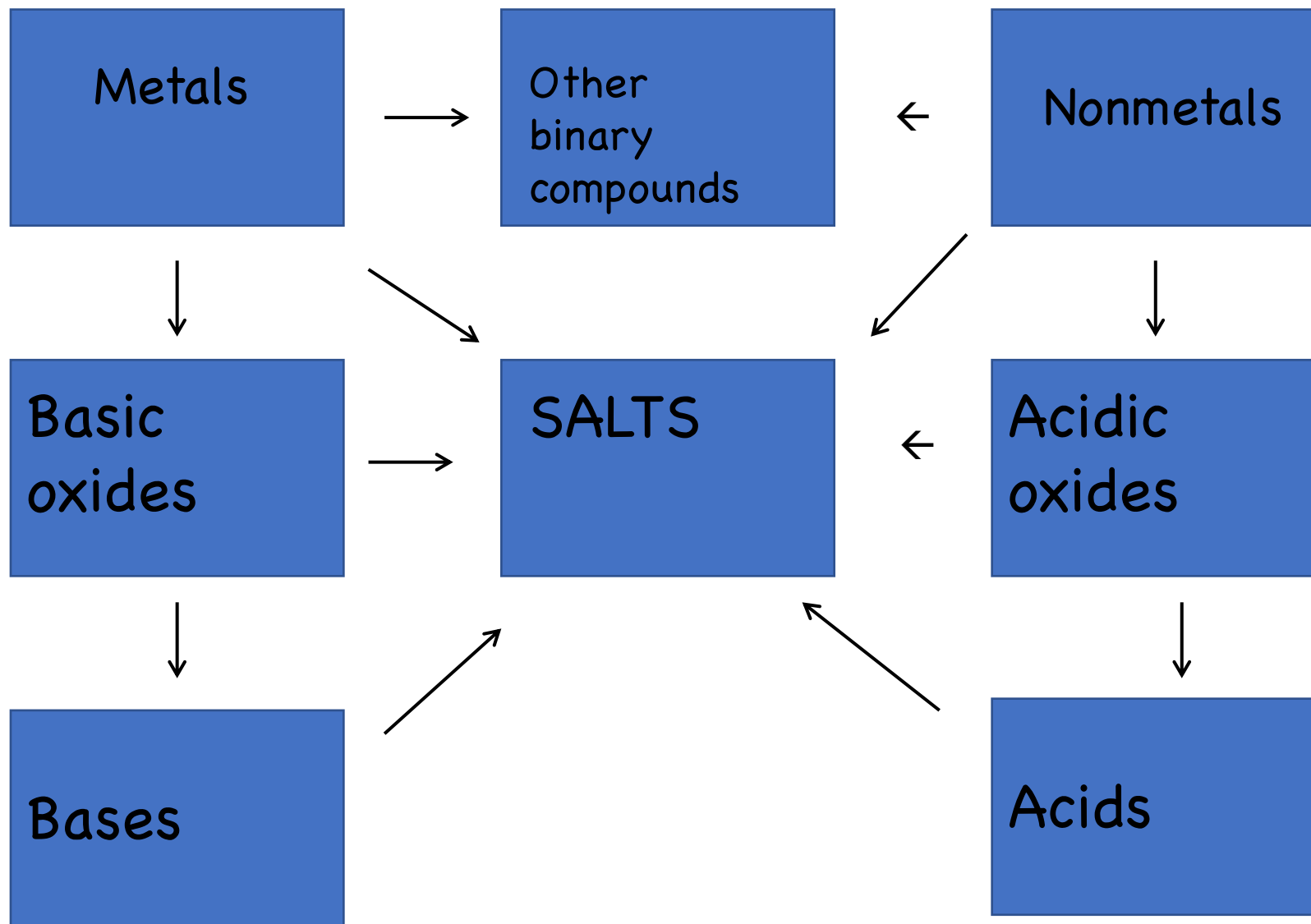
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<https://youtu.be/dFYJ7a7-wlc>



<https://youtu.be/hW5lkiSy4lw>



	Element	Oxidation Reaction
<p>React vigorously with cold H<sub>2</sub>O to form H<sub>2</sub></p> <p>React with steam to form H<sub>2</sub></p> <p>React with simple acids to form H<sub>2</sub></p> <p>Will not dissolve in simple acids</p>	Lithium	Li → Li <sup>+</sup> + e <sup>-</sup>
	Potassium	K → K <sup>+</sup> + e <sup>-</sup>
	Barium	Ba → Ba <sup>2+</sup> + 2e <sup>-</sup>
	Calcium	Ca → Ca <sup>2+</sup> + 2e <sup>-</sup>
	Sodium	Na → Na <sup>+</sup> + e <sup>-</sup>
	Magnesium	Mg → Mg <sup>2+</sup> + 2e <sup>-</sup>
	Aluminum	Al → Al <sup>3+</sup> + 3e <sup>-</sup>
	Manganese	Mn → Mn <sup>2+</sup> + 2e <sup>-</sup>
	Zinc	Zn → Zn <sup>2+</sup> + 2e <sup>-</sup>
	Chromium	Cr → Cr <sup>3+</sup> + 3e <sup>-</sup>
	Iron	Fe → Fe <sup>2+</sup> + 2e <sup>-</sup>
	Cadmium	Cd → Cd <sup>2+</sup> + 2e <sup>-</sup>
	Cobalt	Co → Co <sup>2+</sup> + 2e <sup>-</sup>
	Nickel	Ni → Ni <sup>2+</sup> + 2e <sup>-</sup>
	Tin	Sn → Sn <sup>2+</sup> + 2e <sup>-</sup>
	Lead	Pb → Pb <sup>2+</sup> + 2e <sup>-</sup>
	Hydrogen	H <sub>2</sub> → 2H <sup>+</sup> + 2e <sup>-</sup>
	Copper	Cu → Cu <sup>2+</sup> + 2e <sup>-</sup>
	Silver	Ag → Ag <sup>+</sup> + e <sup>-</sup>
Mercury	Hg → Hg <sup>2+</sup> + 2e <sup>-</sup>	
Platinum	Pt → Pt <sup>2+</sup> + 2e <sup>-</sup>	
Gold	Au → Au <sup>+</sup> + e <sup>-</sup>	

Increasing ease of oxidation