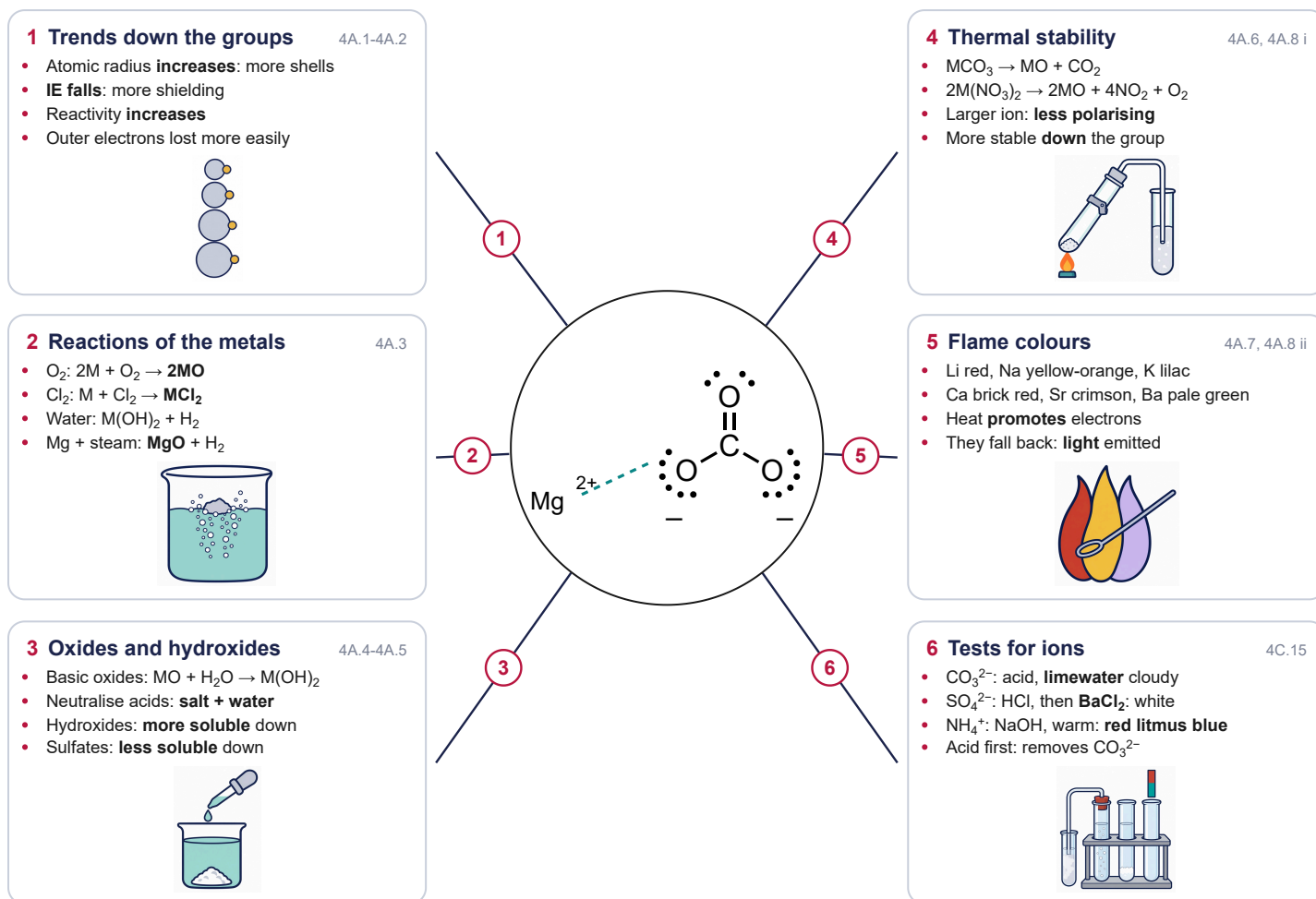


Groups 1 and 2 Map

Edexcel A Level Chemistry · Topic 4 Inorganic Chemistry and the Periodic Table · Groups 1 and 2



Down Group 2: Mg → Ba one larger ion explains most of the rows

Property	Trend	Why
Atomic radius	increases	one more shell each period
First ionisation energy	decreases	outer electron further out and more shielded
Reaction with water	faster	electrons lost more easily
Hydroxide solubility	increases	Mg(OH) ₂ sparingly soluble; Ba(OH) ₂ soluble
Sulfate solubility	decreases	BaSO ₄ insoluble: the sulfate test
Carbonate stability	increases	larger cation polarises the anion less

Worked examples

Which nitrate?

- lilac flame; O₂ only
- the Group 1 pattern
- KNO₃**

Carbonate to CO₂

- 5.00 g CaCO₃ (M 100.1)
- 0.0500 mol
- 1.20 dm³ CO₂ at r.t.p.**

Which anion?

- no fizz with HCl
- white precipitate with BaCl₂
- sulfate**

Group 2 compounds return in Topic 4B (halide tests) and in lattice energy (Topic 13).



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