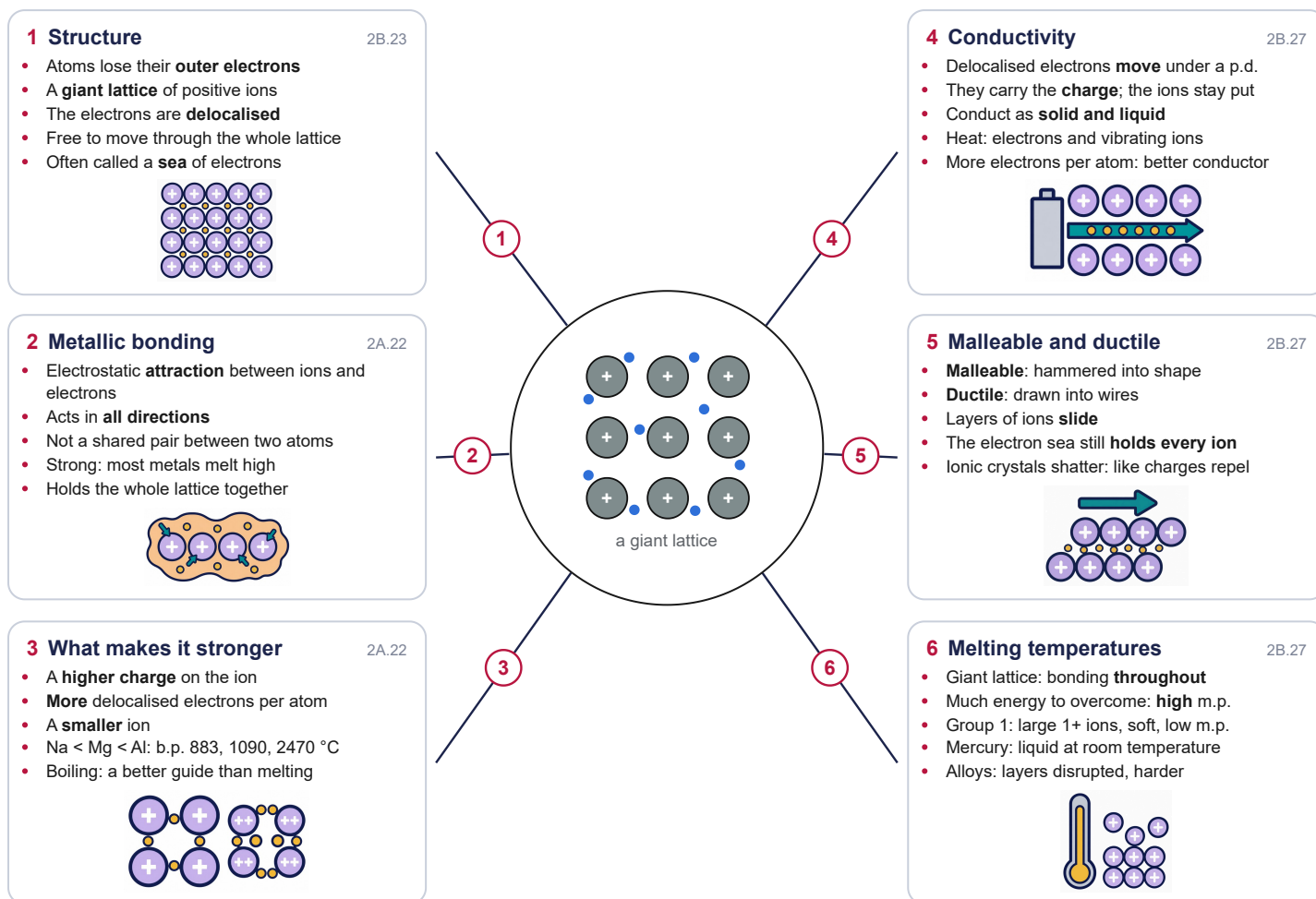


Metallic Bonding Map

Edexcel A Level Chemistry · Topic 2 Bonding and Structure · Metallic Bonding



Comparing metals ionic radii and temperatures rounded; b.p. tracks the strength of the bonding best

Metal	Ion	e ⁻ per atom	Ionic radius / pm	m.p. / °C	b.p. / °C
Li	Li ⁺	1	76	181	1342
Na	Na ⁺	1	102	98	883
K	K ⁺	1	138	63	759
Mg	Mg ²⁺	2	72	650	1090
Ca	Ca ²⁺	2	100	842	1484
Al	Al ³⁺	3	54	660	2470

Worked examples

Describing the bonding

- Lattice of positive ions
- Sea of delocalised electrons
- Attraction between them

Comparing two metals

- Charge on the ion
- Electrons per atom
- Size of the ion

Metal or ionic?

- Metal: conducts as a solid
- Metal: bends; ionic: shatters
- Ionic: conducts molten only

Metallic, ionic and covalent giant lattices are compared in Structure Types.



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