

properties of metals

malleable and ductile	electrons are able to reposition themselves to maintain electrostatic bonds when put under pressure, preventing the material from splitting
lustre	electrons are good reflectors of photons
high melting and boiling point	metals are held together by strong non-directional electrostatic attraction, meaning a large amount of heat energy is required to deform the structure of the crystal lattice
electrical conductivity	free moving electrons can carry electricity across the material
heat conductivity	electrons aren't held in place firmly so can vibrate enough to pass and hold heat

balancing chemical equations

1. the number of atoms of an element should be the same on both sides of the equation (may require multiples of compounds)
2. all compounds should have no net charge (swap and drop)

properties of cations

- brittle, hard
- low melting point
- unable to conduct electricity solid
- electrical conductivity in aqueous and molten states

naming ionic compounds

cation	when writing the name of an ionic compound the cation keeps its original name
anion	whereas the anion is reduced to its root and the suffix '-ide' is added
transition metals	transition metals are able to gain and lose a variation of electrons as required, therefore when written the charge should be included in brackets in roman numerals

precipitation reactions

1. reactants are two compound
2. being aqueous, the compounds are actually separated into ions
3. the reactants swap anions
4. solubility is determined by solubility table, one resulting compound must be a solid for it to qualify as a precipitate reaction

polyatomic ions

ammonium	NH_4^+
hydroxide	OH^-
nitrate	NO_3^-
bicarbonate	HCO_3^-
carbonate	CO_3^{2-}
sulfate	SO_4^{2-}
phosphate	PO_4^{3-}

always soluble compounds

soluble compounds	insoluble exceptions
Grp 1 ions	None
NO_3^- & CH_3COO^-	None
Cl^- , Br^- & I^-	Ag^+ , Pb^{2+} & Hg^+