

Redox reactions : electron transfer between reducing agent & oxidizing agent

• 1 reactant is oxidized (reducing agent) & 1 reactant is reduced (oxidizing agent)

**OXIDATION:**

• electron is lost  $\rightarrow$  "e<sup>-</sup>" product

**REDUCTION:**

• electron is GAINED  $\rightarrow$  "e<sup>-</sup>" reactant

- The extent of the redox must be balanced!

Balance for:

① mass (species)

② charge

- to balance redox reactions we can use half reaction method

• species that is oxidized gets its own  $\frac{1}{2}$  rxn

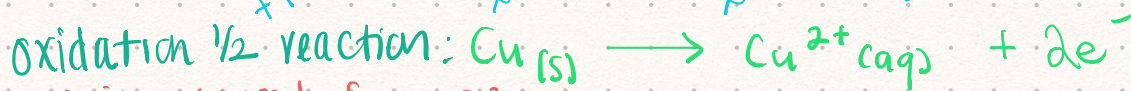
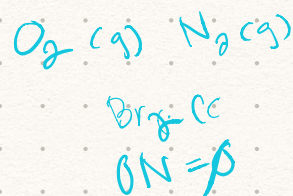
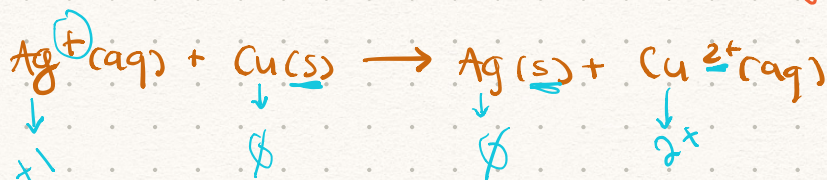
• species being reduced get its own  $\frac{1}{2}$  rxn

Example:

Balance the following net ionic equation:



① Determine what is being oxidized (losing electrons, oxidation # gets more positive) and what is being reduced



- is it balanced for mass?

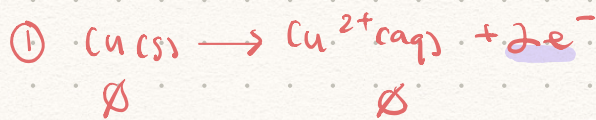
- balanced for charge?



- is it balanced for charge?

- is it balanced for mass?

- if necessary multiply  $\frac{1}{2}$  rxn(s) by LCD so that charges on opposite sides balance out



ADD both equations to get balanced overall rxn:

