Ionic compounds

- consist of a metal + a non-metal
- metal always loses electrons + becomes a positively charged ion (cation)
- non-metal always gains electrons + becomes a negatively charged ion (anion)
- ionic bond forms from electrostatic attraction between the cation + anion

Li atom [3p] 2e → electron transfer → F atom [9p] 2e

Li ion [3p] 2e 3p 4n → +1 F ion [9p] 2e 9p

Naming compounds
ex. 1) CaO  Calcium oxide

Rules:  (1) Name metal first.
        (2) Name non-metal second + change ending to "ide."

ex. 2) MgSO₄  (3) If a polyatomic ion is in the formula, don’t change its name.
            Magnesium sulfate
ex. 3) FeCl₃  Fe⁺²  Fe⁺³  Cl⁻¹
Iron III chloride  Cl⁻¹  Cl⁻¹

(4) If metal has more than one ion charge, use a Roman numeral in name after metal to indicate which ion is used.

Writing formulas
ex. 1 Aluminum oxide  Al⁺³  O⁻²
Al₂O₃  Al⁺³  O⁻²

Rules:
(1) Write symbols + charges. Add more ions until charges cancel.
(2) Use a subscript (# behind symbol) to show how many of each ion is needed.

ex. a Nickel II chlorate  Ni⁺²  ClO₃⁻¹
Ni (ClO₃)₂  ClO₃⁻¹

(3) Use the ion charge indicated by Roman numeral for metal.
(4) Put brackets around the polyatomic ion if you need
more than one + put subscript outside the bracket.