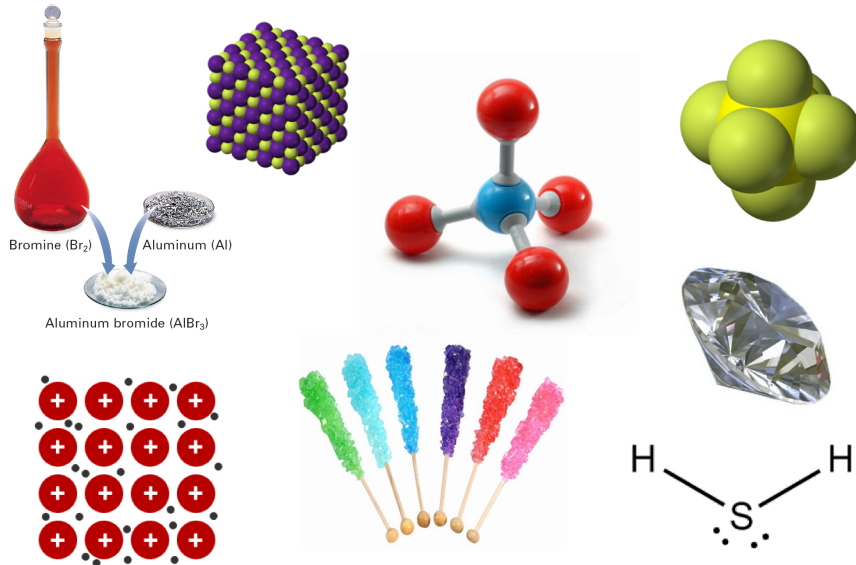


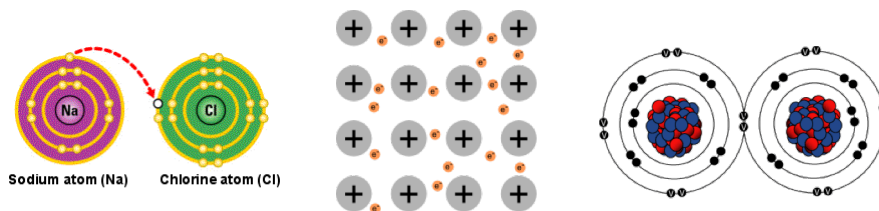
BONDING



Chemical Bond

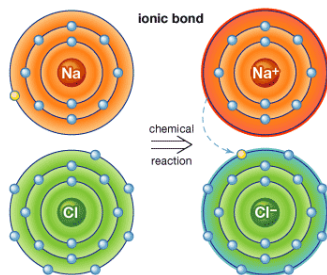
Attraction that holds atoms together

- Types include **IONIC**, **METALLIC**, or **COVALENT**
- Differences in electronegativity determine the bond type



Ionic Bond

TRANSFER of electrons between atoms

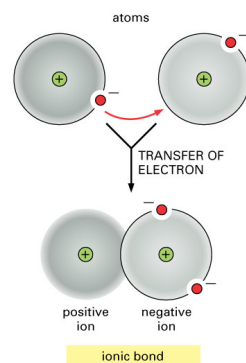


- Each atom achieves a noble gas configuration (full valence shell)
- Usually between a **METAL** and a **NONMETAL**
- **Formula Unit**: lowest whole-number ratio of ions in an ionic compound (ex: NaCl or MgCl₂)

Ionic Bonding

- How to show using **Electron Dot Structures**:

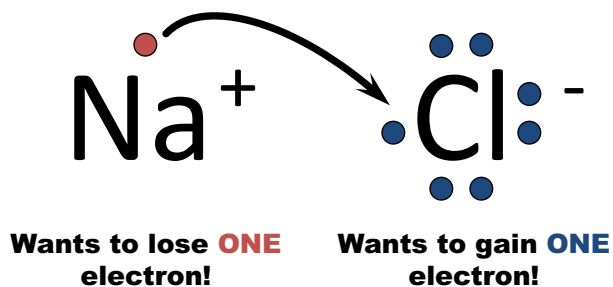
- 1) Draw the dot structure for each element in the ionic compound
- 2) Determine which element will lose e- and which will gain e- and how many
- 3) Use arrows to show the e- being **transferred** to an empty space on the anion's dot structure
- 4) Continue until each element has a complete octet... add more of each element as needed



Ionic Bonding

• **EXAMPLE:**

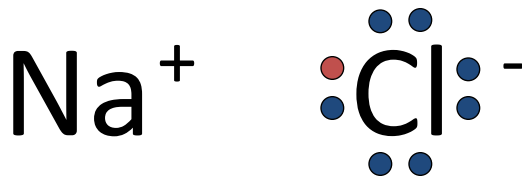
Show the electron dot structures for **sodium** and **chlorine** using arrows to indicate the transfer of e⁻.



Ionic Bonding

• **EXAMPLE:**

Show the electron dot structures for **sodium** and **chlorine** using arrows to indicate the transfer of e⁻.

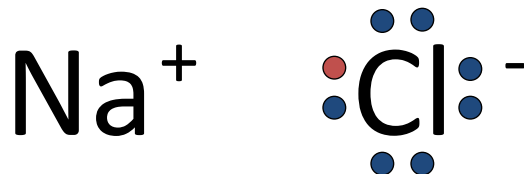


To write the **formula unit** for the compound:
write the element symbol for the cation followed
by the anion symbol... to indicate the # of each
use subscripts (none needed if just one)!!

Ionic Bonding

• **EXAMPLE:**

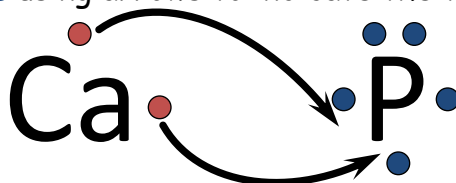
Show the electron dot structures for **sodium** and **chlorine** using arrows to indicate the transfer of e⁻.



Ionic Bonding

• **EXAMPLE:**

Show the electron dot structures for **calcium** and **phosphorus** using arrows to indicate the transfer of e⁻.

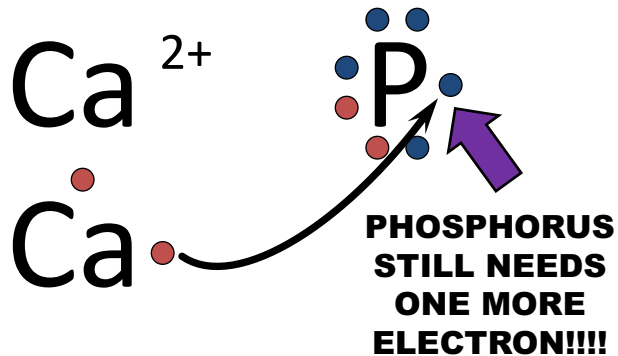


Wants to lose **TWO** electrons! Wants to gain **THREE** electrons!

Ionic Bonding

- **EXAMPLE:**

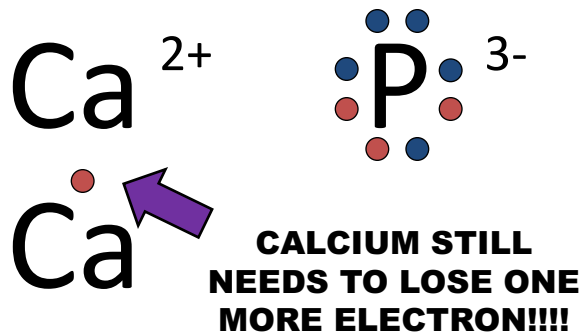
Show the electron dot structures for **calcium** and **phosphorus** using arrows to indicate the transfer of e^- .



Ionic Bonding

- **EXAMPLE:**

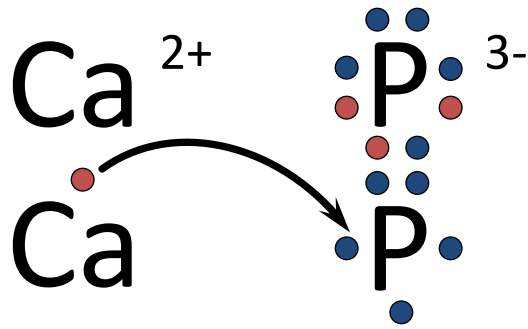
Show the electron dot structures for **calcium** and **phosphorus** using arrows to indicate the transfer of e^- .



Ionic Bonding

• **EXAMPLE:**

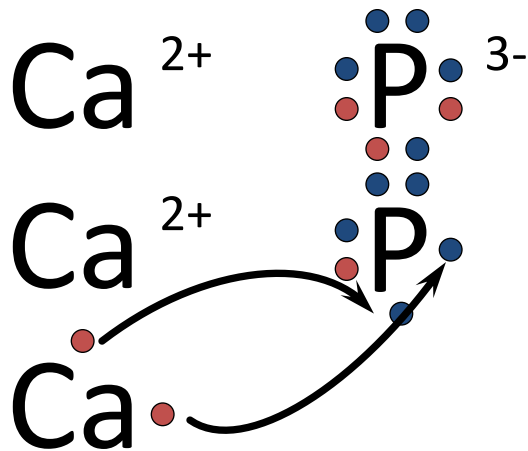
Show the electron dot structures for **calcium** and **phosphorus** using arrows to indicate the transfer of e^- .



Ionic Bonding

• **EXAMPLE:**

Show the electron dot structures for **calcium** and **phosphorus** using arrows to indicate the transfer of e^- .



Ionic Bonding

• **EXAMPLE:**

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