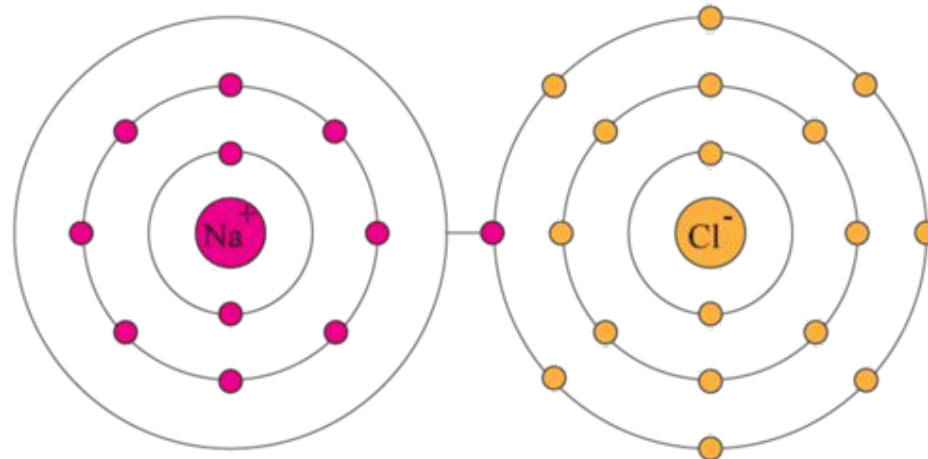


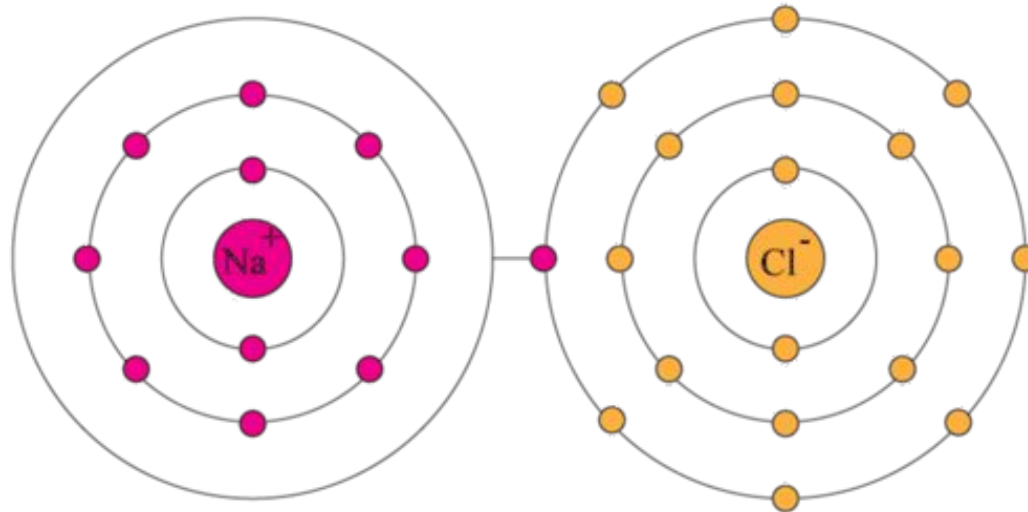
Chemical Bonds

- The atoms in compounds are held together by **chemical bonds**.
- Bond formation involves the electrons that surround each atomic nucleus. The electrons that are available to form bonds are called **valence electrons**.



Ionic Bonds

- An ionic bond is formed when **one or more electrons are transferred from one atom to another**, forming **ions**.
 - Ionic bonds are the **strongest** type of chemical bonds.



Ions

- An atom that loses electrons becomes **positively charged**.
 - This atom is called a **cation**.
- An atom that gains electrons becomes **negatively charged**.
 - This atom is called an **anion**.



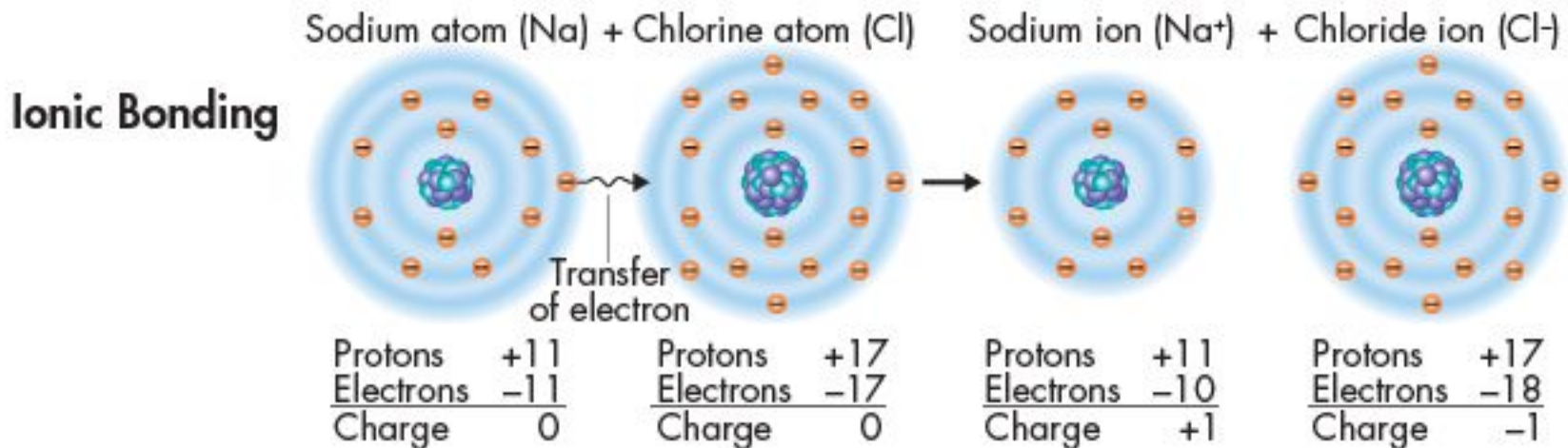
CATS ARE GOOD
(POSITIVE)



ONIONS
ARE
BAD
(NEGATIVE)

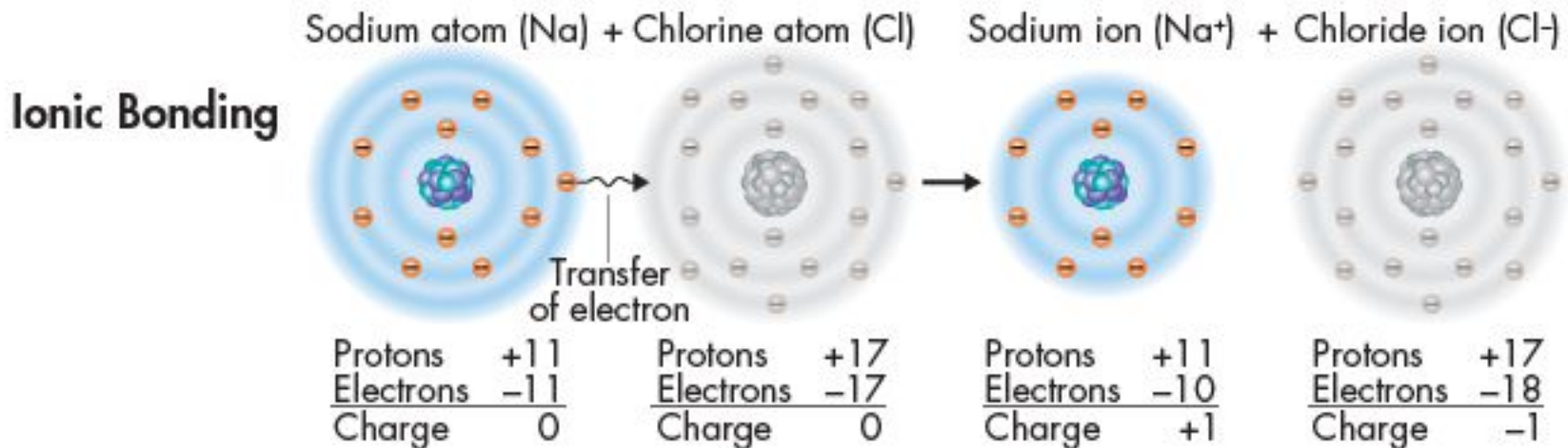
Ionic Bonds Example

- Ionic bonds form between sodium and chlorine to form NaCl, table salt.



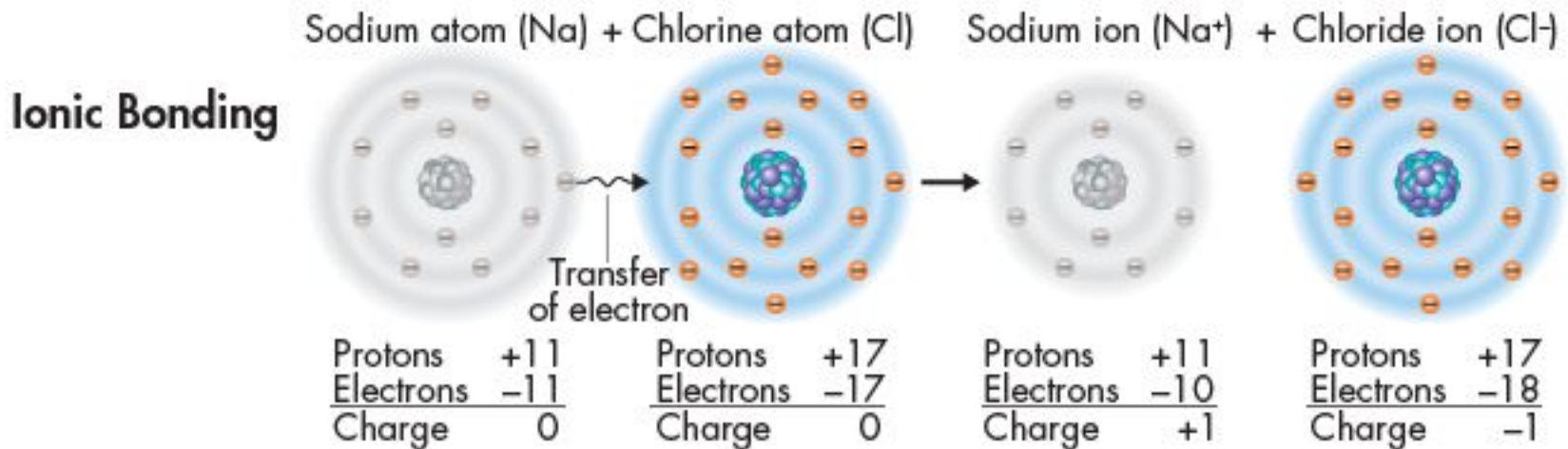
Ionic Bonds Example

- A sodium atom easily loses its one valence electron and becomes a sodium ion (Na^+).



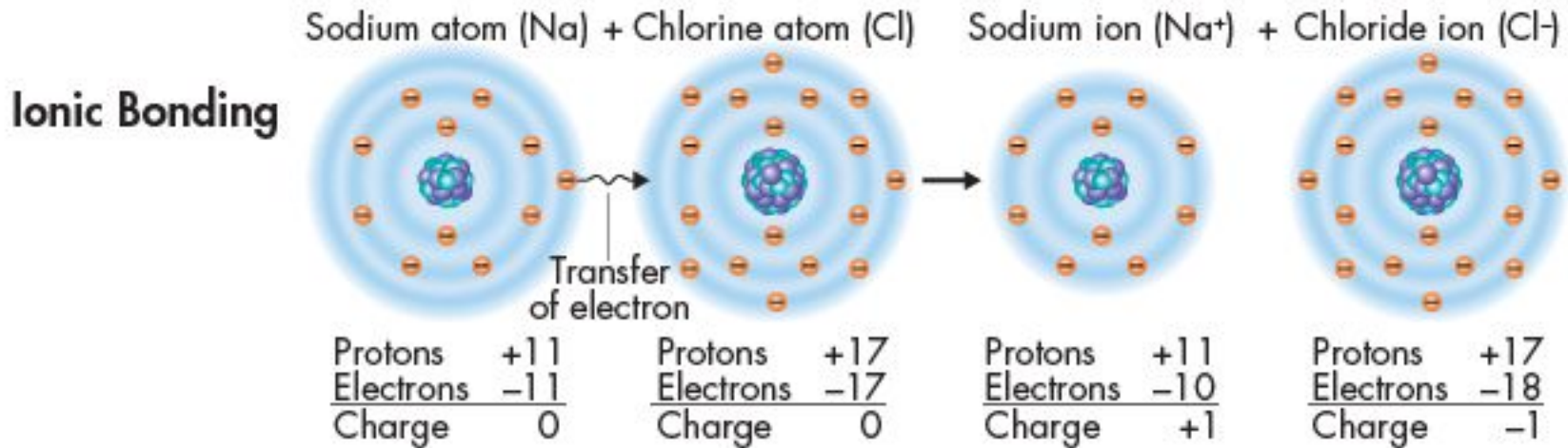
Ionic Bonds Example

- A chlorine atom easily gains an electron (from sodium) and becomes a chloride ion (Cl^-).



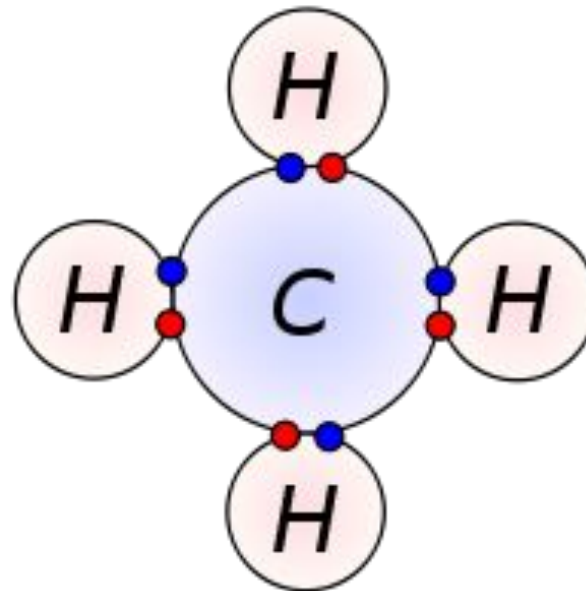
Ionic Bonds Example

- These oppositely charged ions have a strong attraction for each other, forming an ionic bond.



Covalent Bonds

- A covalent bond forms when **electrons are shared rather than transferred.**
 - The moving electrons travel about the nuclei of both atoms.



- Electron from hydrogen
- Electron from carbon

Analogy of Covalent Bonds



Ionic or Covalent Bond???

I'm sweating so much.
I wish I could just give
this blanket away.



Emily

I'm so cold
I wish I could get
a blanket.



Sarah

Emily gives the
→
blanket to Sarah

Wow, I am so
comfortable now, I am
no longer sweating.



Emily

I'm so comfortable
in a blanket now



Sarah

Ionic or Covalent Bond???

Sarah, I'm cold.



Emily

I'm cold too



Sarah



Emily and Sarah
→
share the blanket

Wow, we both feel so cozy and comfortable after sharing the blanket.



Emily Sarah