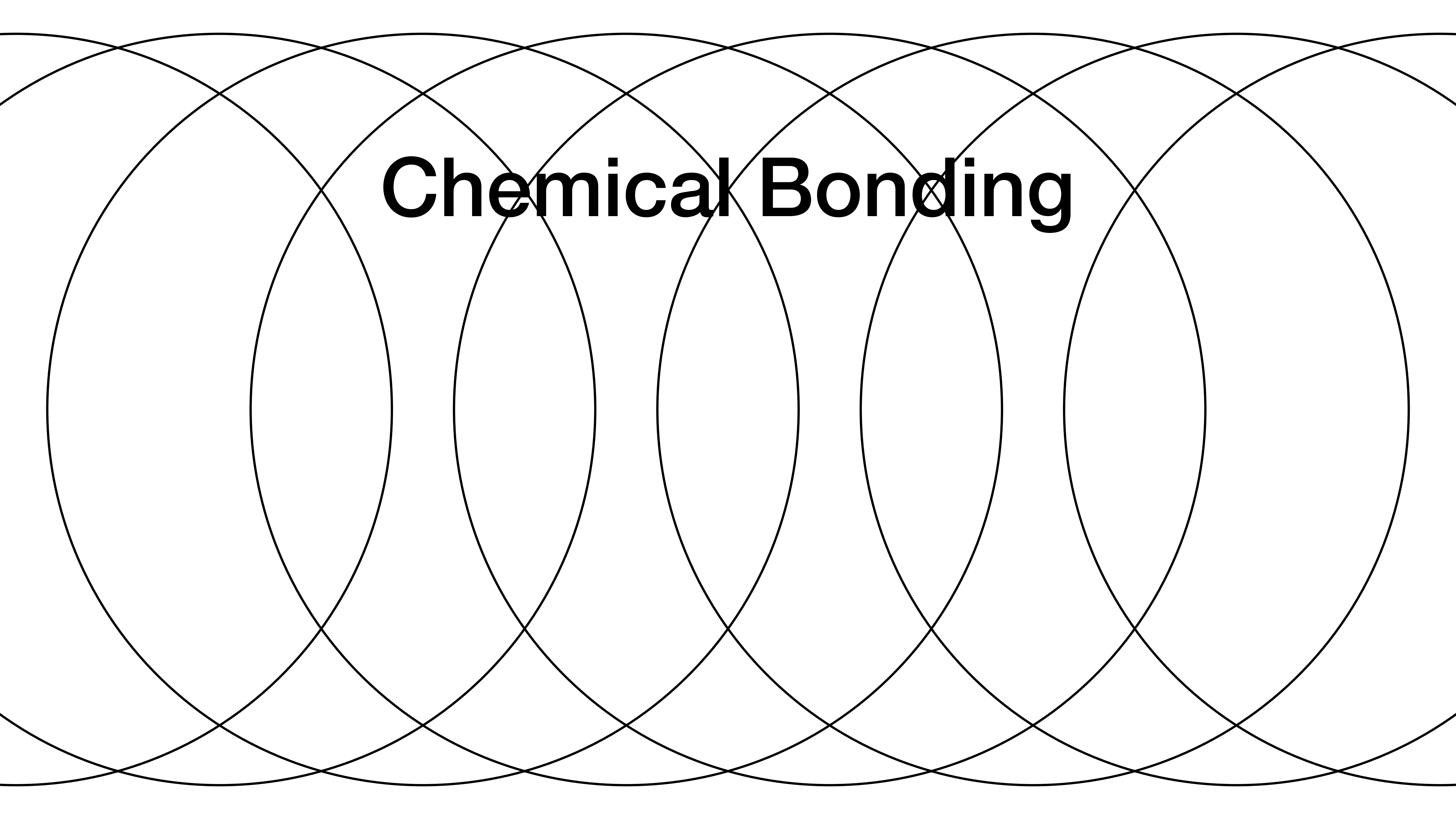
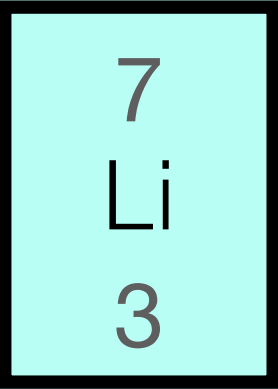


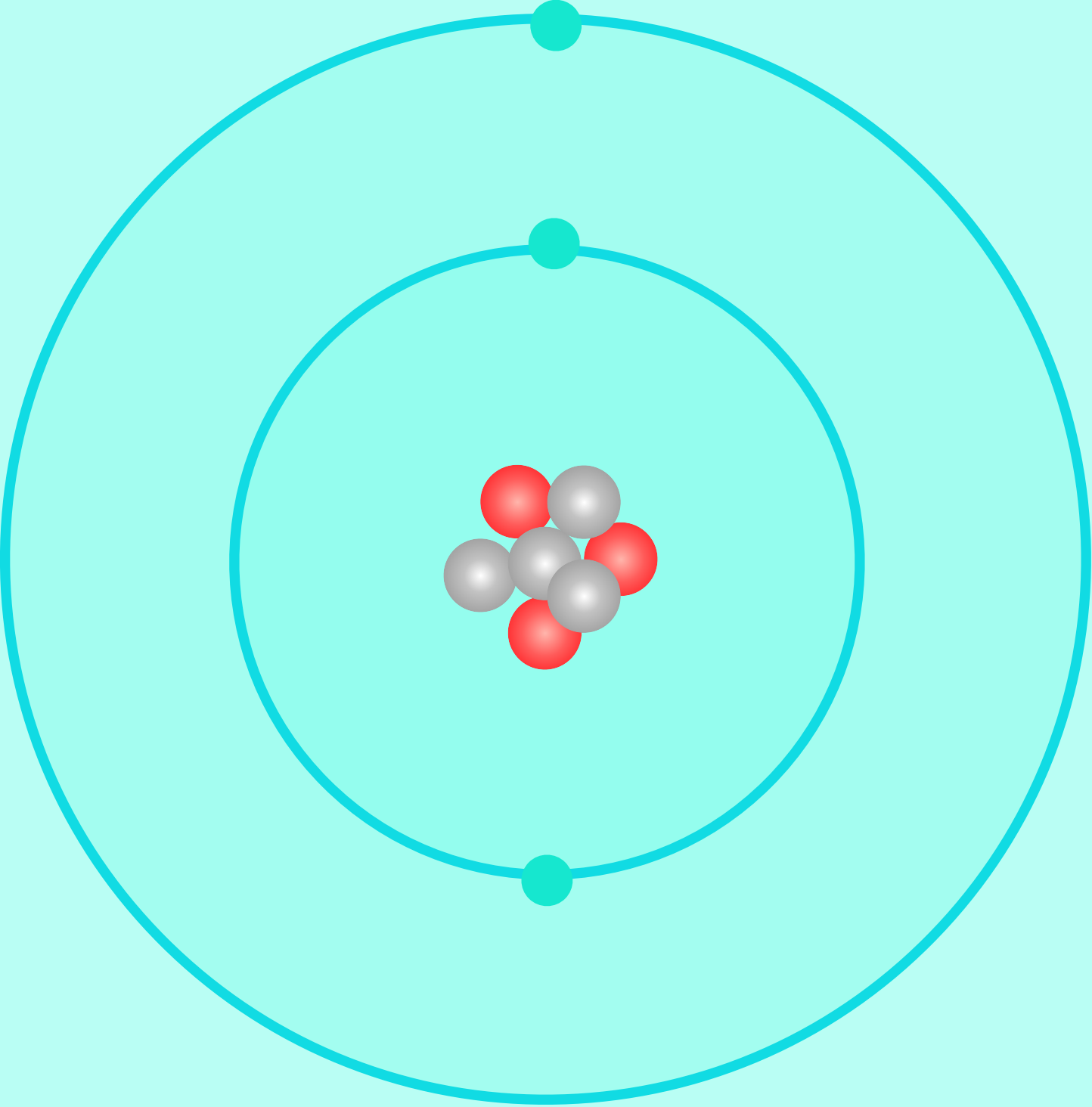


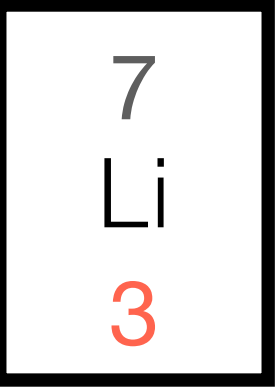
Chemical Bonding

Chemical Bonding

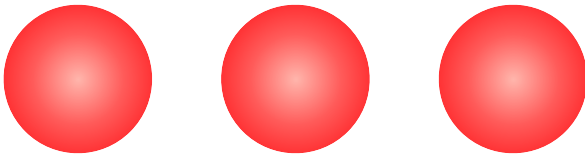


Lithium

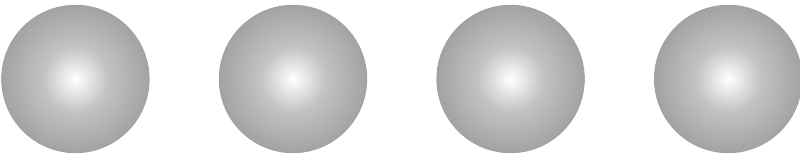




Lithium



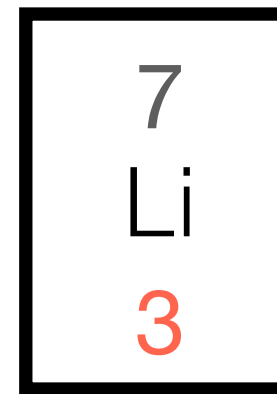
3 Protons (+)



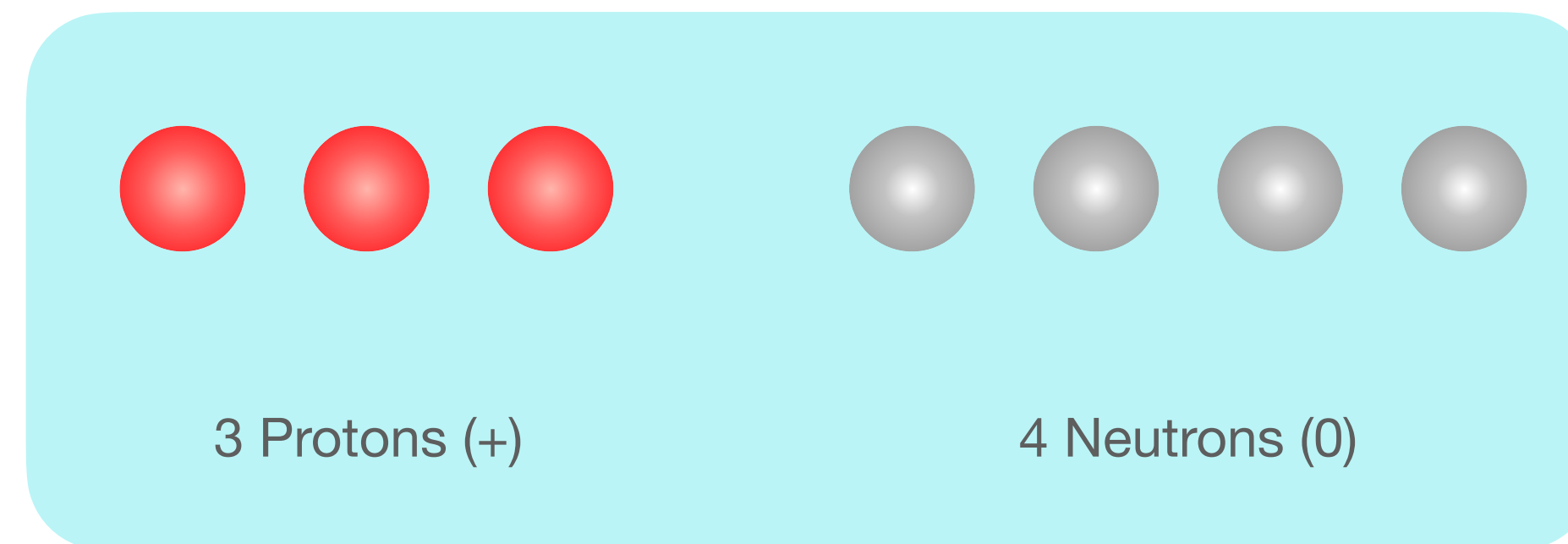
4 Neutrons (0)



3 Electrons (-)

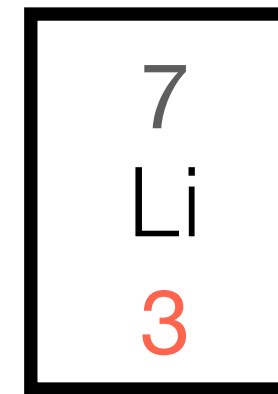


Lithium

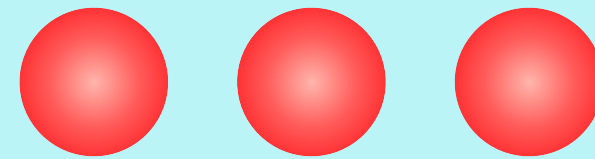


mass number = 7

**equal
number of
protons
and
electrons**



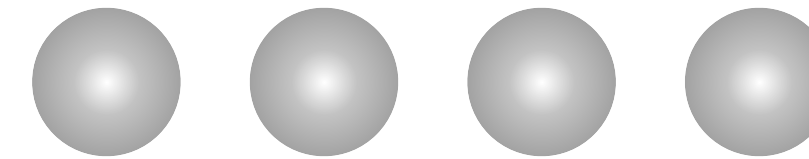
Lithium



3 Protons (+)

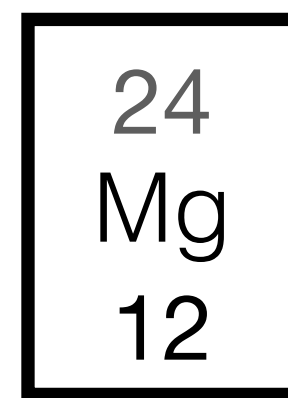


3 Electrons (-)

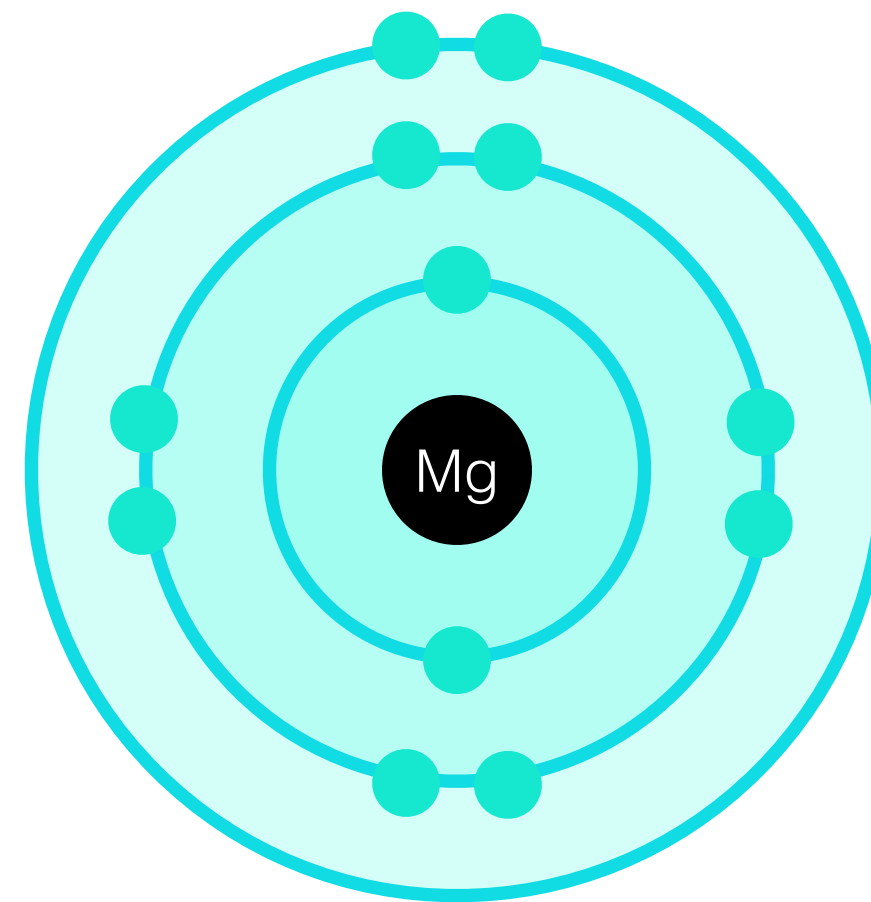


4 Neutrons (0)

Electron Shells

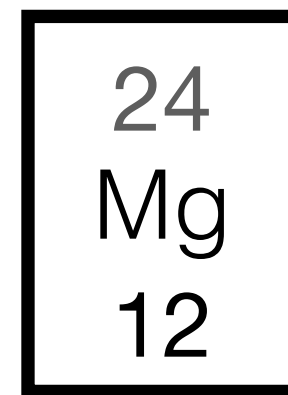


Magnesium

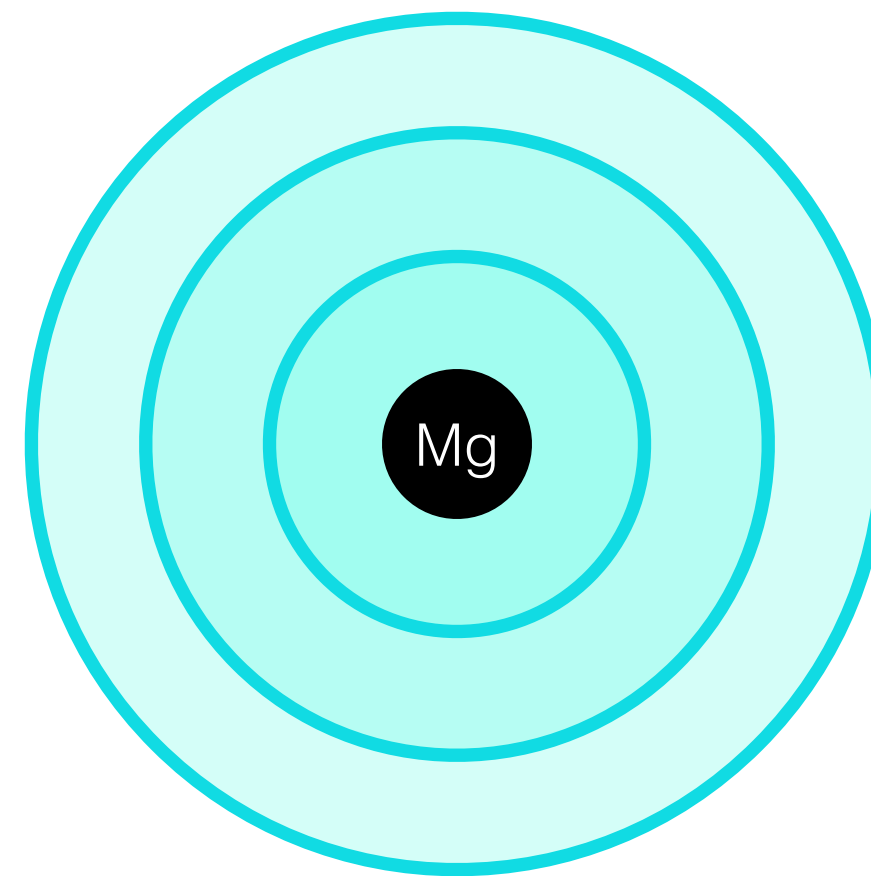


A Magnesium atom has 12 protons in its nucleus so it is orbited by 12 electrons.

Electron Shells



Magnesium



The outer shell is also called the 'valence' shell.

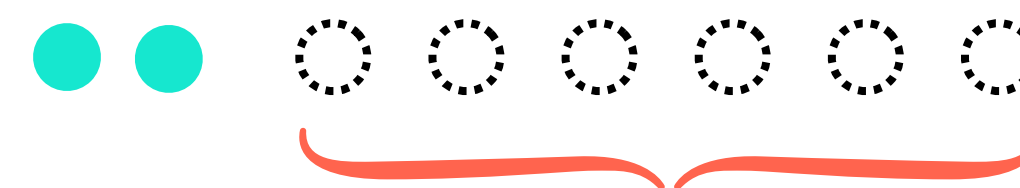
- 1st shell holds up to 2 electrons



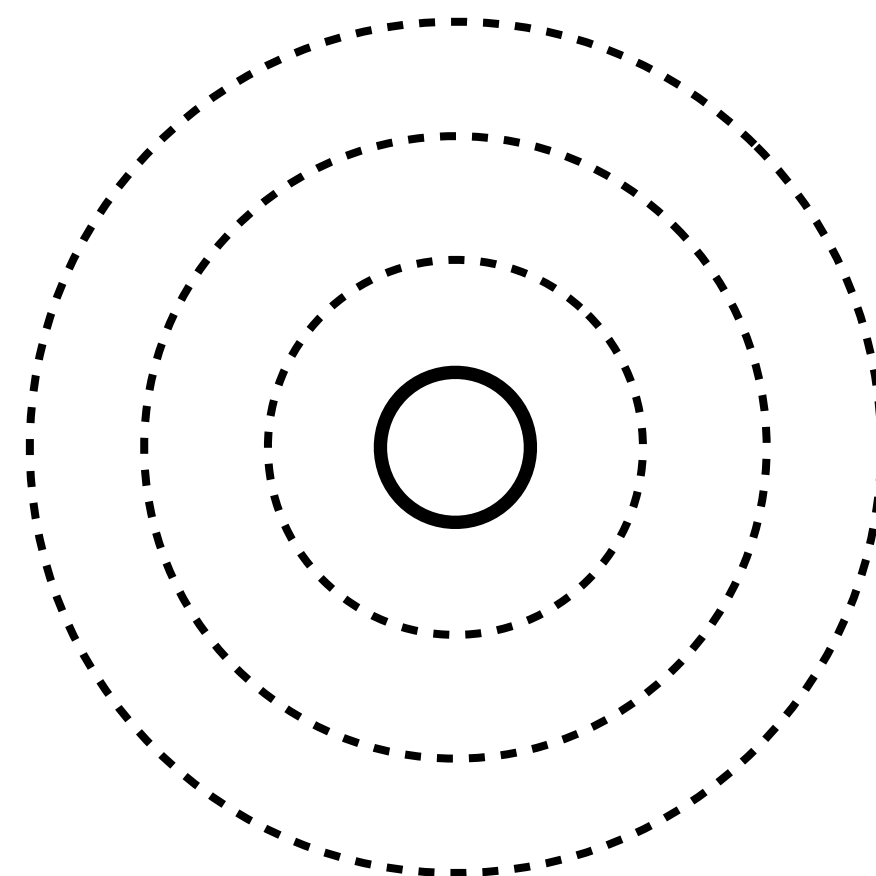
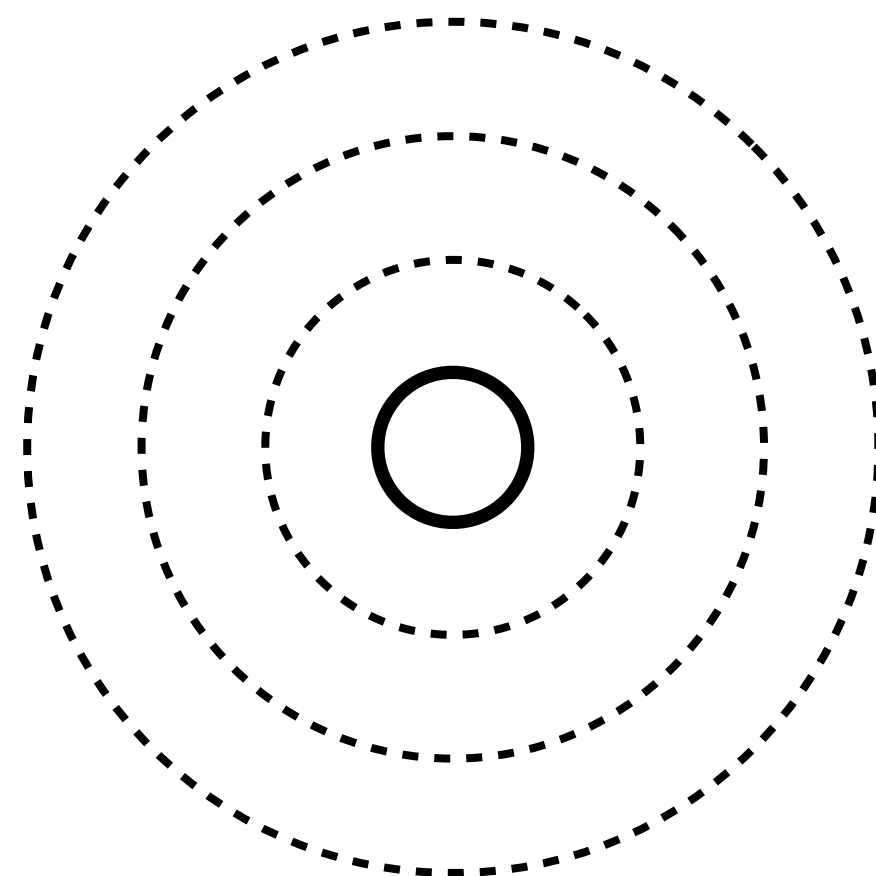
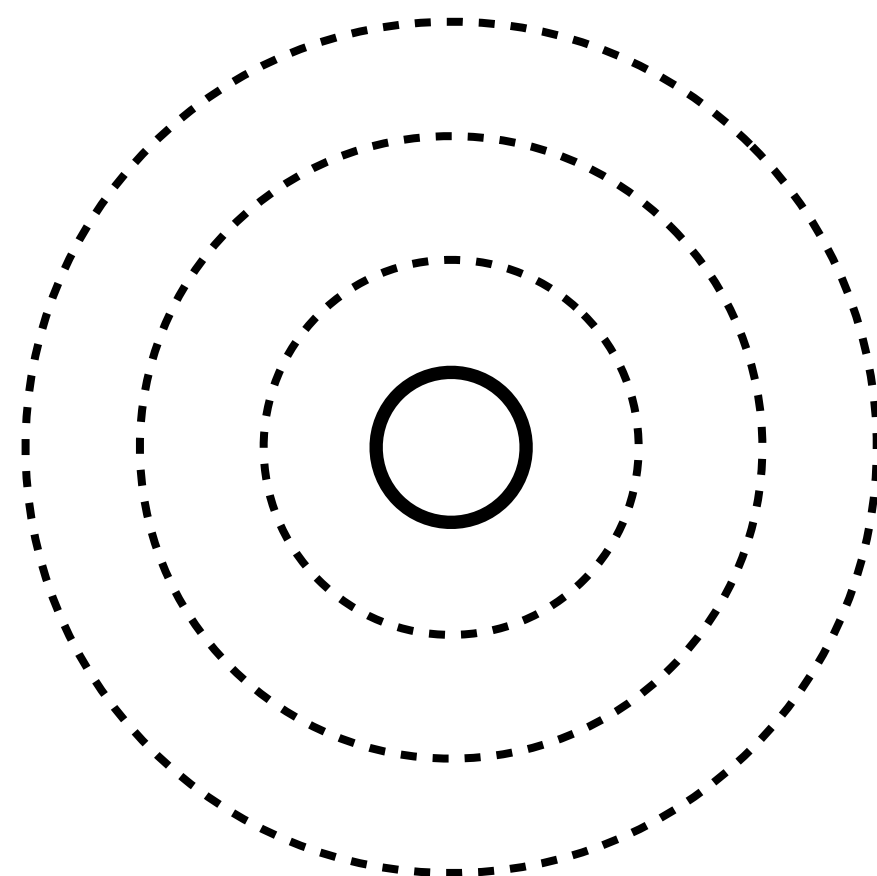
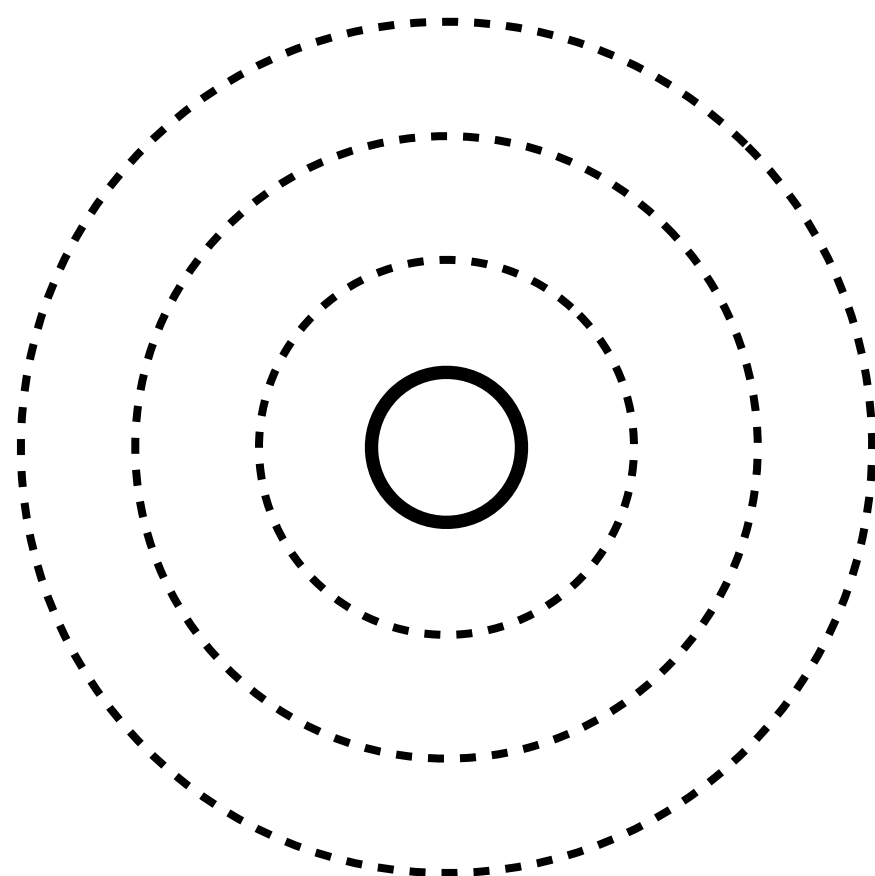
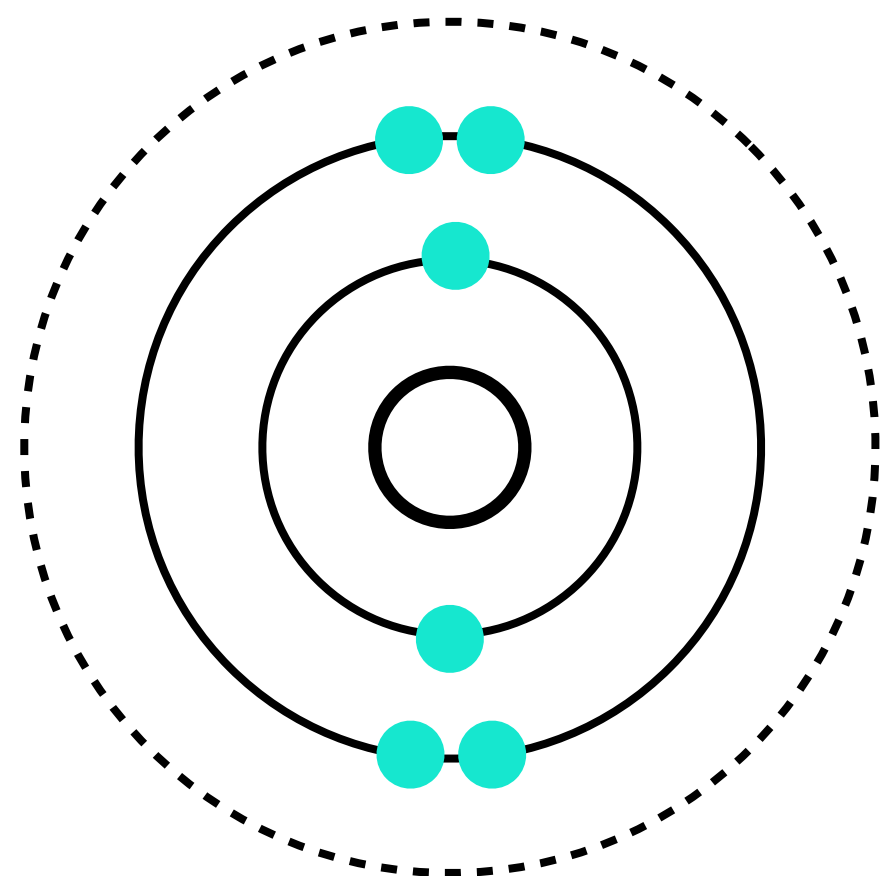
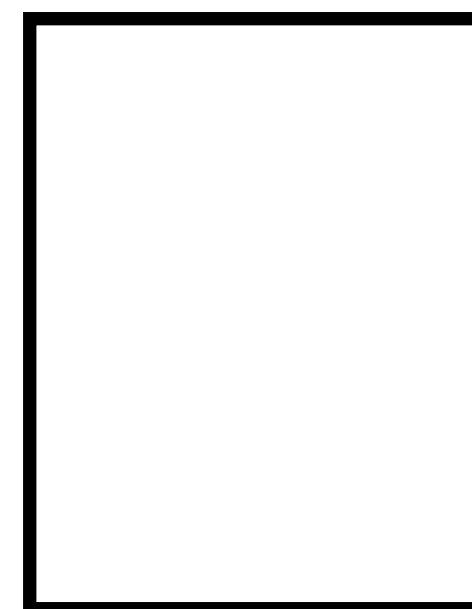
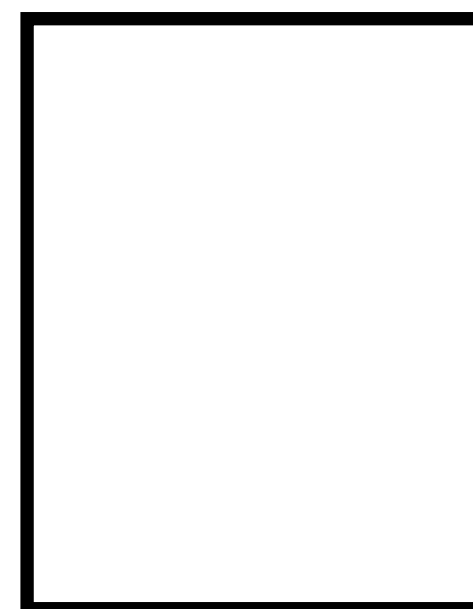
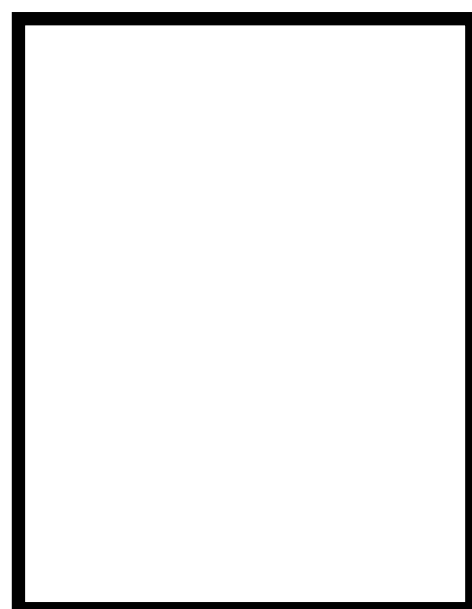
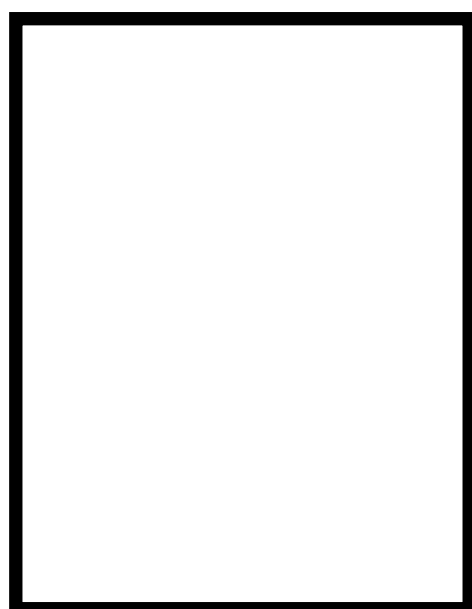
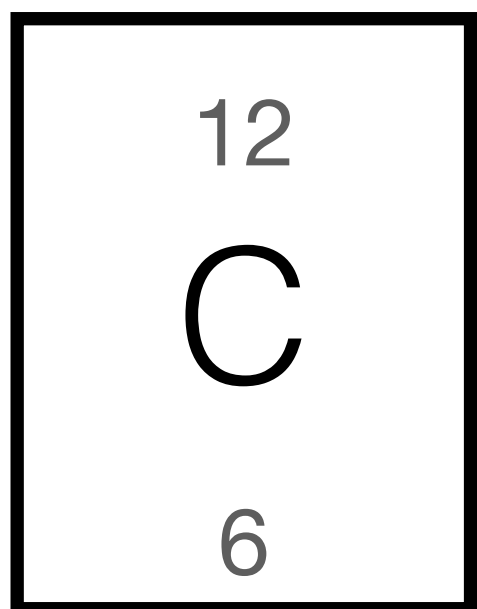
- 2nd shell holds up to 8 electrons



- 3rd shell holds up to 8 electrons



The 3rd shell isn't full in Magnesium



atomic number
number of neutrons

atomic number
number of neutrons

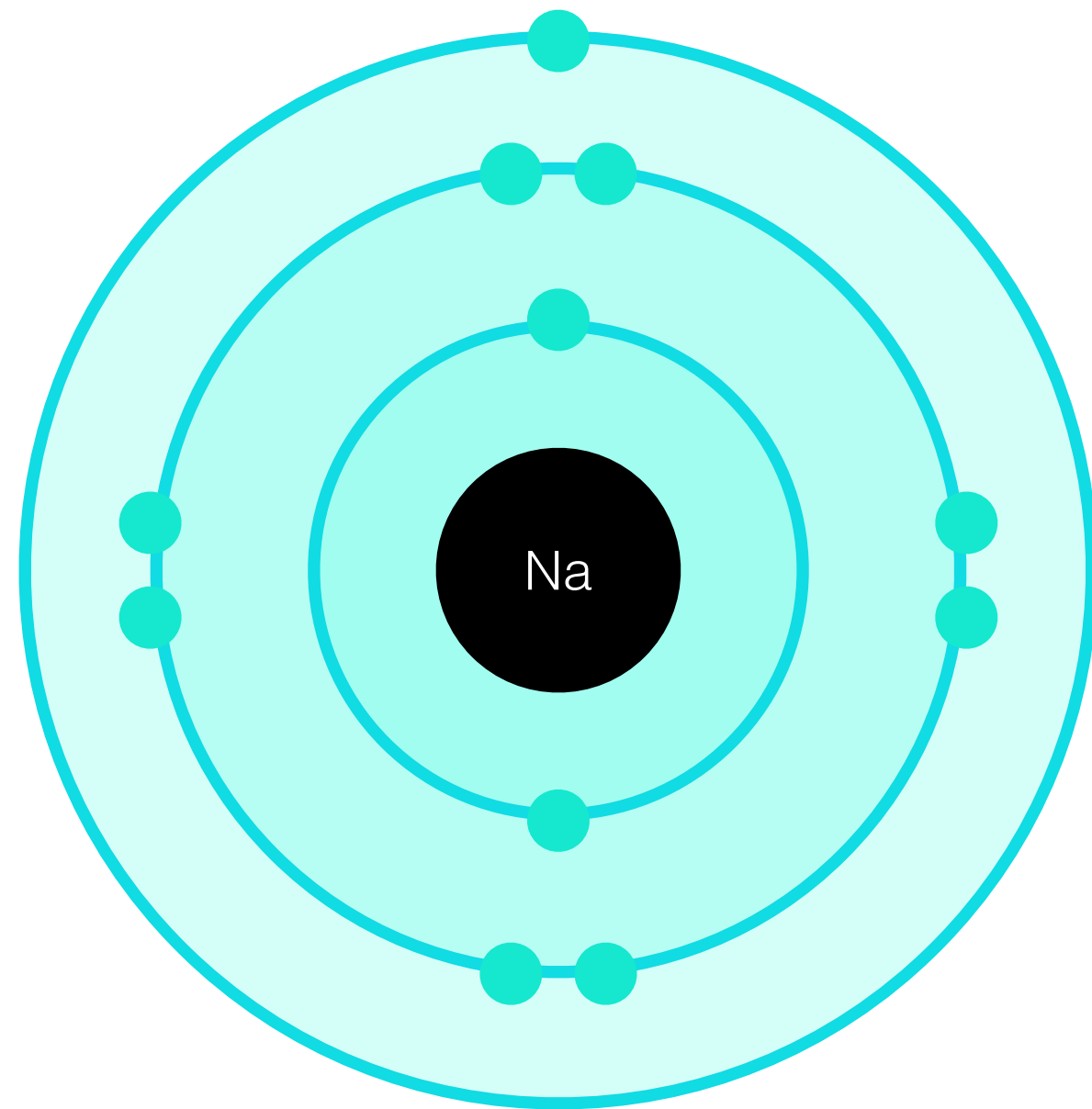
atomic number
number of neutrons

atomic number
number of neutrons

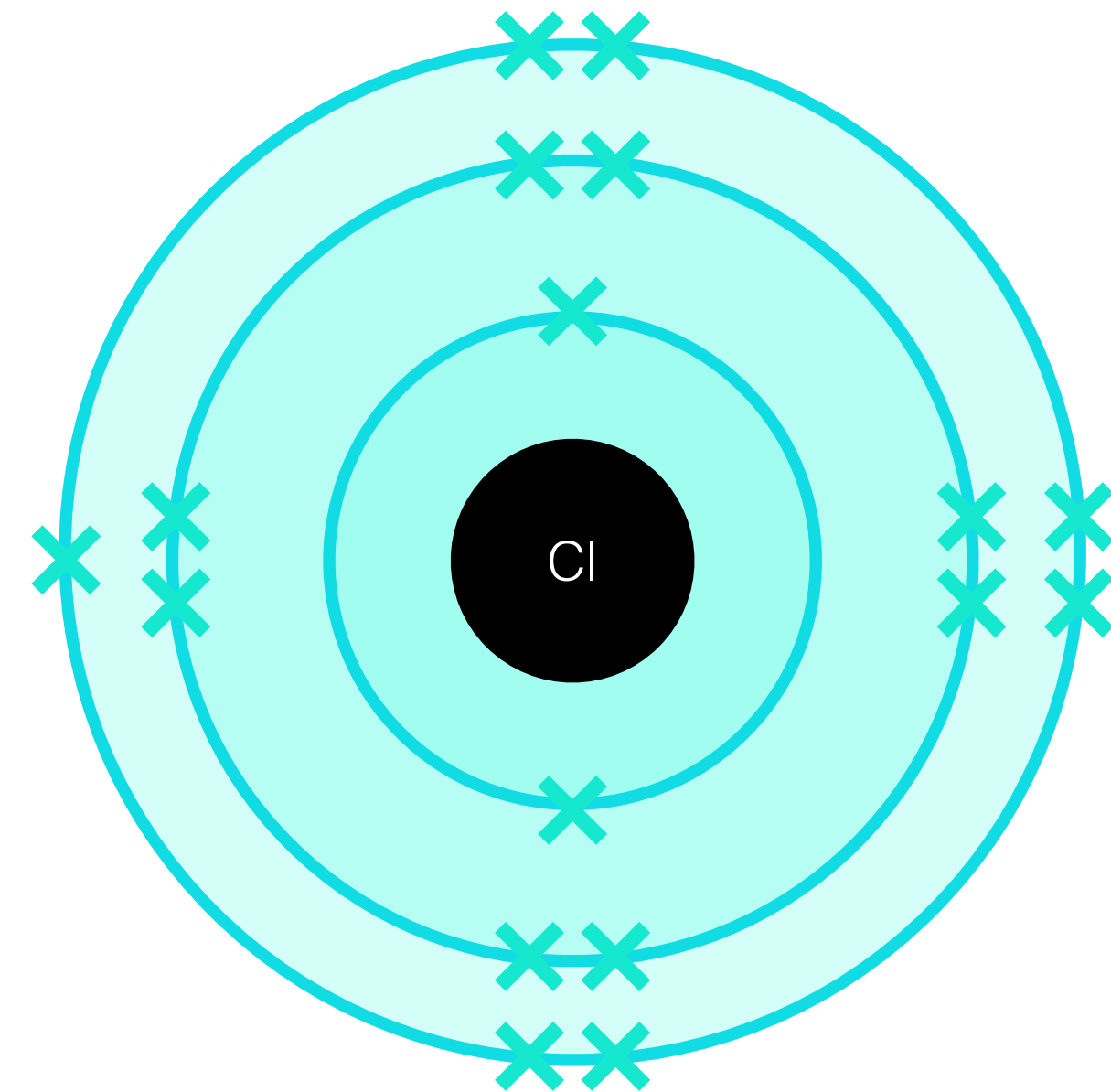
atomic number
number of neutrons

Ionic Bonding

One atom loses its outer shell 'valence' electrons becoming positively charged. Its new outer shell is now full.

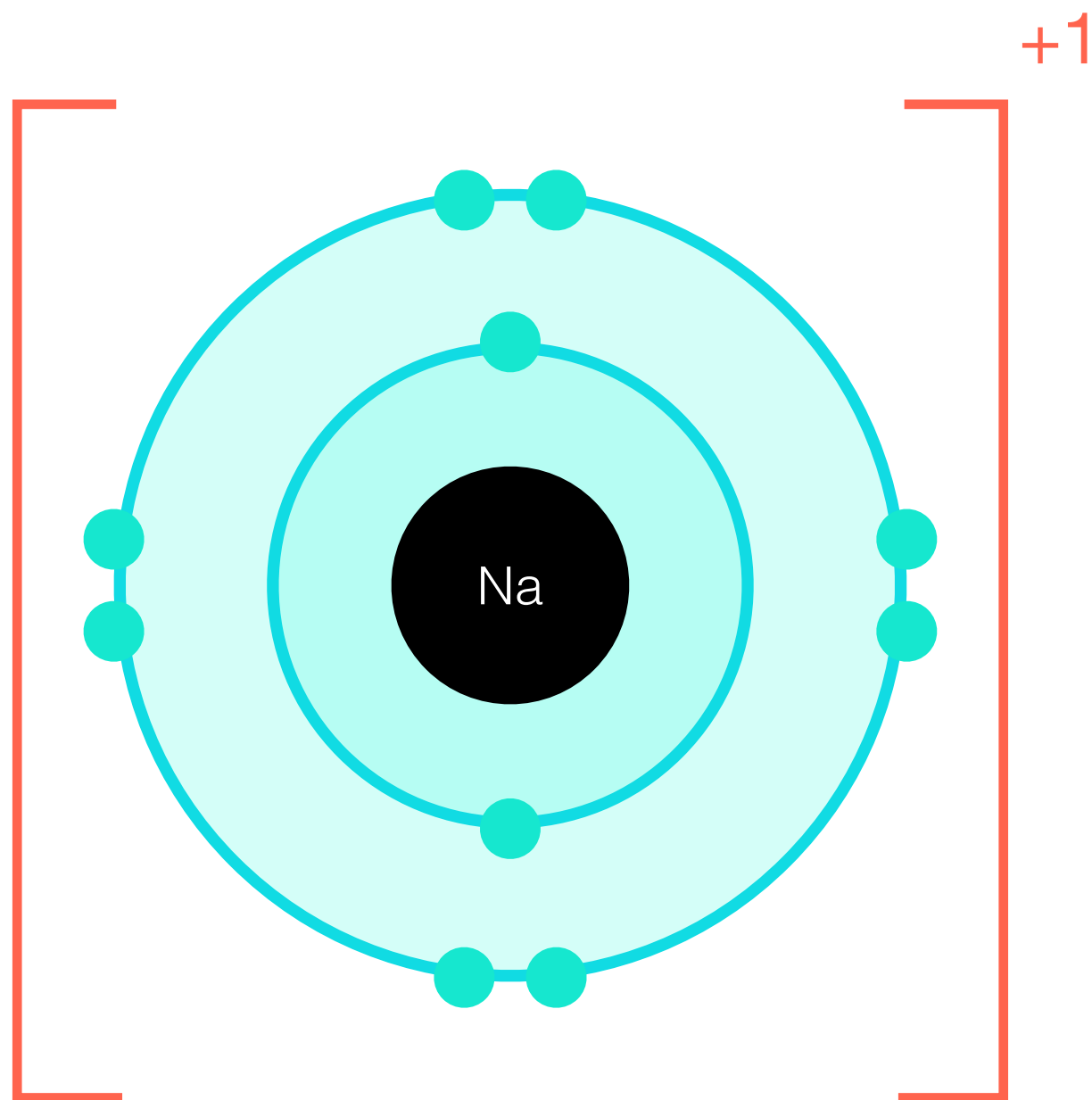


Another atom adds those electrons to its outer 'valence' shell becoming negatively charged and filling its outer shell.

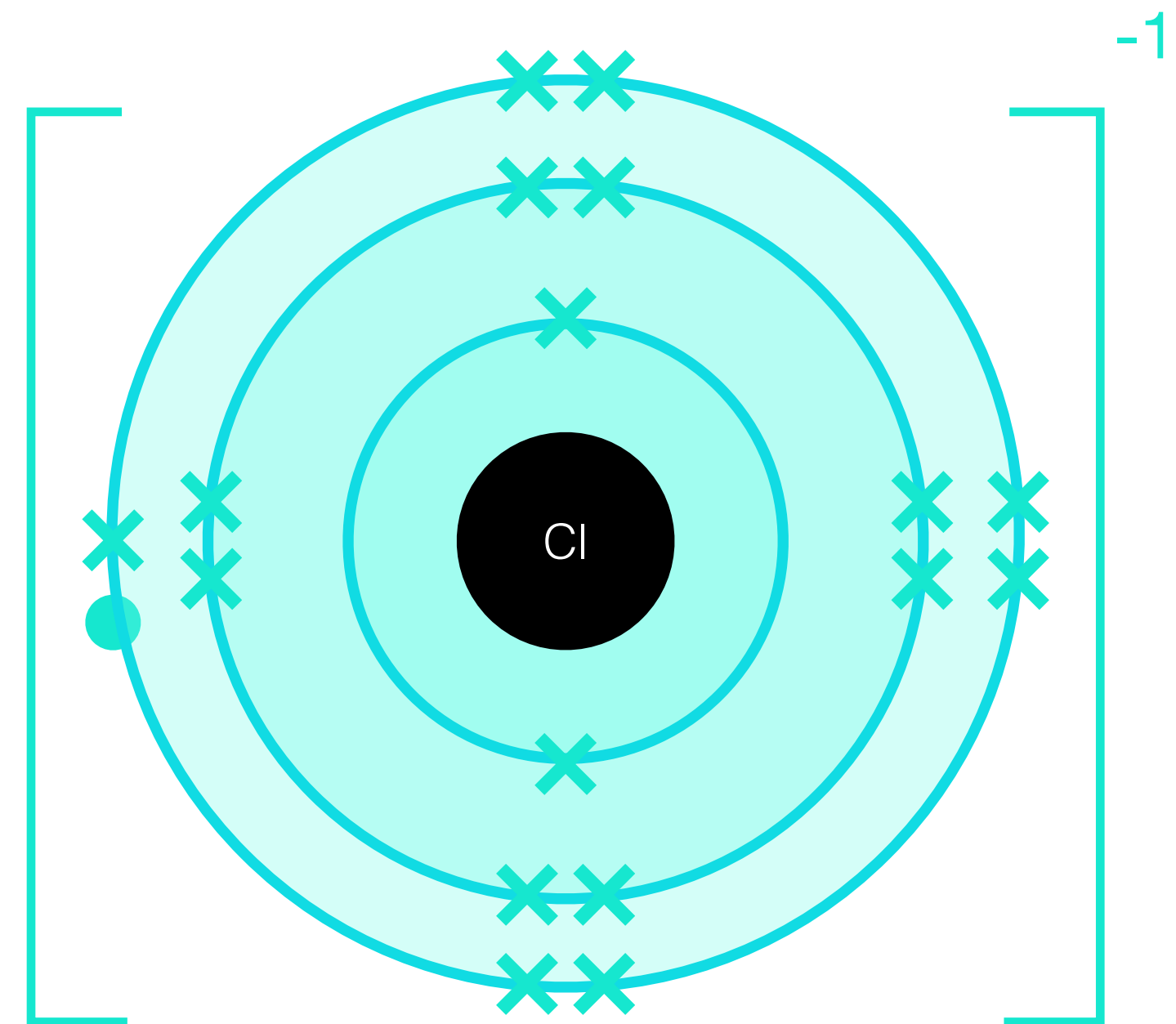


Ionic Bonding

A Sodium +1 ion

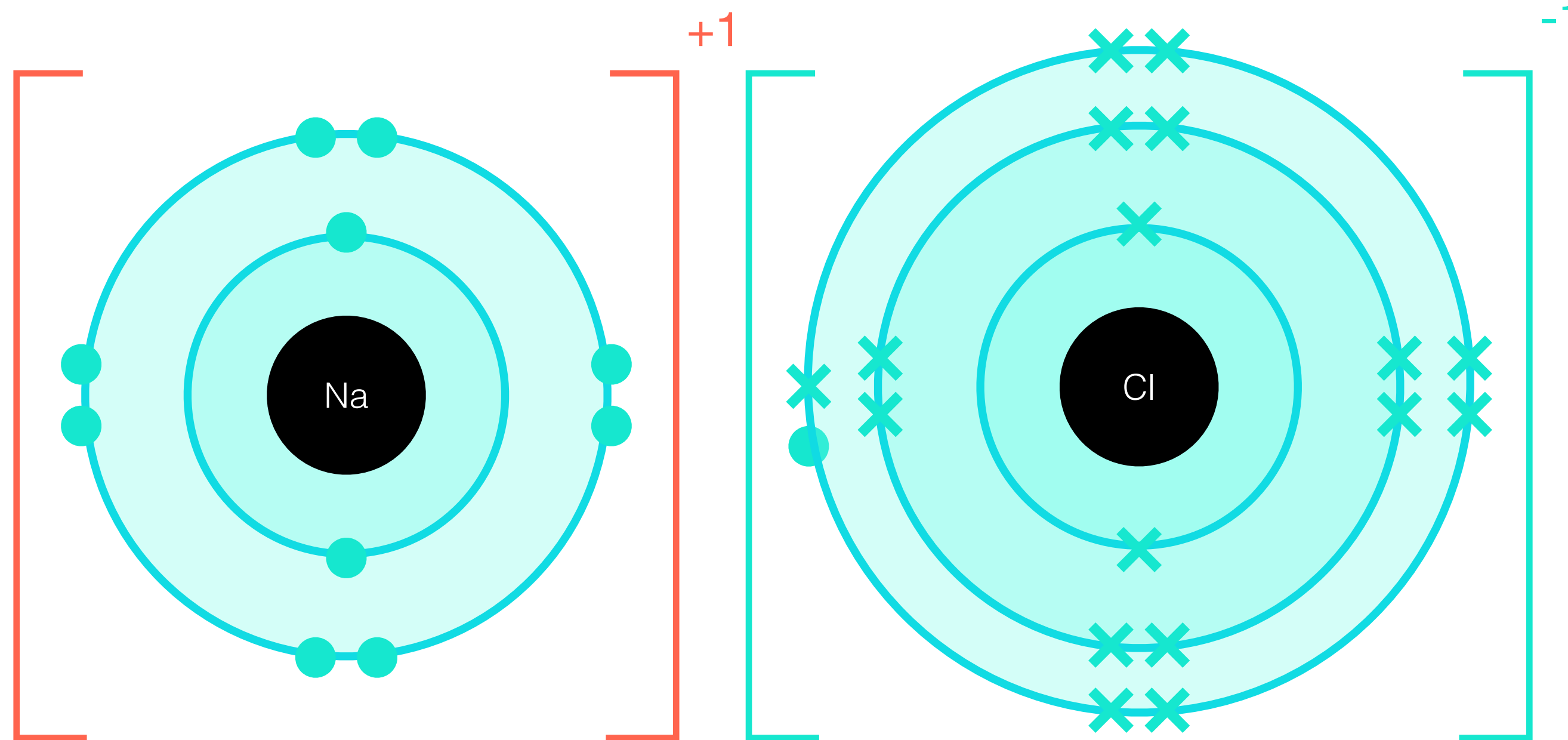


A Chloride -1 ion



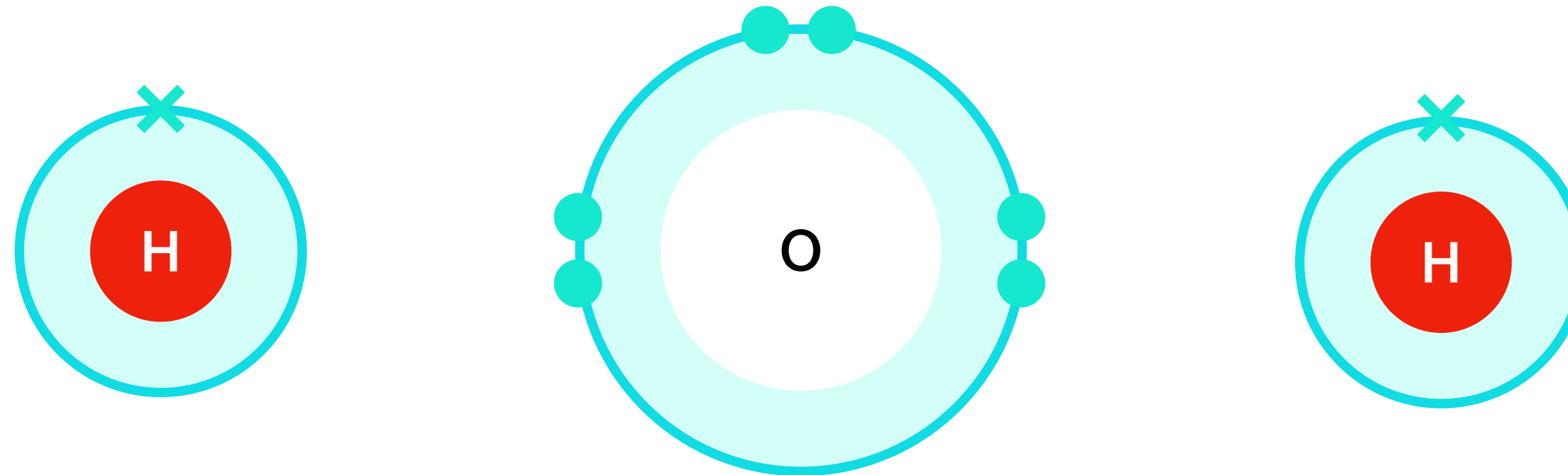
Ionic Bonding

These ions now bond together by electrostatic attraction.

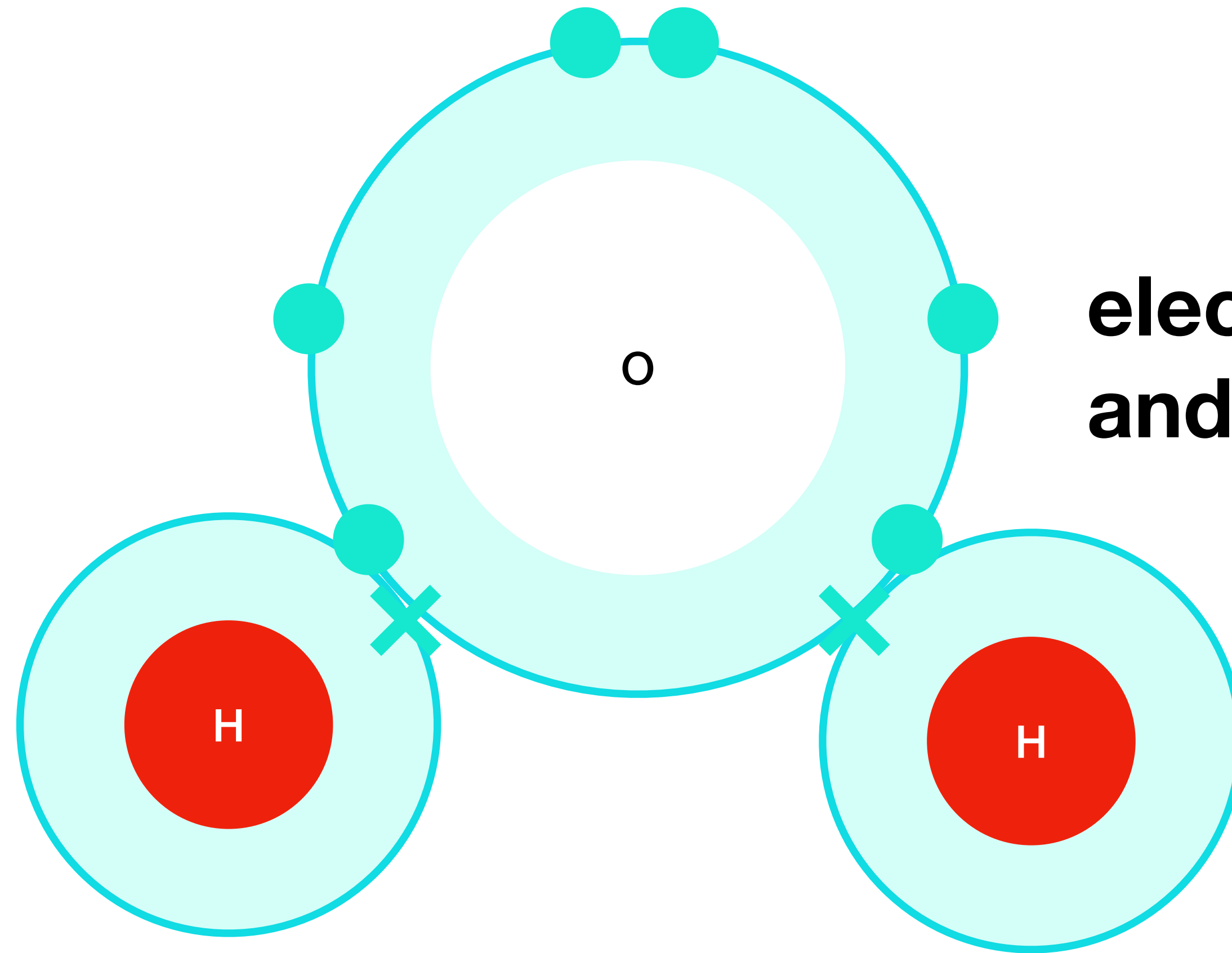


Covalent Bonding

Atoms establish a bond by sharing electrons

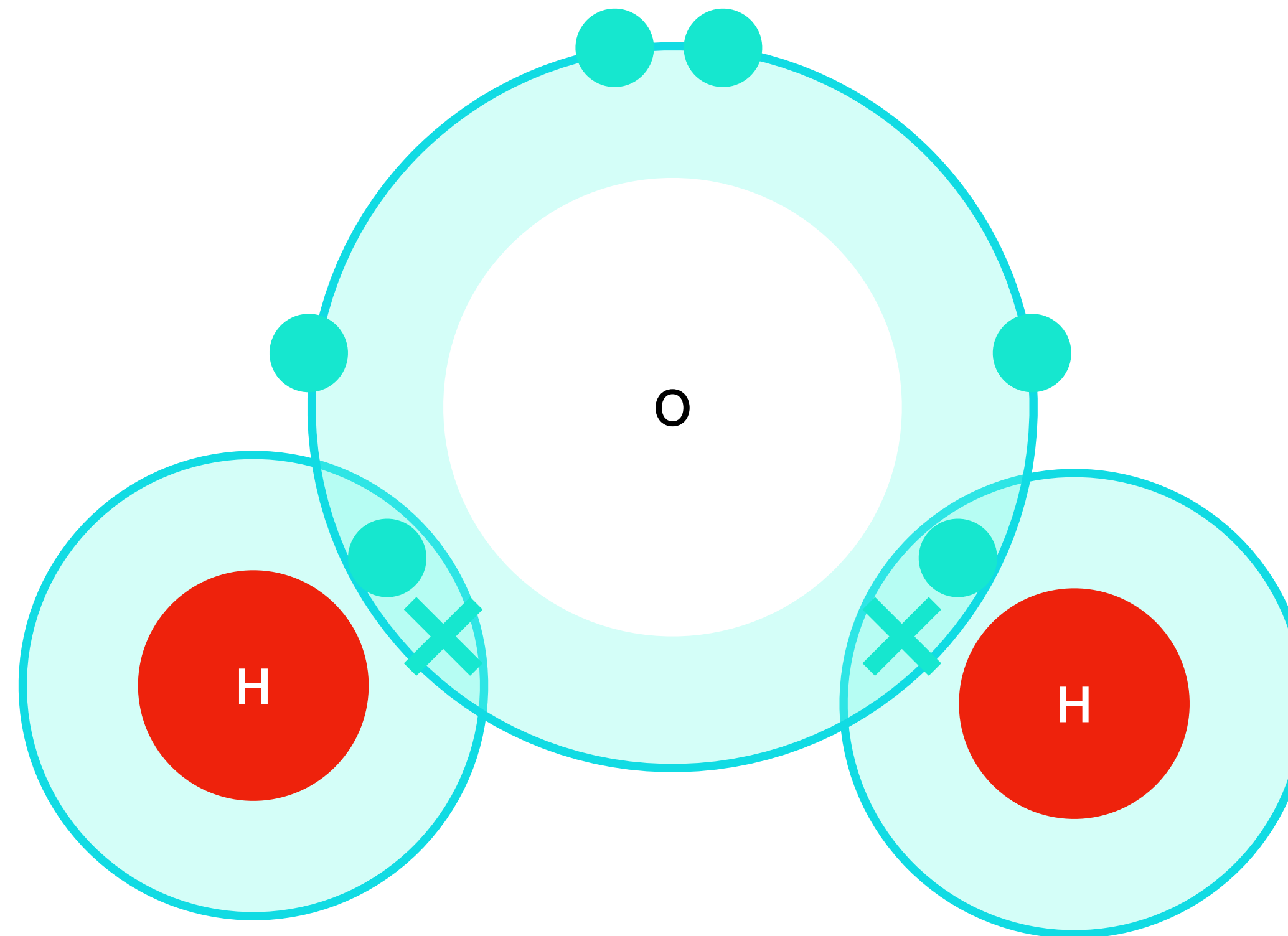


Covalent Bonding



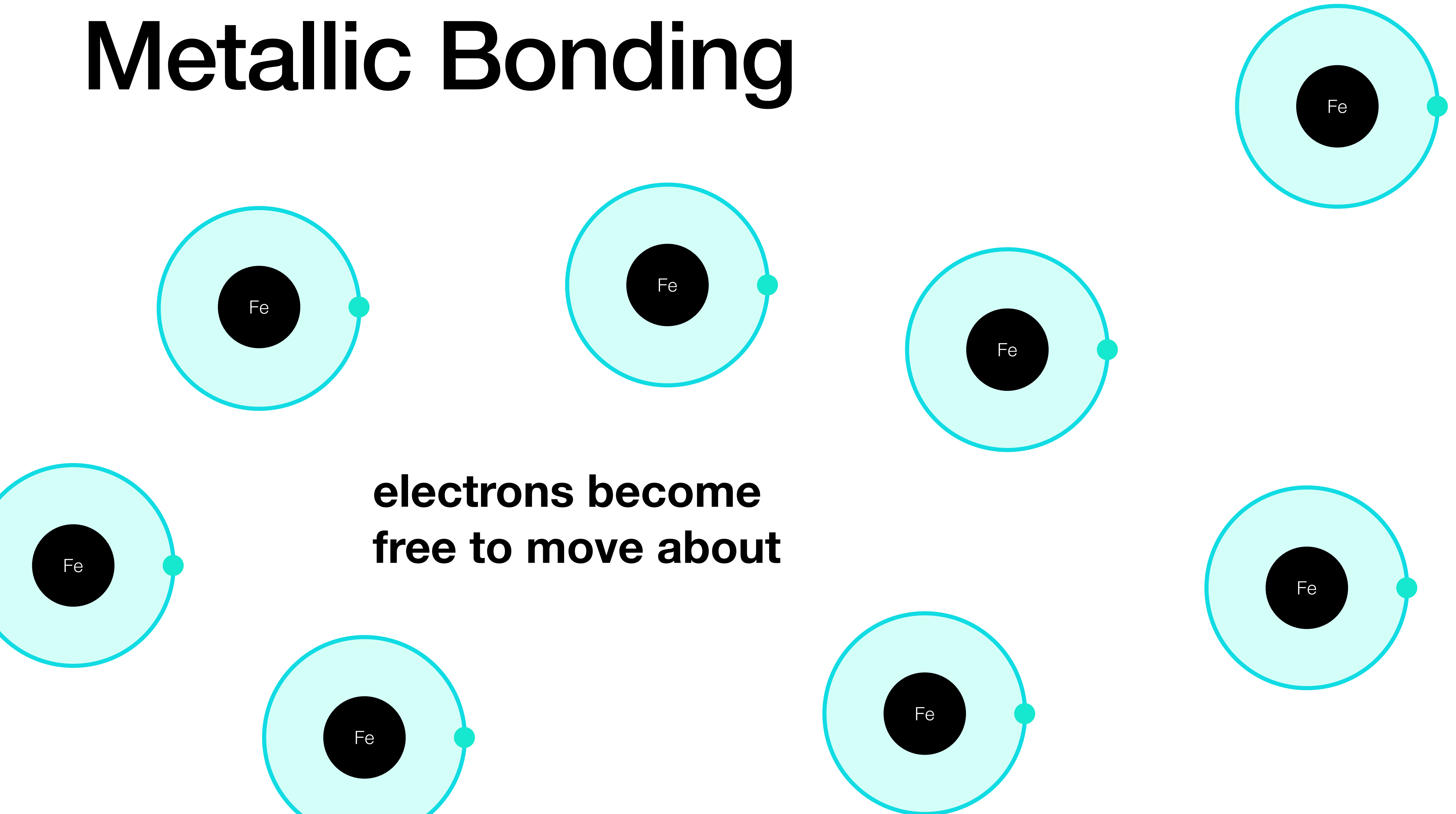
**electrons pair together
and orbit both nuclei**

Covalent Bonding

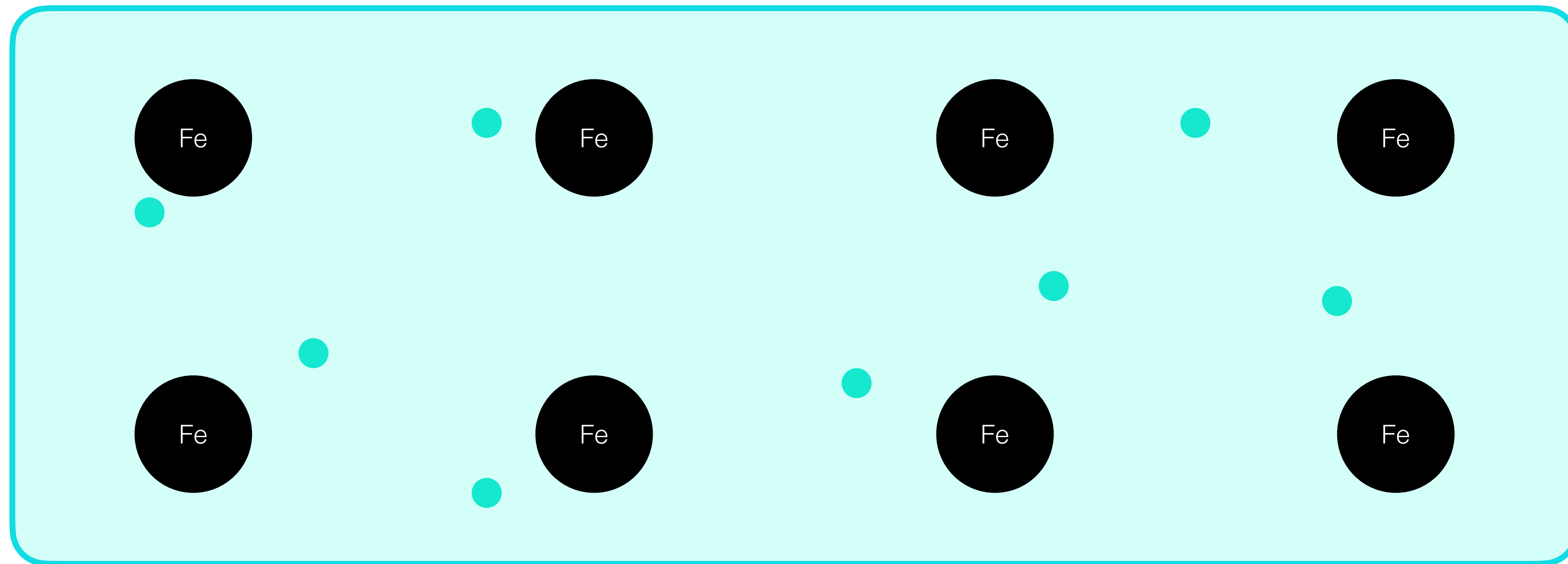


**each pair forms a
covalent bond**

Metallic Bonding



Metallic Bonding



the positive ions are kept in place by the 'sea' of delocalised electrons.