

# Chemical Bonds

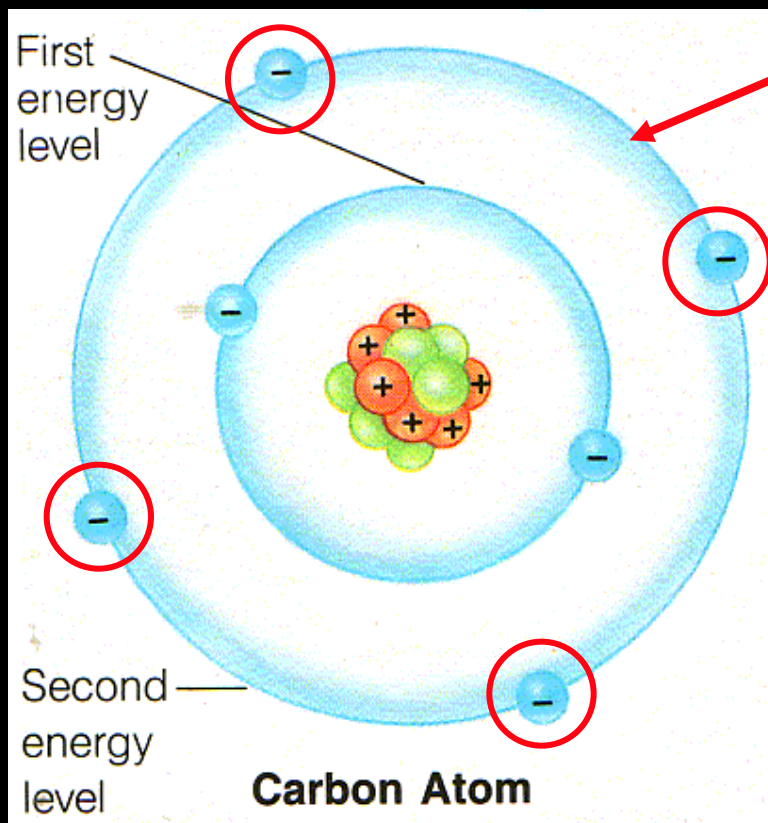


# Learning Objectives

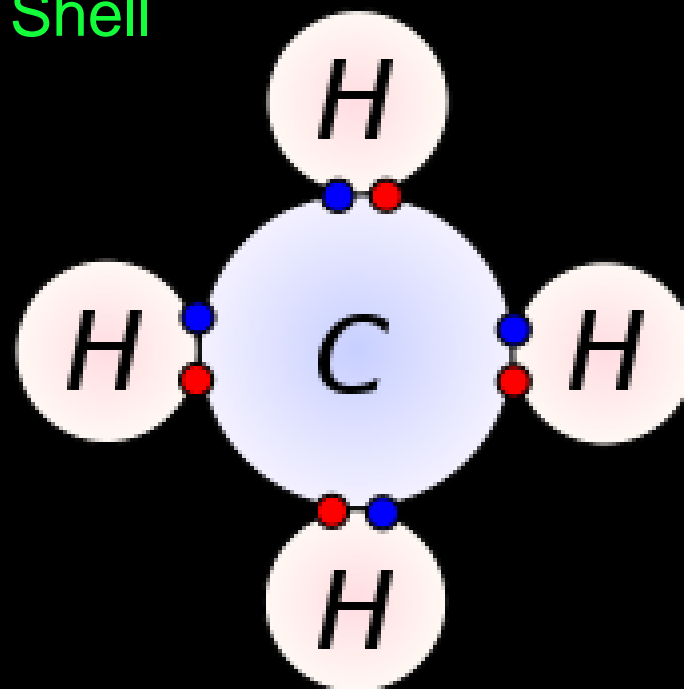
- Explain what a chemical bond is.
- Describe the major types of chemical bonds.

# Review:

# Valence Electron



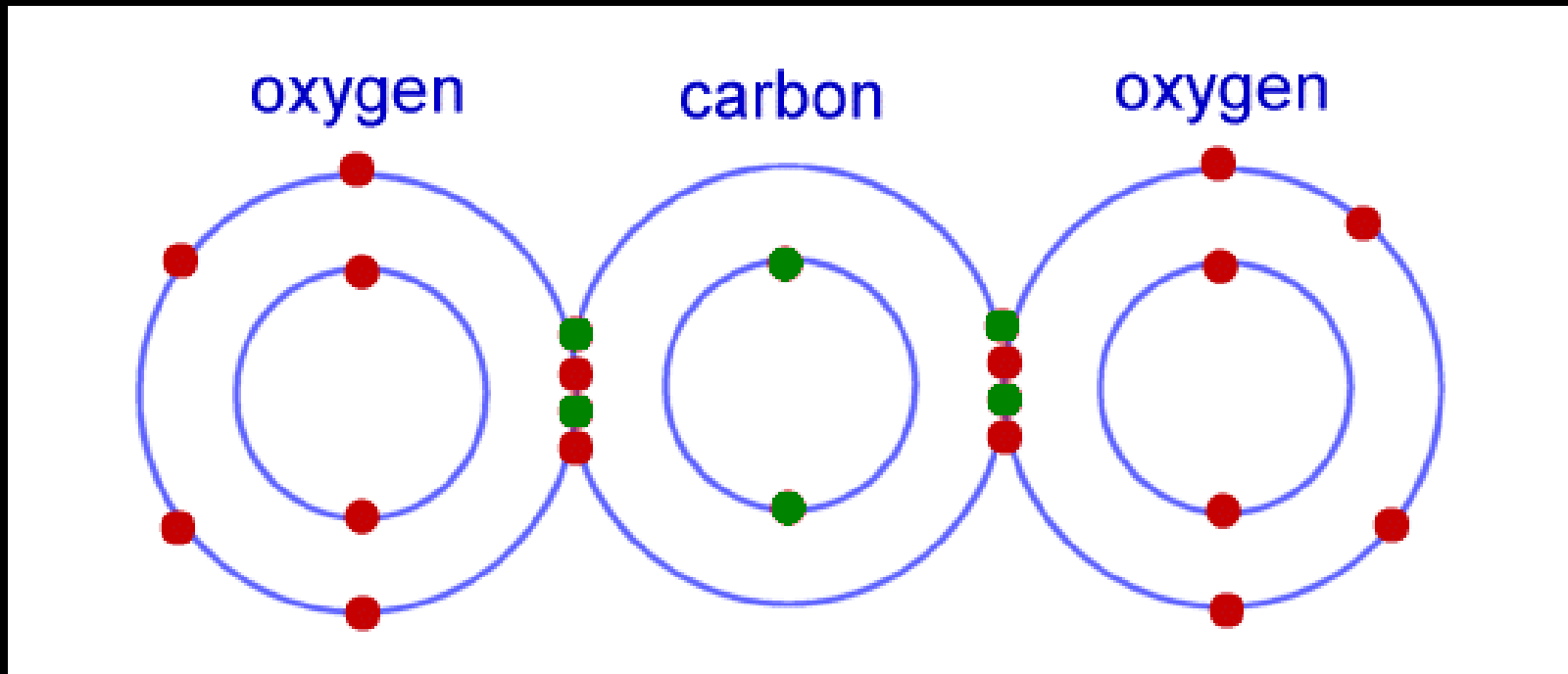
Outer Shell



- Electron from hydrogen
- Electron from carbon

**Valence Electron** - an electron that can participate in the formation of a chemical bond.

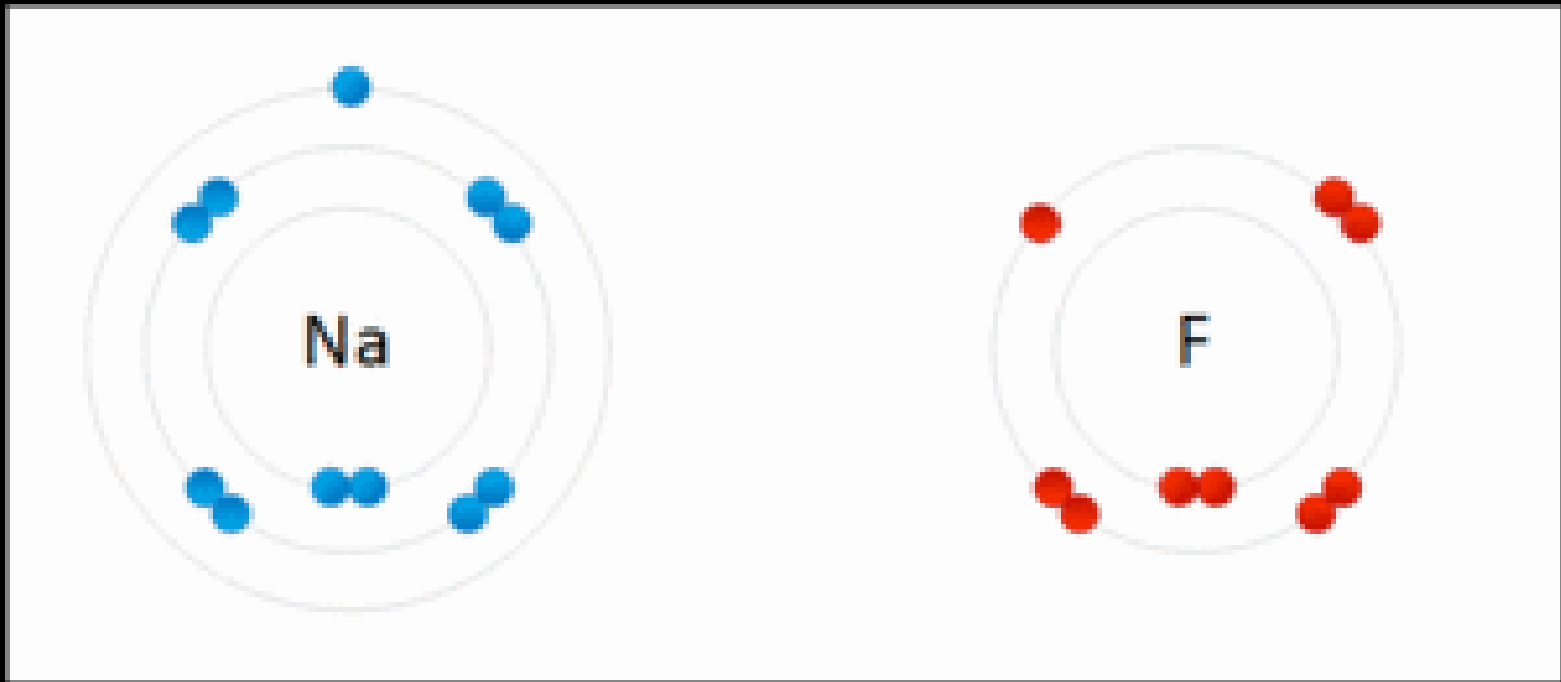
# Chemical Bonds



**Chemical Bond** - the attraction, sharing, or transfer of outer shell electrons from one atom to another.

# Types of Chemical Bonds

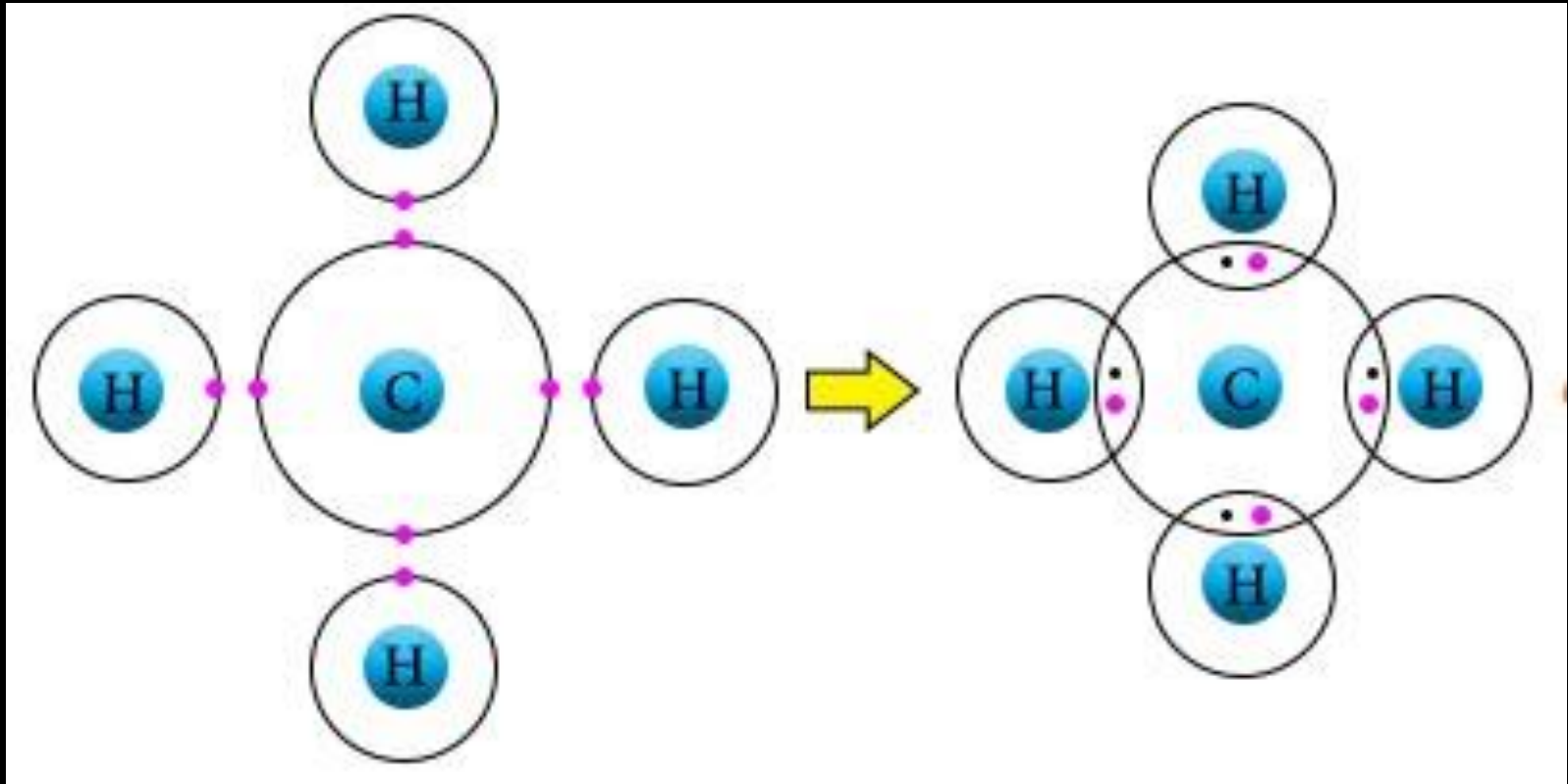
## Ionic Bond



**Ionic Bond** - the transfer of valence electrons between atoms. Generates two oppositely charged ions.

# Types of Chemical Bonds

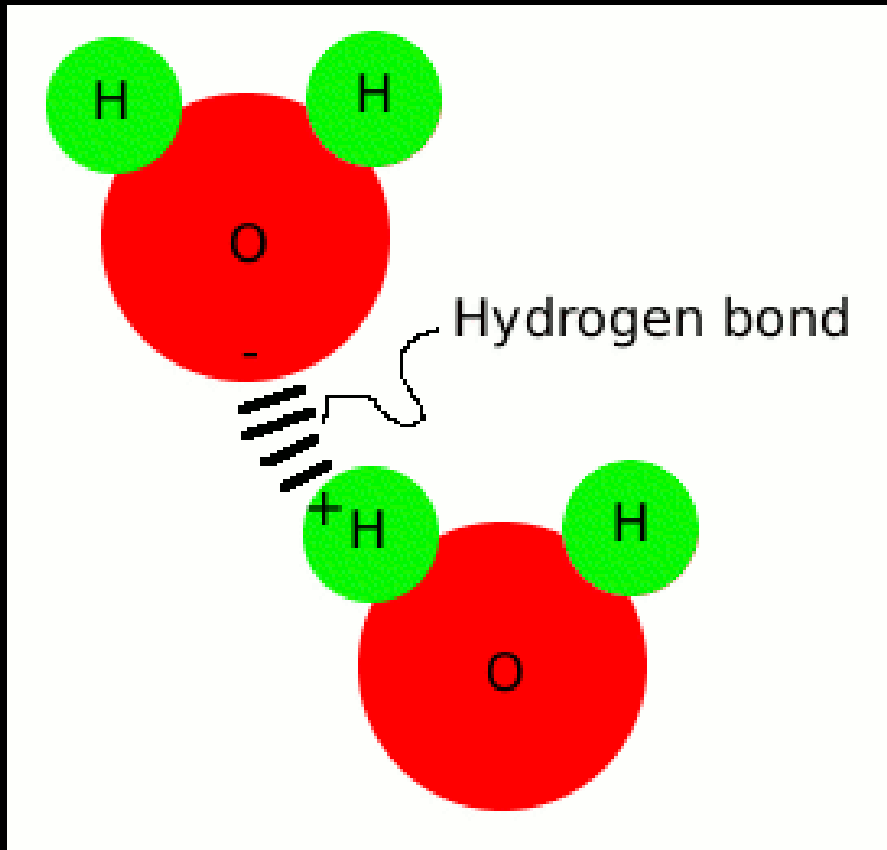
## Covalent Bond



**Covalent Bond** - pairs of electrons are shared by atoms.

# Types of Chemical Bonds

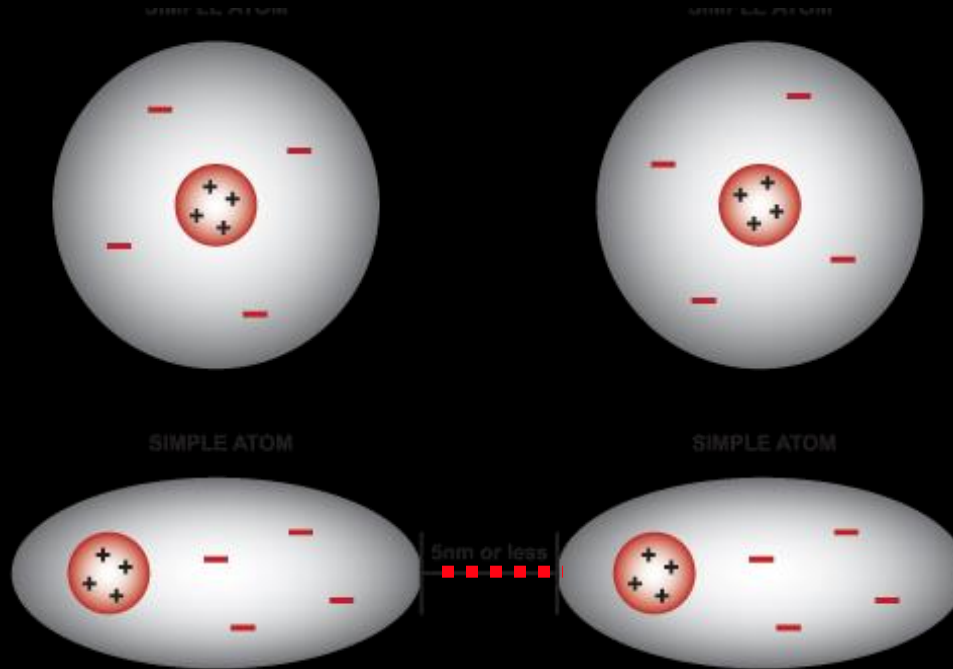
## Hydrogen Bond



**Hydrogen Bond** - a weak attraction occurring between a slightly positive hydrogen atom in a molecule and a nearby slightly negative atom of another molecule.

# Types of Chemical Bonds

## Van der waals Forces



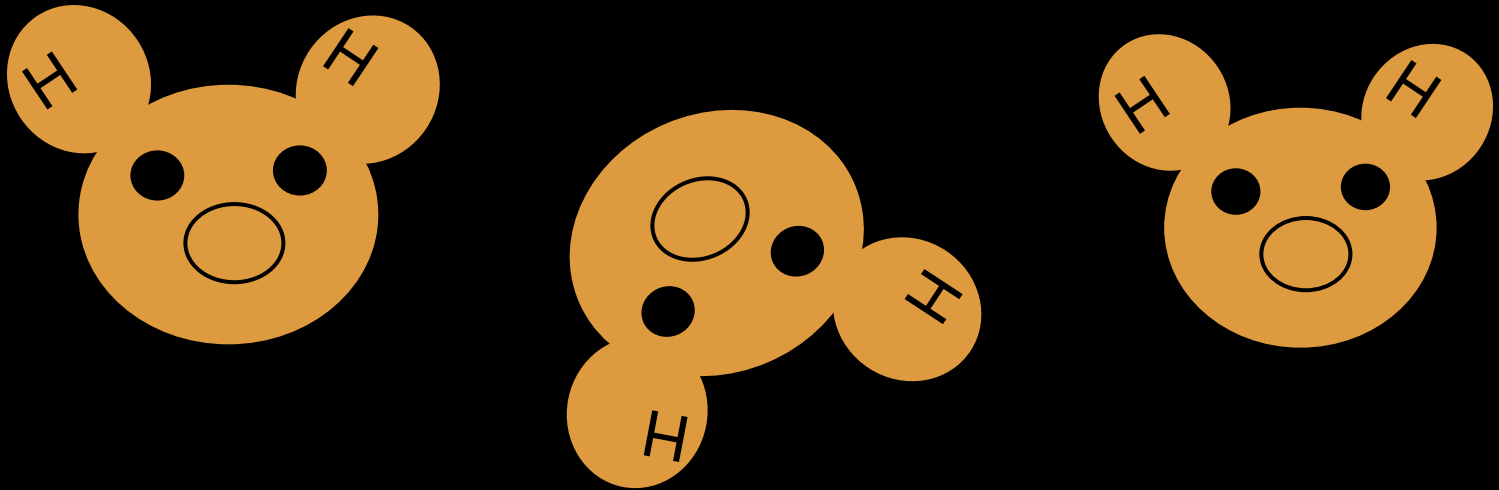
**Van der waals forces** - a weak attraction occurring between oppositely charged regions of nearby molecules.



The End



Draw three water molecules. Draw dotted lines showing where the hydrogen bonding occurs.



Label the positive and negative charges on the water molecules.

# Review:

## Chemical Compound



**Chemical Compound** - a substance formed by the chemical combination of two or more elements in definite proportions.