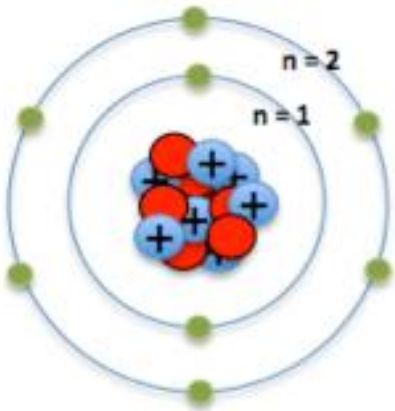


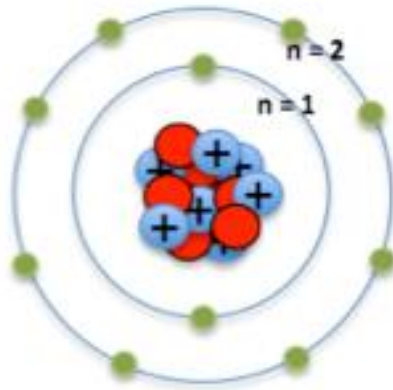
Atoms and Bonding Vocabulary

1. Valence electron

The electrons that are in the highest energy level of an atom and that are involved in chemical bonding.



Oxygen = 8 electrons
6 valence electrons



Neon = 10 electrons
8 valence electrons

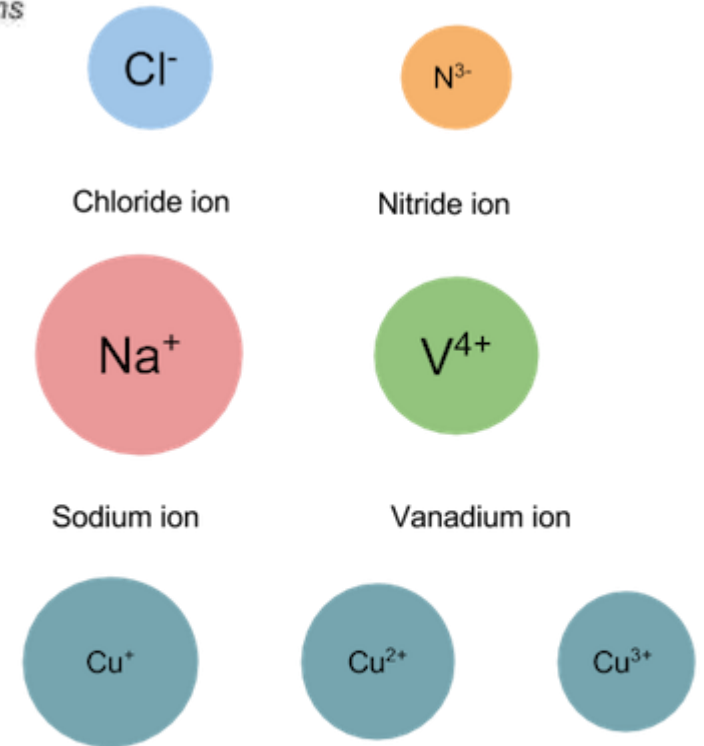
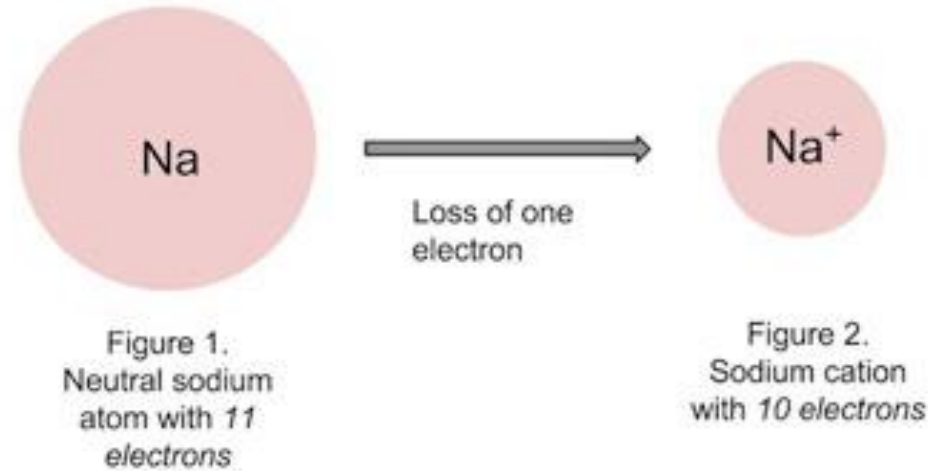
Valence Electrons of Oxygen and Neon

Valence Electrons in Each Group

1																		2
1	2											3	4	5	6	7	8	
1	2											3	4	5	6	7	8	
1	2											3	4	5	6	7	8	
1	2											3	4	5	6	7	8	
1	2											3	4	5	6	7	8	
1	2											3	4	5	6			

2. Ion

An atom or group of atoms that has an electric charge.



Copper 1+ ion, copper 2+ ion and copper 3+ ion.

3. Polyatomic ion

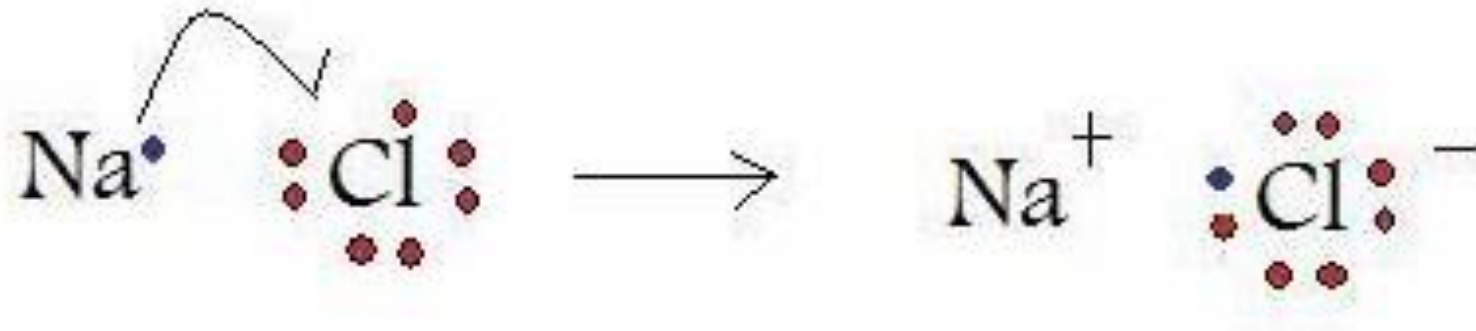
An ion that is made of more than one atom.

Polyatomic Ions

Polyatomic Ion	Formula	Ionic Formula	Charge
Ammonium	NH ₄	[NH ₄] ⁺	1+
Hydroxide	OH	[OH] ⁻	1-
Nitrate	NO ₃	[NO ₃] ⁻	1-
Sulfate	SO ₄	[SO ₄] ²⁻	2-
Carbonate	CO ₃	[CO ₃] ²⁻	2-
Phosphate	PO ₄	[PO ₄] ³⁻	3-

4. Ionic bond

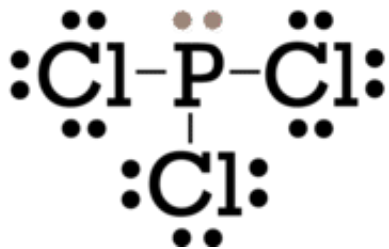
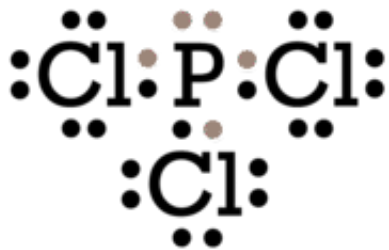
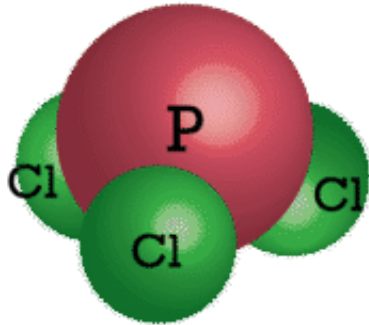
The attraction between oppositely charged ions.



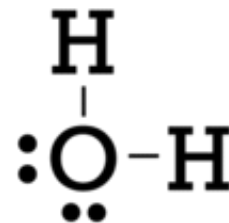
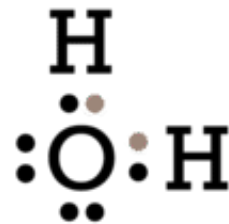
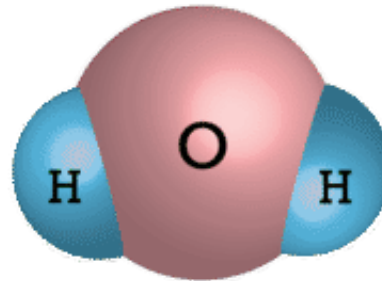
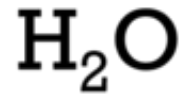
5. Covalent bond

A chemical bond formed when two atoms share electrons.

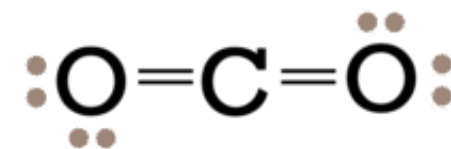
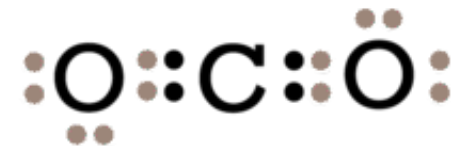
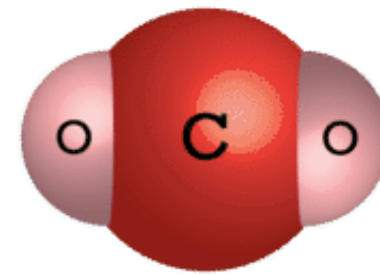
Phosphorus Trichloride



Water



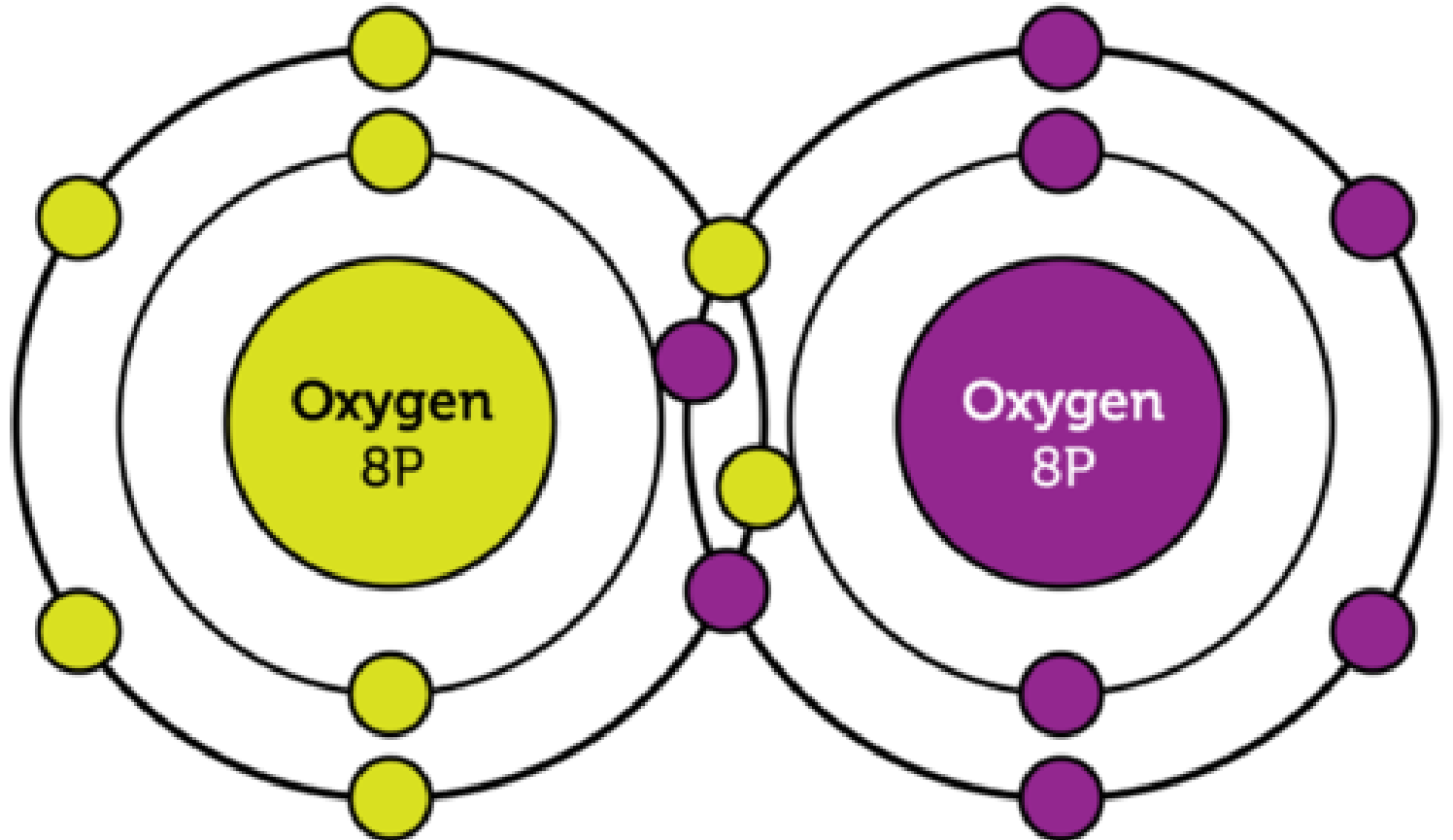
Carbon Dioxide



6. Nonpolar bond

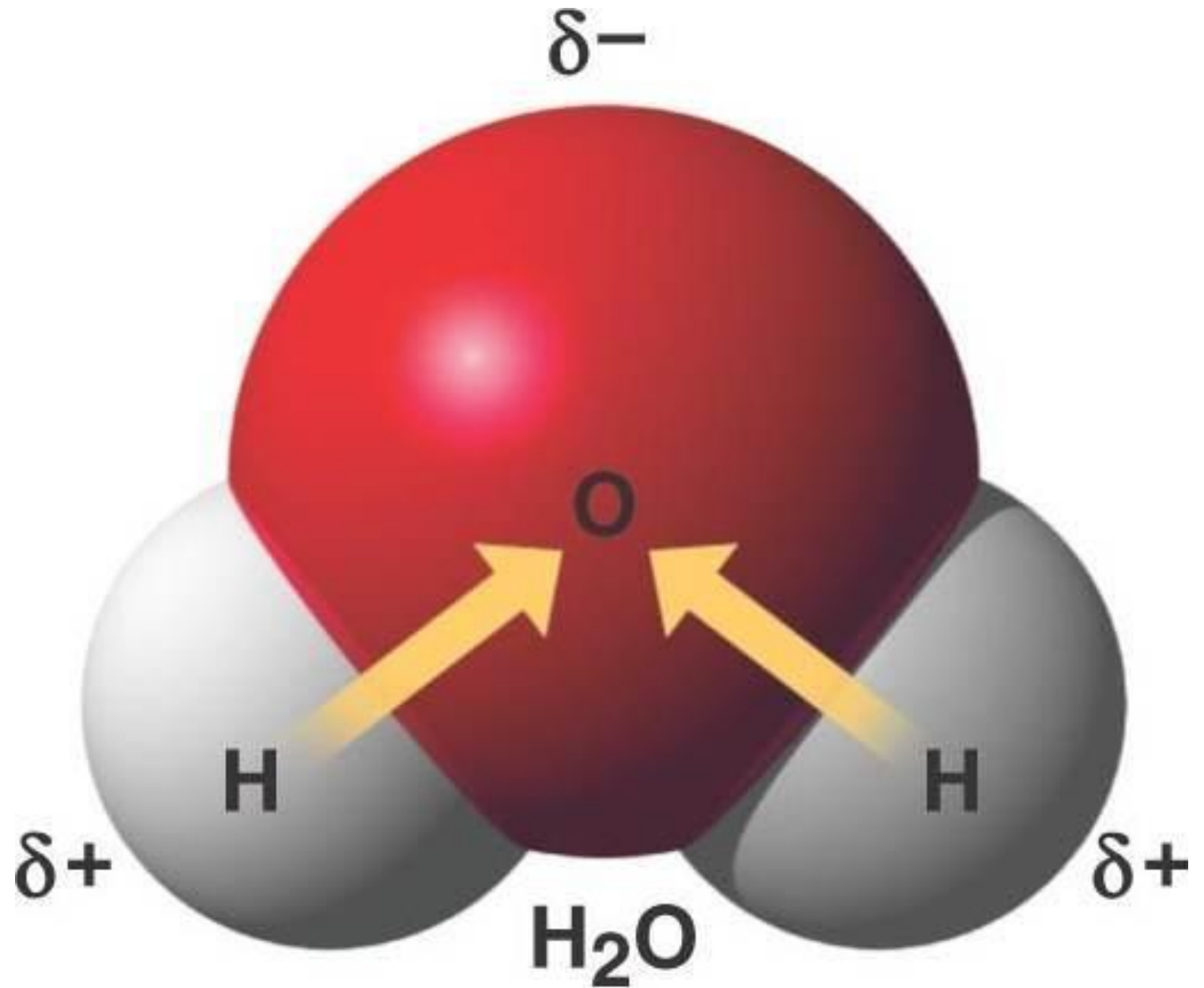
A covalent bond in which electrons are shared equally.

Nonpolar Bonds in an Oxygen Molecule (O_2)



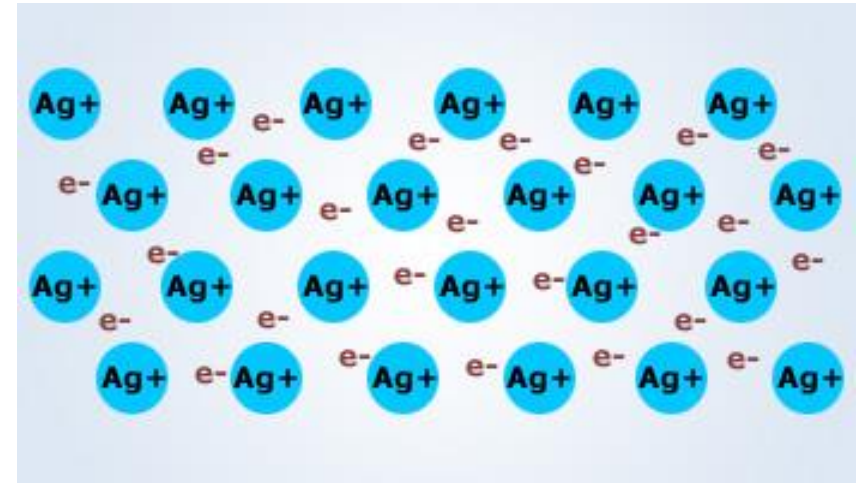
7. Polar bond

A covalent bond in which electrons are shared unequally.



8. Metallic bond

An attraction between a positive metal ion and the electrons surrounding it.



<https://cdn.jmbullion.com/wp-content/uploads/2013/09/1-oz-sunshine-silver-bar.jpg>