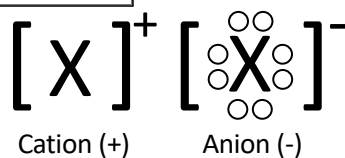


### Ionization and Lewis Dot Structures

1 val e <sup>-</sup>	2 val e <sup>-</sup>	3 val e <sup>-</sup>	4 val e <sup>-</sup>
5 val e <sup>-</sup>	6 val e <sup>-</sup>	7 val e <sup>-</sup>	8 val e <sup>-</sup>

Neutral Atom Lewis Dot Structures *based on valence e<sup>-</sup>*

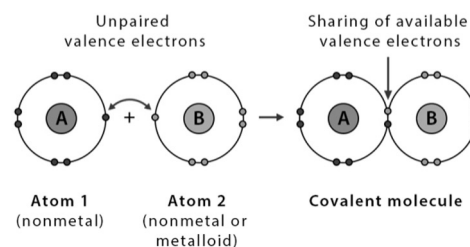


Group Number	Lose/Gain	Group Number	Lose/Gain
1A / 1	Lose 1e <sup>-</sup>	5A / 15	Gain 3e <sup>-</sup>
2A / 2	Lose 2e <sup>-</sup>	6A / 16	Gain 2e <sup>-</sup>
3A / 13	Lose 3e <sup>-</sup>	7A / 17	Gain 1e <sup>-</sup>
4A / 14	Lose 4e <sup>-</sup>	8A / 18	No Ions

2

### Single Covalent w/ Lewis Dot Structures

#### Covalent Bond



A single covalent bond where a single electron from two different atoms are shared to make bond between the two atoms in the molecule

3

### Diatomic Elements

#### The Diatomic Elements

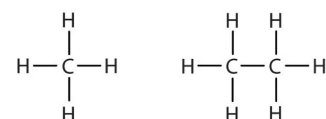
H<sub>2</sub> .....> Hydrogen  
N<sub>2</sub> .....> Nitrogen  
F<sub>2</sub> .....> Fluorine  
O<sub>2</sub> .....> Oxygen  
I<sub>2</sub> .....> Iodine  
Cl<sub>2</sub> .....> Chlorine  
Br<sub>2</sub> .....> Bromine

Have  
No  
Fear  
Of  
Ice  
Cold  
Beer

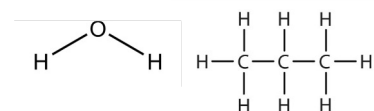
A diatomic element is an element that always bonds to another of the same atom. H<sub>2</sub>, F<sub>2</sub>, I<sub>2</sub>, Cl<sub>2</sub>, and Br<sub>2</sub> all bond together with a single bond

4

### Structural Formulas



Ethane



Propane

A structural formula replaces shared electron bonds in a covalent molecule with a line representing a covalent bond (*all single in this example*)

5