

Indicate the number of valence electrons for the following elements:

Carbon 4	Hydrogen	Fluorine	Boron	Nitrogen	Oxygen
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Draw the Lewis Dot structures for the following elements:

Carbon C	Hydrogen	Fluorine	Boron	Nitrogen	Oxygen
Chlorine	Phosphorus	Silicon	Bromine	Sulfur	Iodine

Draw the Lewis Dot structures (2D and 3D) for the following molecules:

I ₂		CH ₄	
HF		H ₂ O	

Draw the Lewis Dot structures (2D and 3D) for the following molecules:

C_2H_6		C_2H_4	
O_2		N_2	
$HClO$		$HClO_2$	
CH_2O		CH_3OCH_3	

Draw the Lewis Dot structures (2D and 3D) for the following polyatomic ions:

Phosphate Ion		Ammonium Ion	
Nitrate ion		Sulfate Ion	

Define Resonance:

Draw the Lewis Dot resonant structures for the following:
 CO_3^{2-}

$\text{C}_6\text{H}_5\text{OH}$
(the 6 carbons form a ring)

Draw the Lewis Dot structures. Use the VSEPR Theory to determine the shapes and bond angles for the following molecules:

CO ₂ Shape: _____ Bond Angle _____	CCl ₄ Shape: _____ Bond Angle _____
NH ₃ Shape: _____ Bond Angle _____	BF ₃ (Boron Violates Octet) Shape: _____ Bond Angle _____
HClO (Cl at Center) Shape: _____ Bond Angle _____	H ₂ O Shape: _____ Bond Angle _____
CO ₃ ²⁻ Shape: _____ Bond Angle _____	CH ₃ OCH ₃ Shape: _____ Bond Angle _____