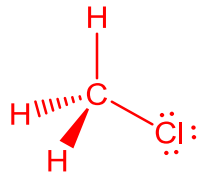
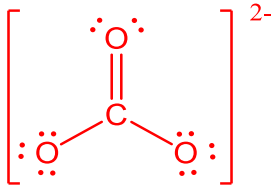
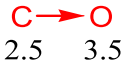
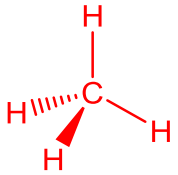
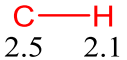
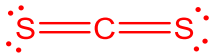
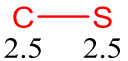
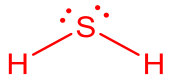
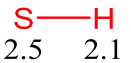
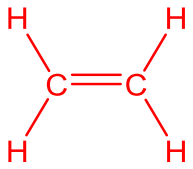
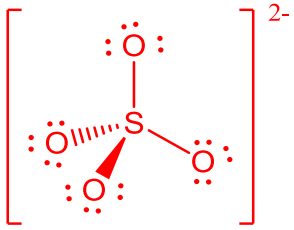
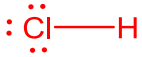
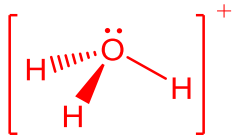
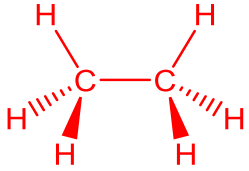
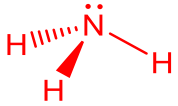
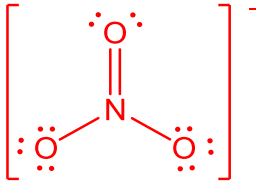
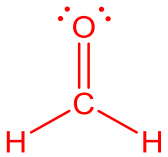
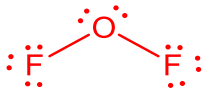
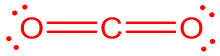
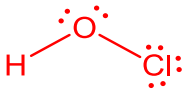
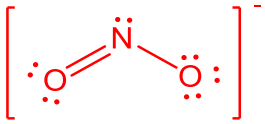
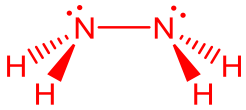
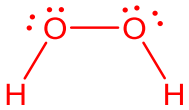
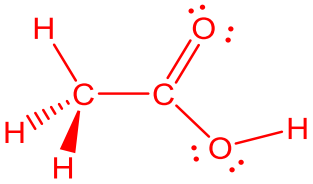
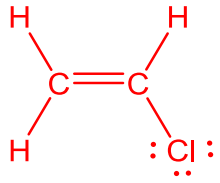
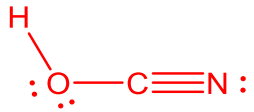
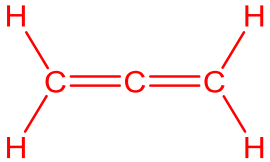
Molecule or Polyatomic	Lewis Dot Structure (LDS)	Valence e⁻	Number of Lone Pair	Bond Polarity	Molecular Polarity
CH_3Cl		**14**	**0**	**C—H** |2.5-2.1| = 0.4 **np** **C—Cl** |2.5-3.0| = 0.5 **p** calculate the absolute difference	**yes, it is polar** Hint: there is no symmetry on the LDS
CO_3^{2-}		**24**	**0**		**none**
CH_4		**8**	**0**		**none**
CS_2		**16**	**0**		**none**
H_2S		**8**	**2**		**yes** all bent molecules are polar

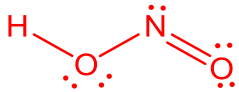
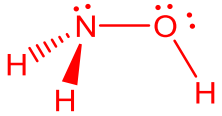
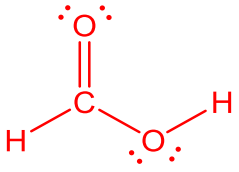
Molecule or Polyatomic	Lewis Structure	Valence e$^-$	Number of Lone Pair	Bond Polarity	Molecular Polarity
C_2H_4		**12**	**0**	C—C 2.5 2.5 C—H 2.5 2.1	**none**
SO_4^{2-}		**32**	**0**	S→O 2.5 3.5	**none**
HCl		**8**	**N/A**	H→Cl 2.1 3.0	**yes**
H_3O^+		**8**	**1**	H→O 2.1 3.5	**yes**
C_2H_6		**14**	**0**	C—C 2.5 2.5 C—H 2.5 2.1	**none**

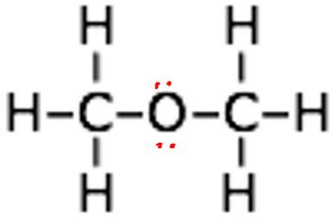
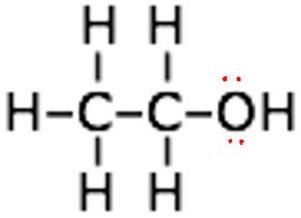
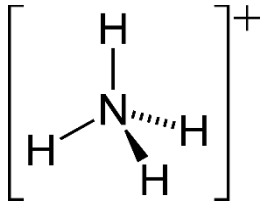
Molecule or Polyatomic	Lewis Structure	Valence e^-	Number of Lone Pair	Bond Polarity	Molecular Polarity
NH_3		**8**	**1**	H→N 2.1 3.0	**yes**
C_2H_2		**10**	**0**	C—C 2.5 2.5 C—H 2.5 2.1	**none**
NO_3^-		**24**	**0**	N→O 2.5 3.5	**none**
SO_3^{2-}		**26**	**1**	S→O 2.5 3.5	**yes**
CH_2O		**12**	**0**	C—H 2.5 2.1 C→O 2.5 3.5	**yes**

Molecule or Polyatomic	Lewis Structure	Valence e^- allowed	Number of Lone Pair	Bond Polarity	Molecular Polarity
OF_2		**20**	**2**	O→F 3.5 4.0	**yes**
CO_2		**16**	**0**	C→O 2.5 3.5	**none**
HOCl		**14**	**2**	H→O 2.1 3.5 Cl→O 3.0 3.5	**yes**
NO_2^-		**18**	**1**	N→O 2.5 3.5	**yes**
N_2H_4		**14**	**1**	H→N 2.1 3.0	**yes**

Molecule or Polyatomic	Lewis Structure	Valence e⁻ allowed	Number of Lone Pair	Bond Polarity	Molecular Polarity
N_2		**10**	**N/A**	N—N 3.0 3.0	**none**
H_2O_2 Hint: the oxygens are connected		**14**	**2**	H→O 2.1 3.5	**yes**
$CH_3\underline{C}O_2H$		**24**	**C 0** **<u>C</u> 0** **O 2**	C—C 2.5 2.5 C—H 2.5 2.1 C→O 2.5 3.5 H→O 2.1 3.5	**yes**

Molecule or Polyatomic	Lewis Structure	Valence e⁻	Number of Lone Pair	Bond Polarity	Molecular Polarity
C_2H_3Cl		**18**	**0**	C—C 2.5 2.5 C—H 2.5 2.1 C→Cl 2.5 3.0	**yes**
HOCN		**16**	**O 2** **C 0**	C→O 2.5 3.5 H→O 2.1 3.5 C→N 2.5 3.0	**yes**
C_3H_4		**16**	**C 0** **C 0**	C—C 2.5 2.5 C—H 2.5 2.1	**none**

Molecule or Polyatomic	Lewis Structure	Valence e^- allowed	Number of Lone Pair	Bond Polarity	Molecular Polarity
HONO		**18**	**O 2** **N 1**	N→O 2.5 3.5 H→O 2.1 3.5	**yes**
NH_2OH		**14**	**N 1** **O 2**	N→O 2.5 3.5 H→O 2.1 3.5 H→N 2.1 3.0	**yes**
HCO_2H		**18**	**0**	C—H 2.5 2.1 C→O 2.5 3.5 H→O 2.1 3.5	**yes**

Molecule or Polyatomic	Lewis Structure	Valence e^-	Number of Lone Pair	Bond Polarity	Molecular Polarity
C_2H_6O		20	C 0 O 2		yes, Polar, because of the Bent shape due to the lone pair of e
C_2H_6O (Come up with a different structure than above. This is called an isomer)			C O 2		Polar
NH_4^+		8	0		np, but it is soluble in water do to H-bonds