CONCEPT: LEWIS DOT STRUCTURES: MULTIPLE BONDS

● Atoms form _____ bonds when valence electrons are not enough to satisfy octet.

Multiple Bond Formation

- **Valence Electrons:** $10e^-$
- **Incomplete Octet:** each N only has $6\ e^-$

- **Valence Electrons:** $10e^-$
- **Complete Octet:** each N has $8\ e^-$

EXAMPLE: Draw the Lewis Dot Structure for formaldehyde molecule, CH_2O.

STEP 1: Determine the total number of valence electrons of the structure.

□ Recall, Valence Electrons = _____ of the element.

STEP 2: Place the _____ electronegative element in the center and connect all elements with single bonds.

□ Follow Bonding Preferences guide to determine atom connectivity.

STEP 3: Add electrons to all the _____ elements until they have 8 electrons (Octet Rule).

□ **Duet Rule**: Hydrogen only wants _____ electrons around it.

STEP 4: Place any remaining electrons on the central atom.

STEP 5: If any elements don't have 8 octet electrons, add _____ or _____ bonds between them.

CONCEPT: LEWIS DOT STRUCTURES: MULTIPLE BONDS

PRACTICE: Draw the Lewis Dot Structure for CO_2 compound.

PRACTICE: Determine the Lewis Dot Structure for the diazene molecule, N_2H_2.

PRACTICE: Give the Lewis Dot Structure that obeys the octet rule for following compound: NOCl.