


## **Model 2**

### **Information: A Step-by-Step Method for Writing Lewis Structures**

1. Calculate the total number of valence electrons for all atoms in the compound.
2. Determine the central atom in the compound and surround with other atoms. (The central atom is usually the one with the most unpaired electrons. When in doubt use the first element in the formula. When really in doubt, use carbon)
3. Connect atoms with a single bond drawn as a straight line. Each bond represents an electron pair.
4. Subtract bonded electrons from the total number of valence electrons and distribute the remaining electrons evenly around the surrounding atoms.
5. Any electron pairs “left over” (if any) are placed on central atom.
6. If central atom does not have octet rule satisfied, move electron pairs to make double or triple bonds between the central atoms and surrounding atoms

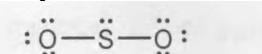
#### **Example: Draw a Lewis structure of SO<sub>2</sub>**

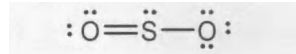
**Step 1:** valence electrons = 1 sulfur (6) + 2 oxygens (12) = **18** valence electrons total.

**Step 2:** 

**Step 3:**  (14 e<sup>-</sup> remain from original 18)

**Step 4:**  (2 e<sup>-</sup> remain)

**Step 5:**  (S does not have octet, so share from either O)

**Step 6:** 

3. Draw Lewis structures for each of the molecules from page 1 (CH<sub>4</sub>; NH<sub>3</sub>; H<sub>2</sub>O, CO<sub>2</sub> & CH<sub>2</sub>O).