

Lewis Structure Worksheet  
Some guided practice examples

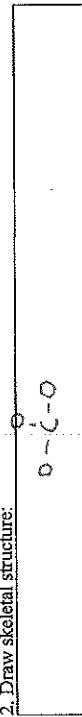
$\text{CO}_3^{2-}$

1. How many valence electrons:

$$\begin{array}{r} \text{O} \times 3 \\ \text{C} \times 1 \\ \text{Charge} \end{array} \begin{array}{r} 2 \\ 1 \\ + 2 \end{array} \begin{array}{r} 18 \\ 4 \\ + 2 \\ = 24 \end{array} \quad (\text{careful about signs})$$

Total number of Valence electrons = 24

2. Draw skeletal structure:



3. Count number of bonding electrons used: 6

4. Total number of Valence electrons number of bonding electrons used number of electrons remaining

$$\begin{array}{r} 24 \\ - 6 \\ = 18 \end{array}$$

5. Place remaining electrons around skeletal structure:



6. CHECK

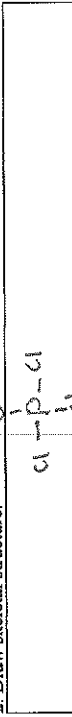
How many valence electrons for C: 4 (1<sup>st</sup>) O: 8 (2<sup>nd</sup>) O: 8 (3<sup>rd</sup>)

1. How many valence electrons:

$$\begin{array}{r} \text{P} \\ \text{O} \times 1 \\ \text{Cl} \times 3 \\ \text{Charge} \end{array} \begin{array}{r} 1 \\ 1 \\ 3 \\ + 0 \end{array} \begin{array}{r} 5 \\ 6 \\ 21 \\ = 32 \end{array} \quad (\text{careful about signs})$$

Total number of Valence electrons = 32

2. Draw skeletal structure:



3. Count number of bonding electrons used: 8

4. Total number of Valence electrons number of bonding electrons used number of electrons remaining

$$\begin{array}{r} 32 \\ - 8 \\ = 24 \end{array}$$

5. Place remaining electrons around skeletal structure:



6. CHECK

How many valence electrons for P: 5  
How many valence electrons for O: 6 (1<sup>st</sup>)  
How many valence electrons for Cl: 7 (1<sup>st</sup>) Cl: 7 (2<sup>nd</sup>)

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$\text{NH}_4^+$

1. How many valence electrons:

$$\begin{array}{r} \text{N} \times 1 \\ \text{H} \times 4 \\ \text{Charge} \end{array} \begin{array}{r} 5 \\ 4 \\ + 1 \end{array} \begin{array}{r} 10 \\ 4 \\ + 1 \\ = 15 \end{array} \quad (\text{careful about signs})$$

Total number of Valence electrons = 15

2. Draw skeletal structure:



3. Count number of bonding electrons used: 8

4. Total number of Valence electrons number of bonding electrons used number of electrons remaining

$$\begin{array}{r} 15 \\ - 8 \\ = 7 \end{array}$$

5. Place remaining electrons around skeletal structure:



6. CHECK

How many valence electrons for N: 5  
How many valence electrons for H: 2 (1<sup>st</sup>) H: 2 (2<sup>nd</sup>)  
H: 2 (3<sup>rd</sup>) H: 2 (4<sup>th</sup>)

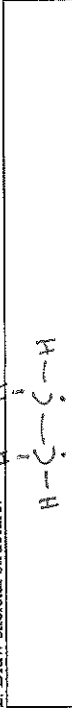
$\text{C}_2\text{H}_4$

1. How many valence electrons:

$$\begin{array}{r} \text{C} \times 2 \\ \text{H} \times 4 \\ \text{Charge} \end{array} \begin{array}{r} 4 \\ 4 \\ + 0 \end{array} \begin{array}{r} 8 \\ 4 \\ = 12 \end{array} \quad (\text{careful about signs})$$

Total number of Valence electrons = 12

2. Draw skeletal structure:

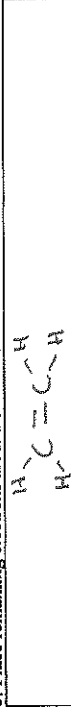


3. Count number of bonding electrons used: 10

4. Total number of Valence electrons number of bonding electrons used number of electrons remaining

$$\begin{array}{r} 12 \\ - 10 \\ = 2 \end{array}$$

5. Place remaining electrons around skeletal structure:



6. CHECK

How many valence electrons for C: 8 (1<sup>st</sup>) C: 8 (2<sup>nd</sup>)  
How many valence electrons for H: 2 (1<sup>st</sup>) H: 2 (2<sup>nd</sup>)  
H: 2 (3<sup>rd</sup>) H: 2 (4<sup>th</sup>)