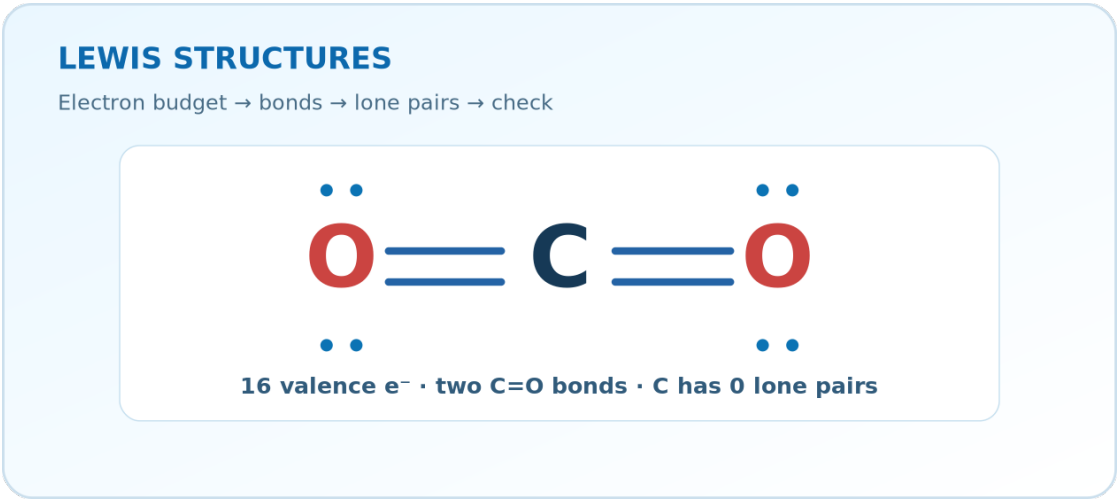
Lewis Structures — Electron Counting & Bonding

STUDENT WORKSHEET • NAME: _____ DATE: _____



Instructions: Show electron counts and charges when requested. Draw structures clearly and label lone pairs.

1. **Calculate the valence-electron total for CH_4. Sketch a Lewis structure.**

2. **Draw the Lewis structure of NH_3 and label the nitrogen lone pair.**

3. **Draw H_2O, showing both lone pairs on oxygen.**

4. **Draw CO_2 and identify the carbon-oxygen bond orders.**

5. **Draw HCN. How many electrons are in its C≡N triple bond?**

6. **Explain why the common neutral BF_3 Lewis structure is an octet-rule exception.**

7. **In CO_2, how many electron domains surround the central carbon? Explain.**

8. **How many valence electrons are present in NH_4^+? Describe the nitrogen bonds.**