

CONCEPT: STRUCTURAL FORMULA

- Molecular formulas are insufficient for organic compounds because they do not convey _____.
 - **Structural Information:** connectivity and orientation.
 - **Connectivity:** how atoms are connected to each other.
 - **Orientation:** will be discussed later.

Molecular Representations	
C_2H_6O	
Molecular Formula	Structure

EXAMPLE: Which of the following statements is incorrect about molecular formulas and molecular structures?

- a) Molecular formula and structure show which atoms are present in a molecule.
- b) Molecular structure cannot be used to calculate molecular weight.
- c) Molecular formula is sufficient to show the composition of a compound.
- d) Molecular structure shows how atoms are connected to each other.

Structural Formula: shows how atoms in a compound are _____ to one another.

- Same as _____ structure except we do not show lone pairs.

Lewis vs Structural	
$\begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{O}-\text{H} \\ \\ \text{H} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{O}-\text{H} \\ \\ \text{H} \end{array}$
Lewis Formula	Structural Formula

EXAMPLE: Draw a structural formula for C_2H_6 .

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PRACTICE: Propane (C_3H_8) is a component of liquified petroleum gas. Draw a structural formula for propane. (Hint: Carbon makes four bonds.)

PRACTICE: Methylamine (CH_5N) is a gaseous compound with a fishy smell. Draw this molecule using structural formula.