

Experiment 18 – Molecular Modeling of Hydrocarbons

Objective:

Chemical compounds will be constructed using modeling kits and analyzed using Lewis structures.

Materials:

Wooden Molecular Modeling kits (2 per group)

Procedure:

1. Use kits to construct the molecules listed in the data table.
2. Build only straight chain isomers of the hydrocarbons.
3. Determine the correct Lewis structure for the molecule.
4. Describe the nature of the covalent bonds in the molecule.

Data:

Name	Formula	Lewis Structure	Bonding Description	Model Approval
Methane	CH ₄			
Ethane	C ₂ H ₆			
Ethene	C ₂ H ₄			
Ethyne	C ₂ H ₂			
Propane	C ₃ H ₈			
Propene				
Propyne				
Butane	C ₄ H ₁₀			
Butene				
Butyne				
Pentane				
Pentene				
Pentyne				
Hexane				