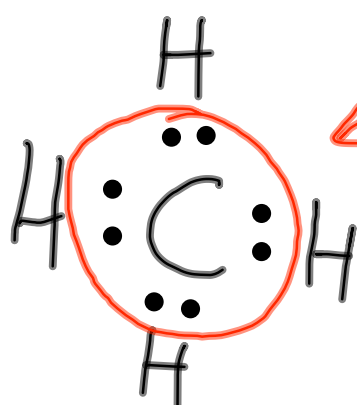
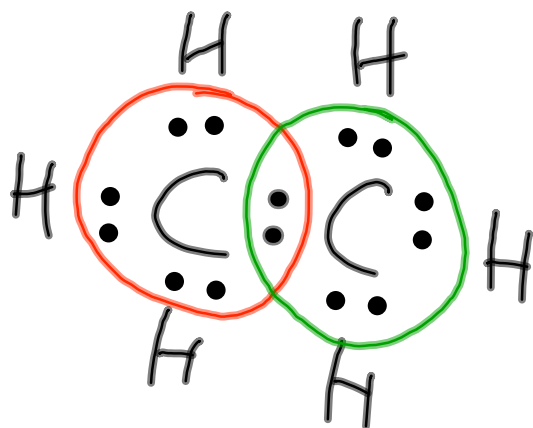


## Organic Chemistry - Carbon compounds

- $\text{C}$  • - Group **IVA**
- - 4 outer  $e^-$
- can covalently bond at 4 sites



complete octet  
methane

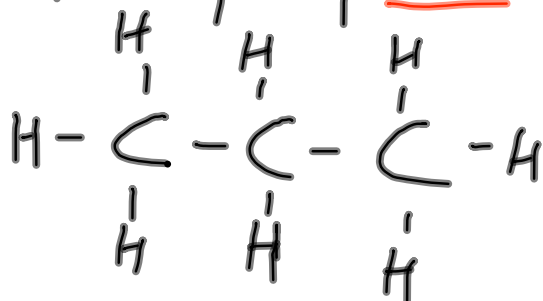


ethane

## Types of hydrocarbons

Alkanes - contain only single bonds

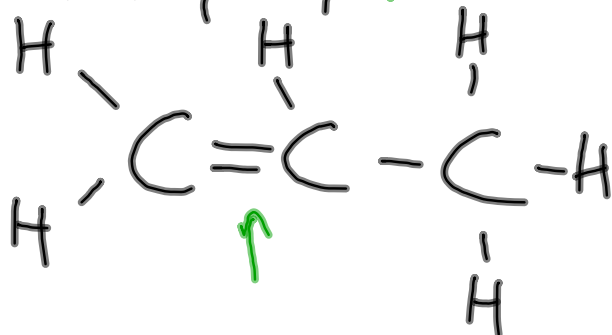
i.e. propane



- saturated  
 - every carbon is bonded to 4 other atoms

Alkenes - contain 1 or more double bonds

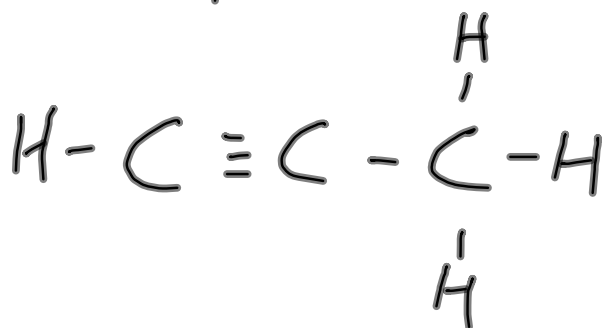
i.e. propene



- unsaturated  
 - some carbons are not bonded to 4 other atoms

Alkynes - contain 1 or more triple bonds

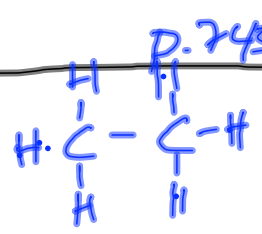
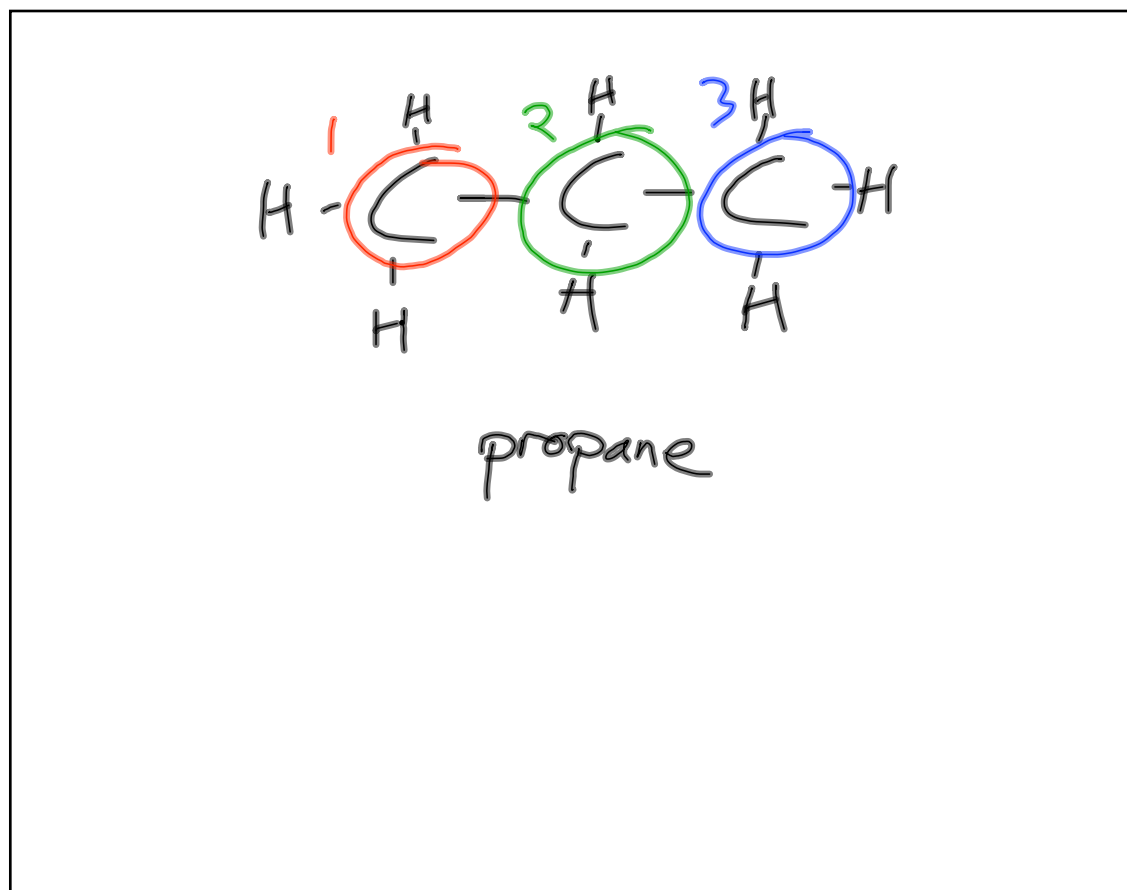
i.e. propyne



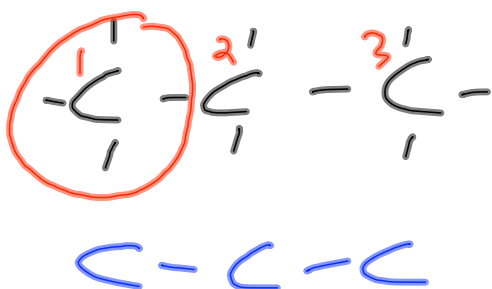
- unsaturated  
 - not common in nature

Alkane	Molecular	Condensed
methane	$\text{CH}_4$	$\text{CH}_4$
ethane	$\text{C}_2\text{H}_6$	$\text{CH}_3\text{CH}_3$
propane	$\text{C}_3\text{H}_8$	$\text{CH}_3(\text{CH}_2)\text{CH}_3$
butane	$\text{C}_4\text{H}_{10}$	$\text{CH}_3\text{CH}_2(\text{CH}_2)\text{CH}_3$
pentane	$\text{C}_5\text{H}_{12}$	$\text{CH}_3(\text{CH}_2)_3\text{CH}_3$
hexane	$\text{C}_6\text{H}_{14}$	$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$
heptane	$\text{C}_7\text{H}_{16}$	$\text{CH}_3(\text{CH}_2)_5\text{CH}_3$
octane	$\text{C}_8\text{H}_{18}$	$\text{CH}_3(\text{CH}_2)_6\text{CH}_3$

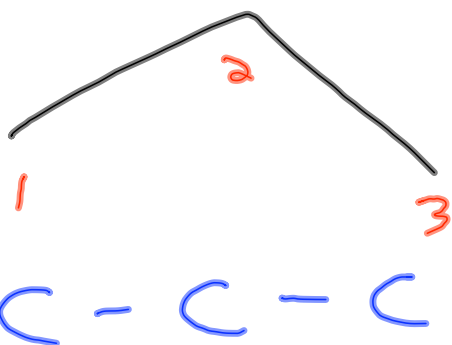
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## Ways of drawing chains - i.e., propane



skeletal model  
hydrogens are assumed to be there



line model  
assumes C + H to be there;  
C represented by bends + ends

