STUDENT INFO

Name: _____ Date: _____

Pre-lab Done: ☐

Pre-lab Questions

Organic Compounds: Alkanes

1. Given the following molecular formula, name the following linear alkanes (hydrocarbons):

CH_4	_____	C_2H_6	_____
C_4H_{10}	_____	C_3H_8	_____
C_5H_{12}	_____	C_9H_{20}	_____

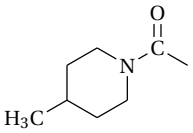
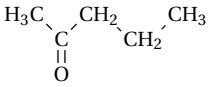
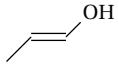
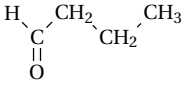
2. Given the following molecular formula, name the following cyclic alkanes (hydrocarbons):

C_3H_6	_____	C_6H_{12}	_____
C_4H_8	_____	C_7H_{14}	_____
C_5H_{10}	_____	C_9H_{18}	_____

3. Indicate the molecular, expanded, condensed and skeletal formula for the following linear alkanes:

	Molecular Formula	Expanded Formula	Condensed Formula	Skeletal Formula
Hexane				
Pentane				

4. Identify the functional groups:

Molecule	Functional Group	Molecule	Functional Group
			
			

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Experiment

Organic Compounds: Alkanes

Linear Alkanes Use the molecular models set for this experiment. Each sphere represents an element. Carbon is black, hydrogen white, oxygen red and nitrogen blue. Build up the following molecules and complete the table. Show your professor all molecular models before proceeding to next part.

	Expanded Formula	Condensed Formula	Skeletal Formula
Methane			N/A
Ethane			
Propane			
Butane			

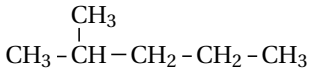
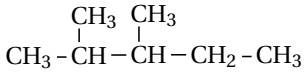
Cyclic Alkanes Use the molecular models set for this experiment. Each sphere represents an element. Carbon is black, hydrogen white, oxygen red and nitrogen blue. Build up the following molecules and complete the table. Show your professor all molecular models before proceeding to next part.

	Expanded Formula	Condensed Formula	Skeletal Formula
Cyclopropane			
Cyclobutane			
Cyclopentane			
Cyclohexane			

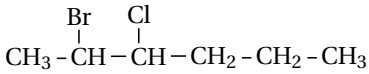
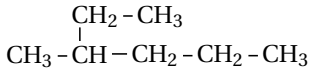
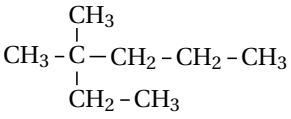
Short alkanes with substituents Use the molecular models set for this experiment. Each sphere represents an element. Carbon is black, hydrogen white, oxygen red and nitrogen blue. Build up the following molecules and complete the table. Show your professor all molecular models before proceeding to next part.

	Expanded Formula	Molecular Formula
Chloromethane		
Dichloromethane		
BromoChloro -Fluoromethane		
Chloroethane		

Long alkanes with substituents Use the molecular models set for this experiment. Each sphere represents an element. Carbon is black, hydrogen white, oxygen red and nitrogen blue. Build up the following molecules and complete the table. Show your professor all molecular models before proceeding to next part.

Name	Condensed Formula	Skeletal Formula
		
		

More alkanes with substituents There is no need to use the molecular models at this point. Now, name the following molecules:

Formula	name
	
	
	

Functional Groups Identity the following functional groups:

Formula	name