Hydrocarbons Lab

Teacher's Guide

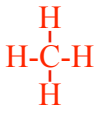
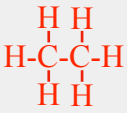
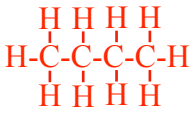
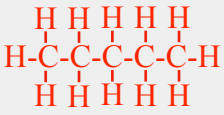
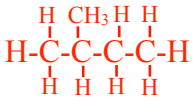
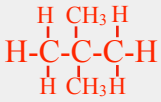
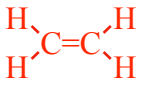
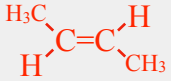
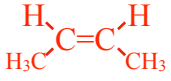
For more detailed background information consult the Ryler Enterprises Kit “Organic Chemistry” kit available on the Ryler Enterprises website: www.rylerenterprises.com. Click on “Instructions and Quizzes,” locate the **Organic Chemistry** section, then click on Organic Chemistry (ORG-1).

ATOM CENTERS-LAB 8		
Qty	Element	Color/Holes
12	Hydrogen	White/1
6	Carbon	Black/4

BONDING TUBES-LAB 8		
Qty	Length	Color
16	short	Tan
6	long	Grey

The students should fill in the empty slots on the lab sheet and build the model. You check the model and verify it with your initials or stamp in the “Model” column on the lab sheet.

The key is on the next page.

	1	2	3	4	5
	Name	Chemical Formula	Type of Compound	Structural Formula (use dashes)	Model
1	methane	CH_4	alkane		
2	ethane	C_2H_6	alkane		
3	butane	C_4H_{10}	alkane		
4	pentane	C_5H_{12}	alkane		
5	methylbutane	C_5H_{12}	alkane		
6	dimethylpropane	C_5H_{12}	alkane		
7	cyclohexane	C_6H_{12}	cyclic alkane		
8	benzene	C_6H_6	aromatic		
9	ethene	C_2H_4	alkene		
10	trans-2-butene	C_5H_{10}	alkene		
11	cis-2-butene	C_5H_{10}	alkene		
12	propyne	C_3H_4	alkyne		

Hydrocarbons Lab (Student Procedure)

Objective: To model and visualize the structure of hydrocarbons.

Materials: Ryler model kit parts: 6 black (carbon), 12 white (hydrogen) atom centers, 16 short single bonds, 6 long double (or triple) bonds.

1. Make one copy of the table the "Master" copy. Each student should fill out a sheet, but the instructor will check only the Master copy for the final grade.
2. Use a pencil to fill in all blank boxes, except the "Model" column. This is where your instructor stamps or initials when your model is correct.
3. Students should be prepared to answer questions about the models. Students may use scratch paper to draw Lewis structures to help determine structural formulas.

	Name	Chemical Formula	Type of Compound	Structural Formula (use dashes)	Model
1	methane		alkane		
2	ethane				
3	butane				
4		C_5H_{12}			
5		C_5H_{12}			
6		C_5H_{12}			
7	cyclohexane				
8	benzene				
9	ethene				
10	trans-2-pentene				
11	cis-2-pentene				
12	propyne				