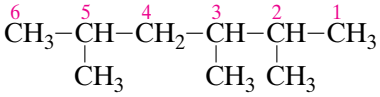
3. Number the carbon atoms in the continuous chain so that the alkyl groups have the lowest numbers possible.

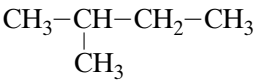


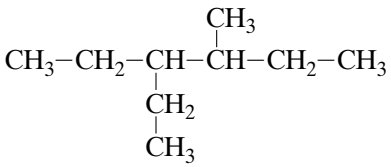
4. The methyl groups are on the carbon atoms numbered *2*, *3*, and *5*. Put the numbers of the positions of the alkyl groups, separated by commas, in front of the name of the alkyl group. Separate the numbers from the name with a hyphen.

2,3,5-trimethylhexane

PRACTICE *Answers in Appendix E*

Name the following molecules:

1. 

2. 

extension
Go to **go.hrw.com** for more practice problems that ask you to name alkanes.
Keyword: HC6ORGX

Properties and Uses of Alkanes

Properties for some straight-chain alkanes are listed in **Table 5.** The trends in these properties can be explained by examining the structure of alkanes. The carbon-hydrogen bonds of alkanes are nonpolar. The only forces of attraction between nonpolar molecules are weak intermolecular forces, or London dispersion forces. The strength of London dispersion forces increases as the mass of a molecule increases.

TABLE 5 ***Properties of Straight-Chain Alkanes***

Molecular formula	IUPAC name	Boiling point (°C)	State at room temperature
CH_4	methane	–164	gas
C_2H_6	ethane	–88.6	
C_3H_8	propane	–42.1	
C_4H_{10}	butane	–0.5	
C_5H_{12}	pentane	36.1	liquid
C_8H_{18}	octane	125.7	
$C_{10}H_{22}$	decane	174.1	
$C_{17}H_{36}$	heptadecane	301.8	solid
$C_{20}H_{42}$	eicosane	343	