IUPAC Organic Nomenclature Update

Use of the 1993 modifications to the IUPAC system for naming organic compounds, as described below, is preferred. Examples are shown on the next page. The following information is designed as a resource for Science 20 teachers who wish to incorporate the 1993 modifications with their classes.

Alkanes

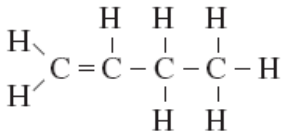
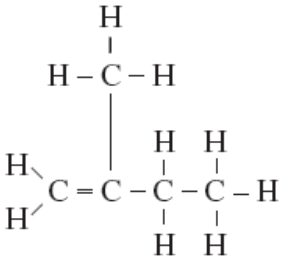
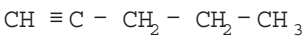
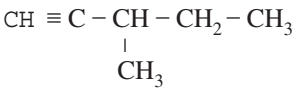
The naming of alkanes as described on page 114 of the Science 20 textbook requires no modification.

Alkenes and Alkynes

Naming alkenes and alkynes using the 1993 IUPAC modifications involves changes to the last step listed on page 127 of the Science 20 textbook as shown in bold below.

- If the compound is an alkene, the suffix *–ene* is used. If the compound is an alkyne, the suffix *–yne* is used.
- The double or triple bond must appear in the longest continuous chain of carbon atoms.
- Number the chain so that the carbon atoms with the double or triple bond receive the lowest number possible.
- **The location of the double or triple bond is communicated by a number placed before the suffix *–ene* or *–yne*.**
- **Use the prefixes listed in the table on page 114 to indicate the number of carbon atoms in the longest continuous carbon chain. For example, if the molecule has three carbon atoms in its longest chain, the prefix *prop* is used.**

Examples are shown on the next page.

Structural Representation and/or Chemical Formula	Name (1993 Modification)
 $CH_2CHCH_2CH_3$	but-1-ene
$CH_3CHCHCH_3$	but-2-ene
 $CH_2C(CH_3)CH_2CH_3$	2-methylbut-1-ene
$CH_3CHC(CH_2CH_3)CH(CH_3)CH_3$	3-ethyl-4-methylpent-2-ene
 $CHCCH_2CH_2CH_3$	pent-1-yne
$CH_3CH_2CCCH_2CH_3$	hex-3-yne
 $CHCCH(CH_3)CH_2CH_3$	3-methylpent-1-yne
$CH_3CH_2CCCH(CH_2CH_3)CH_2CH_3$	5-ethylhept-3-yne
$CHCCH(CH_3)CH(CH_2CH_3)CH_2CH_2CH_3$	4-ethyl-3-methylhept-1-yne