56. Review the common reactions of Group 15 elements in the *Elements Handbook,* and answer the following questions:
   a. Write formulas for each of the oxides listed for the Group 15 elements.
   b. Determine nitrogen's oxidation state in the oxides listed in (a).

RESEARCH & WRITING

57. Nomenclature Biologists who name newly discovered organisms use a system that is structured very much like the one used by chemists in naming compounds. The system used by biologists is called the *Linnaeus system,* after its creator, Carolus Linnaeus. Research this system in a biology textbook, and then note similarities and differences between the Linnaeus system and chemical nomenclature.

58. Common Chemicals Find out the systematic chemical name and write the chemical formula for each of the following common compounds:
   a. baking soda
   b. milk of magnesia
   c. Epsom salts
   d. limestone
   e. lye
   f. wood alcohol

ALTERNATIVE ASSESSMENT

59. Performance Assessment Your teacher will supply you with a note card that has one of the following formulas on it: $NaCH_3COO \cdot 3H_2O$, $MgCl_2 \cdot 6H_2O$, $LiC_2H_3O_2 \cdot 2H_2O$, or $MgSO_4 \cdot 7H_2O$. Design an experiment to determine the percentage of water by mass in the hydrated salt assigned to you. Be sure to explain what steps you will take to ensure that the salt is completely dry. If your teacher approves your design, obtain the salt and perform the experiment. What percentage of water does the salt contain?

60. Both ammonia, NH_3, and ammonium nitrate, NH_4NO_3, are used in fertilizers as a source of nitrogen. Which compound has the higher percentage of nitrogen? Research the physical properties of both compounds, and find out how each compound is manufactured and used. Explain why each compound has its own particular application. (Consider factors such as the cost of raw ingredients, the ease of manufacture, and shipping costs.)

extension

Graphing Calculator Calculating Molar Mass

Go to **go.hrw.com** for a graphing calculator exercise that asks you to calculate the molar mass of a compound.

Keyword: HC6FRMX