Section 6.3 Naming Compounds and Writing Formulas
(pages 170–175)

This section explains how to name and write formulas for ionic and molecular compounds.

Reading Strategy (page 170)
Predicting Before you read, predict the meaning of the term polyatomic ion, and write your prediction in the table. After you read, if your prediction was incorrect, revise your definition. For more information on this Reading Strategy, see the Reading and Study Skills in the Skills and Reference Handbook at the end of your textbook.

<table>
<thead>
<tr>
<th>Vocabulary Term</th>
<th>Before You Read</th>
<th>After You Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyatomic ion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describing Ionic Compounds (pages 171–173)

1. Is the following sentence true or false? The name of an ionic compound must distinguish the compound from other ionic compounds containing the same elements. _____________

2. Circle the letter(s) of the information provided by the formula for an ionic compound.
   a. number of bonds in the compound  
   b. ratio of ions in the compound  
   c. elements in the compound

3. Is the following sentence true or false? Names of ions are formed by placing the suffix -ide after part of the name of the nonmetal. _____________

4. When a metal forms more than one ion, the name of the ion contains a Roman numeral to indicate the _____________ on the ion.

5. A _____________ is a covalently bonded group of atoms that has a positive or negative charge and acts as a unit. Circle the correct answer.
   - charged particle  
   - molecule  
   - polyatomic ion
Chapter 6  Chemical Bonds

6. Circle the letter that identifies the number of ammonium ions needed to form a compound with one phosphate ion. Use the table to help you.

   a. one
   b. two
   c. three

<table>
<thead>
<tr>
<th>Name</th>
<th>Formula</th>
<th>Name</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium</td>
<td>NH₄⁺</td>
<td>Acetate</td>
<td>C₂H₃O₂⁻</td>
</tr>
<tr>
<td>Hydroxide</td>
<td>OH⁻</td>
<td>Peroxide</td>
<td>O₂²⁻</td>
</tr>
<tr>
<td>Nitrate</td>
<td>NO₃⁻</td>
<td>Permanganate</td>
<td>MnO₄⁻</td>
</tr>
<tr>
<td>Sulfate</td>
<td>SO₄²⁻</td>
<td>Hydrogen sulfate</td>
<td>HSO₄⁻</td>
</tr>
<tr>
<td>Carbonate</td>
<td>CO₃²⁻</td>
<td>Hydrogen carbonate</td>
<td>HCO₃⁻</td>
</tr>
<tr>
<td>Phosphate</td>
<td>PO₄³⁻</td>
<td>Hydrogen phosphate</td>
<td>HPO₄²⁻</td>
</tr>
</tbody>
</table>

Describing Molecular Compounds (pages 174–175)

7. Circle the letter(s) of the information provided by the name and formula of a molecular compound.

   a. number of atoms in the compound
   b. number of bonds in the compound
   c. elements in the compound

8. What appears first in the name of a molecular compound? Circle the correct answer.

   a. the least metallic element
   b. the most metallic element
   c. the polyatomic ion

9. Is the following sentence true or false? The formula for a molecular compound is written with the symbols for the elements in the same order as the elements appear in the name of the compound.

10. Circle the letter that identifies the method of naming the number of atoms in molecular compounds.

    a. prefix
    b. suffix
    c. number