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## CHECK YOUR LEARNING

1. (a) nitrate; potassium nitrate
   (b) hydroxide; calcium hydroxide
   (c) carbonate; calcium carbonate
   (d) sulfate; copper(II) sulfate
   (e) hydroxide; potassium hydroxide
   (f) nitrate; iron(III) nitrate
   (g) chlorate; copper(II) chlorate
   (h) phosphate; ammonium phosphate
2. (a) $KNO_3$
   (b) $BaSO_4$
   (c) $NH_4NO_3$
   (d) $Al_2(SO_4)_3$
   (e) $KClO_3$
   (f) $Cu(NO_3)_2$
   (g) $PbSO_4$
   (h) $Sn_3(PO_4)_2$
3. (a) –ate
   (b) –ide
4. Nitrate contamination can come from fertilizer used on farms.
5. (a) tin(II) carbonate
   (b) calcium chloride
   (c) iron(III) hydroxide
   (d) manganese(IV) oxide
   (e) potassium sulfide
   (f) ammonium sulfate
   (g) manganese(II) chlorate
   (h) lead(II) iodide
6. (a) $CaSO_4$
   (b) $NH_4Cl$
   (c) $Cu_2CO_3$
   (d) BaS
   (e) $Ca(ClO_3)_2$
   (f) $Sn(OH)_2$
   (g) $Fe_3(PO_4)_2$
   (h) AlN
7. The parentheses indicate that the oxygen and hydrogen atoms do not react separately: each $OH^-$ group is a polyatomic anion that stays together. The subscript indicates that there are two of these groups with a total charge of −2.
8. Ammonium is the exception: it is a cation that is made up of non-metal atoms, rather than a single metal ion.
9. The cation is always written first.
10. (a) **Table 2** Identifying Ions

| Compound | Cation(s) | Anion(s) |
|---|---|---|
| $Fe(OH)_3$ | 1 $Fe^{3+}$ | 3 $OH^-$ |
| $Cu(NO_3)_2$ | 1 $Cu^{2+}$ | 2 $NO_3^-$ |
| $Al_2(SO_4)_3$ | 2 $Al^{3+}$ | 3 $SO_4^{2-}$ |
| $(NH_4)_2CO_3$ | 2 $NH_4^+$ | 1 $CO_3^{2-}$ |
| $K_3PO_4$ | 3 $K^+$ | 1 $PO_4^{3-}$ |

11. (a) sodium chloride: NaCl; sodium chlorate: $NaClO_3$
    (b) chloride: $Cl^-$; chlorate: $ClO_3^-$
    (c) $CaCl_2$; $Ca(ClO_3)_2$
12. One strategy is to eat fewer prepared foods, such as frozen dinners, and more fresh foods.