

## Chapter 5

Use with Section 1

## REINFORCEMENT

# Describing a Chemical Reaction

Complete each item.

1. Chemical changes in a substance result in \_\_\_\_\_  
\_\_\_\_\_
2. Physical changes in a substance result in \_\_\_\_\_  
\_\_\_\_\_
3. A chemical reaction begins with substances called \_\_\_\_\_ and ends with substances called \_\_\_\_\_.
4. In a word equation, the substances on the left of the arrow are the \_\_\_\_\_, and the substances on the right side of the arrow are the \_\_\_\_\_. The arrow should be read as \_\_\_\_\_.
5. Give two reasons why scientists prefer to use chemical equations instead of word equations?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
6. What do the subscripts in a chemical equation tell about the equation?  
\_\_\_\_\_  
\_\_\_\_\_
7. Suppose you have a holiday celebration and over the evening six logs are burned in a fireplace. All that's left is ashes, but you know that there are just as many atoms as there were before—they're just in a different form. Explain how you know that.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. The fire in the fireplace is an example of an endothermic reaction. Explain what happens in an exothermic reaction. \_\_\_\_\_  
\_\_\_\_\_
9. In one of the lab experiments you observed, water was split into hydrogen and oxygen in an endothermic reaction. Explain what happens in an endothermic reaction.  
\_\_\_\_\_
10. If the equation below is balanced, write *Yes* in the line provided. If it is not balanced, write *No*.
  - a.  $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$   
\_\_\_\_\_
  - b.  $4\text{Al} + 3\text{O}_2 \rightarrow \text{Al}_2\text{O}$   
\_\_\_\_\_
  - c.  $\text{NH}_4\text{OH} + \text{HC}_2\text{H}_3\text{O}_2 \rightarrow \text{NH}_4\text{C}_2\text{H}_3\text{O}_2 + \text{H}_2\text{O}$   
\_\_\_\_\_
  - d.  $2\text{Al} + 6\text{NaOH} \rightarrow 2\text{Na}_3\text{AlO}_3 + 2\text{H}_2$   
\_\_\_\_\_