

## LESSON

## 6

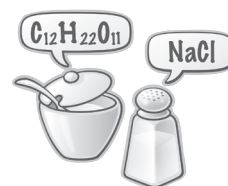
## ACTIVITY

# A New Language

## Chemical Names and Symbols

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

**Purpose**

To learn the language of chemical symbols and chemical names.

**Materials**

- set of glass vials containing common elements and compounds

**Part I: Observations**

Look at each vial and fill in the data in the table.

Vial	Name	Chemical formula	Description
1			
2	copper (II) nitrate		
3			blue-green crystals
4			
5		$\text{NaNO}_3(s)$	
6			
7			
8			
9	nitric acid		
10			orange-brown powder
11		$\text{NaOH}(aq)$	
12			
13			
14			clear, colorless solution
15	zinc sulfate		
16			
17		$\text{Cu}(\text{NO}_3)_2(aq)$	

## Part 2: Cracking the Code

1. Examine the contents of the vials and their labels. Write down at least six patterns you notice.
2. These symbols represent elements. Identify each element.
  - a. Cu
  - b. H
  - c. Zn
3. Translate these element names into their symbols.
  - a. sulfate
  - b. nitrate
  - c. hydroxide
4. Compounds are substances that are made up of more than one element. In your data table, place a C next to the number of each vial that contains a compound.
5. What do you think (s), (l), and (g) stand for?
6. How would you write the chemical formula for ice?
7. What do all the substances labeled (aq) have in common?
8. Get Vial 18 from your instructor. Substances from two of the vials have been mixed together in Vial 18. Figure out the chemical formulas for the two substances.
9. **Making Sense** In Lesson 2: A Penny for Your Thoughts, zinc, Zn(s), and sodium hydroxide, NaOH(aq), were used to change the color of a penny to silver. Do you think the penny was coated with silver, Ag(s)? Explain.