

## Skills Worksheet

**Directed Reading B****Section: Electrons and Chemical Bonding** (pp. 226–229)**COMBINING ATOMS THROUGH CHEMICAL BONDING**

- \_\_\_\_\_ 1. Which of the following substances results from combining atoms of carbon, hydrogen, and oxygen?
- sugar
  - salt
  - water
  - sulfuric acid
- \_\_\_\_\_ 2. Which of the following is NEVER true about electrons when chemical bonds form?
- Electrons are shared.
  - Electrons are lost.
  - Electrons are destroyed.
  - Electrons are gained.
- \_\_\_\_\_ 3. Which of the following is an interaction that holds two atoms together?
- a chemical hold
  - a chemical bond
  - a chemical interaction
  - a bond of chemicals
4. The joining of atoms to form new substances is called \_\_\_\_\_.
5. People can use \_\_\_\_\_ to discuss how and why atoms form bonds.

**ELECTRON NUMBER AND ORGANIZATION**

- \_\_\_\_\_ 6. Which of the following is the same as the number of protons in an atom?
- valence number
  - atomic number
  - chemical number
  - ionic number
- \_\_\_\_\_ 7. How many valence electrons are in an oxygen atom?
- 2
  - 4
  - 6
  - 8

**Directed Reading B** *continued*

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- \_\_\_\_\_ **8.** What do elements within the same group have the same number of?
- a.** valence electrons
  - b.** protons
  - c.** neutrons
  - d.** atoms

**Match the correct description with the correct term. Write the letter in the space provided.**

- \_\_\_\_\_ **9.** an electron in the outermost energy level      **a.** group
- \_\_\_\_\_ **10.** number of protons in an atom      **b.** valence electron
- \_\_\_\_\_ **11.** family on the periodic table to which an element belongs      **c.** atomic number

- 12.** Which electrons in an atom make chemical bonds?

\_\_\_\_\_

\_\_\_\_\_

- 13.** How can the periodic table help you determine the number of valence electrons?

\_\_\_\_\_

\_\_\_\_\_

**TO BOND OR NOT TO BOND**

- \_\_\_\_\_ **14.** What determines whether an atom will form bonds?
- a.** the number of electrons
  - b.** the number of valence electrons
  - c.** the number of protons
  - d.** the number of neutrons
- \_\_\_\_\_ **15.** Which group on the periodic table contains elements that do not normally form chemical bonds?
- a.** Group 2
  - b.** Group 6
  - c.** Group 10
  - d.** Group 18

- 16.** The outermost energy level of most atoms is considered full if the level contains \_\_\_\_\_ electrons.

- 17.** Helium atoms need only \_\_\_\_\_ valence electrons to have a filled outermost energy level.